HYDROELECTRIC RELICENSING AND NUCLEAR ENERGY

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

OF THE

COMMITTEE ON ENERGY AND COMMERCE

HOUSE OF REPRESENTATIVES

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HYDROELECTRIC RELICENSING AND NUCLEAR ENERGY

WEDNESDAY, JUNE 27, 2001

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENERGY AND AIR QUALITY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10:15 a.m., in room 2123, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Cox, Largent, Burr, Shimkus, Wilson, Shadegg, Pickering, Bryant, Radanovich, Bono, Walden, Tauzin (ex officio), Boucher, Sawyer, Wynn, Doyle, John, Markey, McCarthy, Strickland, Barrett, Luther, and Dingell (ex officio).

Staff Present: Jason Bentley, majority counsel; Andy Black, policy coordinator; Dwight Cates, majority professional staff; Peter Kielty, legislative clerk; Elizabeth Brennan, Intern; Sue Sheridan, minority counsel; and Eric Kesster, minority professional staff.

Mr. BARTON. The subcommittee will come to order. We want the record to show that the reserve recording clerk got here before the primary recording clerk. So we are appreciative that you were able to come. You got here quicker than the person who is supposed to be here.

We are going to hold our hearing today on hydro relicensing and nuclear energy. This is another in a long series of hearings that we have held on national energy policy. As yesterday's Wall Street Journal reported, the Nuclear Regulatory Commission is about to be inundated with license renewal applications from many of our Nation's 103 nuclear power plants. Those applications are extremely important to our Nation's future. If the NRC determines that these plants should have the licenses extended, we can be assured many more years of safe and reliable electricity generated from nuclear power. One topic of today's hearing is the readiness of the NRC to handle those applications properly, whether Congress should make any changes to NRC and relevant law in order to handle this coming relicensing application search. I would like to thank all of our witnesses today who are going to speak on that subject.

I want to particularly thank Chairman Meserve of the NRC, who greatly altered his schedule to appear before this subcommittee. He was in Atlanta yesterday, in a retreat with a professional staff, and changed his schedule to appear here, and we appreciate that.

I would have to say that the Wall Street Journal's line drawing that you viewed in a recent issue does not do you justice. But your wife may like it; I don't know.

There are several other nuclear issues that deserve our attention. The NRC might also begin to receive applications, believe it or not, for new nuclear power plants or expansions of existing capacity. We have before the subcommittee today representatives of some of those potential applicants and other interested parties. The question might be, is the NRC ready for new applications? What laws will affect our ability to get a fair, science-based, and timely answer to those permit applications if they do come?

The subcommittee has also got a history on these issues of acting in a bipartisan fashion on such things as taking the Nuclear Waste Fund off budget and looking at comprehensive legislation dealing with Yucca Mountain. We are going to await a recommendation from the scientists at Yucca Mountain and then from the Secretary of Energy before we begin to move a bill on high-level nuclear waste. This subcommittee is not going to be complacent while we are waiting.

I personally think we should act again, and very soon, to take the Nuclear Waste Fund off budget, so that the ratepayers who have paid their money into this fund over the last 20-some-odd years actually get what they paid for.

Finally, at some point the subcommittee is going to reauthorize the Price-Anderson Act which lapses in August 2002, which is next year. There are many in the industry that think one of the most important signals that Congress could send in this session would be to reauthorize Price-Anderson.

This is an issue that we are going to make a decision on as to when to take it up, in consultation with our Minority members, but we are going to take it up at some point, hopefully this year.

Next we are going to look at hydroelectric power. There are many dams licensed by the Federal Energy Regulatory Commission that are also coming up or are up for relicensing very soon. Congress should review the relicensing process to make certain that all who submit an application for renewal can receive a timely response, with appropriate conditions, at an acceptable cost. A recent report by the FERC indicates the current process may not allow that, and many licensees have told me that they agree and think that there are significant reforms that should be enacted on the hydro front.

We have before the subcommittee today a representative of the Coalition of Hydropower Licensees and the environmental community, as well as many others who can testify about the process.

The Chairman of the FERC, Curt Hébert, is not here at the moment but will be here by 1 o'clock. He has pending business before the FERC today and has had to change his schedule also in order to come over and appear before the subcommittee this afternoon. So I thank him in advance for his willingness to come before the committee.

Next week is the Fourth of July work period. After that, Congress and this subcommittee will return to aggressive action on energy. Chairman Tauzin and I have discussed the subcommittee going straight to work on a series of issues the week of our return.

We would like to act on conservation, nuclear energy, hydro relicensing, clean coal, possibly more.

Very soon thereafter, we want to start hearings and discussions concerning structural reform of our electricity laws, with a goal of increasing transmission capacity, improving the operation of our transmission markets and removing barriers to wholesale and retail competition generation. I am going to be working very closely for the rest of this summer with all members of the subcommittee and especially with the ranking member, Mr. Boucher, my good friend of the great State of Virginia. I am told that he, Mr. Whitfield, Mr. Shimkus, Mr. Strickland, Mr. Doyle, and others are soon going to introduce legislation on clean coal technology, and hopefully that can be drafted in a way that this subcommittee can look at it officially and support that very timely issue.

With that, I would like to recognize the ranking member, Mr. Boucher of Virginia.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. Given the length of the data we have before us and the number of witnesses who will be testifying before the committee during the course of this day, I am going to be exceedingly brief in these remarks. In fact, this morning I am simply going to make three points.

First, I think it is vitally important that we take the time which is necessary to construct carefully the subcommittee's legislation. And I am somewhat concerned that the schedule that we have before us for reporting legislation over the next several weeks is ambitious, and so I would simply caution this morning that whatever time is necessary to carefully to construct the committee's bills should be taken.

I appreciate the approach that Chairman Barton has taken to the subcommittee's work on the entire range of matters now before us. At each step, he has consulted and sought recommendations from our side. He has offered and continues to offer ample opportunity for this side to participate fully in the drafting process. And I thank him for taking this approach. I realize that the time constraints we are now facing for reporting comprehensive energy legislation is not of his making or, for that matter, of Chairman Tauzin's making, but I must voice my concern this morning about those constraints nonetheless.

Second, and with reference to today's hearing, I appreciate the acceptance by the chairman of our request that a markup of the Price-Anderson reauthorization be deferred until a later time. The many complex matters that reauthorization will entail will necessarily require more time than is available this summer. It is appropriate that we begin the discussion of those matters this morning with our two panels of witnesses, and I look forward to their testimony, which will help to frame the issues we will address at a later time during the course of this year.

I support and encourage reauthorization of Price-Anderson on the longer time line upon which we are now operating for this matter. I would encourage, however, that we act now in order to take the Nuclear Waste Fund off budget. And I am pleased to hear the chairman's remarks in sum on that same position this morning.

Third, as we address hydroelectric relicensing matters, I want to urge that environmental concerns be given at least the priority that they have in the current law. I acknowledge the concerns that have been expressed by the industry that the existing relicensing process is time-consuming, cumbersome and costly, but as we seek ways to address those industry concerns and facilitate the relicensing process, we in my view must not diminish the consideration current law requires for the protection of environmental resources.

Thank you very much, Mr. Chairman, for organizing our discussion today, and I yield back and look forward to hearing from our witnesses.

Mr. BARTON. I thank the gentleman from Virginia.

We would recognize the distinguished full committee chairman, Mr. Tauzin of Louisiana.

Chairman TAUZIN. Thank you, Mr. Barton, both for this hearing and for the extraordinary lineup of witnesses who will help us understand both the nuclear and the hydro relicensing issues that we will shortly take up. Let me thank my friend, Mr. Boucher, for his kind words of appreciation and to the process we are trying to execute.

In the life of our committee, time has always been short. Time has always been constrained, and we always work under very tough time lines, and in this case, we will obviously be faced with a case of that in the next several weeks.

The Nation, however, I think expects us to act. There is, I think, no larger consumer issue facing America today than the energy issue. It perhaps even dwarfs the issue that Mr. Dingell and I have been working on, the broadband issue in the telecom area, and soon-to-be-introduced third-generation spectrum issue that will make wireless broadband hopefully available to all Americans.

Because energy is becoming short and prices are beginning to rise in a number of marketplaces, consumers are keenly interested in what we intend to do, and not in the long run, but in the short run, immediately, as soon as we can, to alleviate what many experts are predicting to be even larger price increases and other problems and shortages.

In that light, nuclear power and hydro now, to the surprise of many Americans, provide two of the Nation's largest sources of electricity after coal, even larger than natural gas. And while nuclear was thought for a while to be on its last leg, there are now many nuclear companies who are prepared and anxious to relicense their facilities and execute new plants for construction over the next decade.

Mr. Boucher, we are talking about a terribly benign environmental way to produce electricity, if it can be done safely, and we know it can be today. And the question is, will the Nuclear Regulatory Commission be prepared for all these relicensing permits, with 25 percent of staff eligible for retirement, can you handle what may be a new future for nuclear energy in America? That, of course, is one of the key questions we will want answered today.

Second, let me thank you, Mr. Meserve, for the several legislative proposals you have already submitted to us. We have been exam-

ining those and sharing them in this process, and we thank you for those efforts.

Third, let me ask that this hearing also educate us on the question whether it is time, in fact, to reauthorize Price-Anderson. And while we may not be acting on it in this package, do we need to act on it relatively soon? We are told that the nuclear industry will not build new plants, unless Price-Anderson is reauthorized. And because it is set to expire on August of 2002, perhaps we need to expedite the relicensing of Price-Anderson as soon as we can, following this package.

In the area of hydroelectric, we know that hydroelectric power produces—has the capacity to produce as much as 12 percent of this Nation's electricity, and yet it is only now providing about 8 percent. Out west, it is a critical component; that is, capacity is one-third of the electric power needed out west at a time when the West is suffering through shortages of power and potential blackouts.

We know that the drought out west has reduced that potential. In fact, we understand it is now down about 15 percent of that capacity. But when we talk about one-third of a region's electric generation capacity, we would be, I think, terribly remiss not to examine the relicensing process, not to roll back or to diminish environmental concerns, but to ensure that we have a process that is reasonable and gets its power back online, where in fact it can be put back online in a region of the country that desperately depends upon this form of energy for so much of its power.

In short, this hearing today is going to educate us as we move into legislative markup very soon. And Mr. Barton and Mr. Boucher, I want to thank you again for the cooperative way in which you are approaching this very challenging time for our committee, and I also want to thank my friend, the ranking member of the full committee, Mr. Dingell, for the help of his staff and his own guidance as we move forward in trying to find as many bipartisan agreements we can on this energy package.

Mr. Chairman, I thank you and yield back the balance of my time.

Mr. BARTON. I thank the chairman, and would recognize the ranking minority member of the full committee, Mr. Dingell of Michigan, for an opening statement.

Mr. DINGELL. Mr. Chairman, thank you. I want to begin by expressing my appreciation to you for the hearing today, and also to express my appreciation to the chairman of the full committee, Mr. Tauzin, for the way in which he has been working with me on the concerns which we share.

I want to say that there are many things that this committee can do to improve the energy situation in the country. I would note that none of them will give us a speedy or a quick fix. I also would note that to move fast may be to move poorly. And I think that the result of what we do in this process will be more important to do well than to do in any great haste, because it is doubtful that any of the things which we will do will have a very immediate impact on the situation that we confront.

Nevertheless, I and my colleagues on this side are prepared to work with the leadership, anxious to work with the leadership of

this committee, and hope to be able to fashion in an expeditious fashion a good response to the problems which we confront.

I would note that these are problems. These do not constitute a crisis. I think both sides of the aisle are trying to work together on a number of issues in an effort to report bipartisan legislation out of this committee. That is good. I would note that these hearings represent an attempt by the majority to accommodate the insistence of the minority upon having hearings to learn the effects prior to undertaking legislative action. That is good.

Unfortunately, the process will best result, I think, in a razor-thin record on issues of great complexity and importance. Those events may then curtail this committee's ability to do more than legislate on the margins of some very important matters. I do wish to reiterate that I will do the best I can to work with my friend, Mr. Tauzin, and you and all the members, to try and reach consensus on a number of these matters in the next 2 weeks; although I note again that I think that that is probably too fast and will lead to probably fights unneeded, and also perhaps what may be constituted as a political bill as opposed to a real substance approach to the situation.

In 1987, this committee reported a Price-Anderson bill with a strong bipartisan vote. I support nuclear power, and I believe that by and large, nuclear power and that act has served this Nation well over time. I will note that there are a lot of problems that are going to have to be addressed in the nuclear situation. I would also observe that given a thorough examination of the issue, I hope the committee will again report legislation to reauthorize the act.

Today's hearing is a good start, but I do not believe the Congress should act on Price-Anderson without developing the kind of thoughtful record that supported the three prior extensions in 1965, 1975, and 1988. On the utility side, it may be that the industry needs changes in the law to ensure that new and smaller reactors are not saddled with overly high obligations in the event of an accident. On the contractor side, it is worth examining whether DOE should continue to indemnify its contractors for injury to the public, even when gross negligence or willful misconduct by the contractor was the cause. Our main concern should be whether the act continues to serve the public interest. And I think a question of the kind just raised is whether the public interest there is served.

Turning to hydropower, I have taken a long and a strong interest in the hydroelectric relicensing process. In the mid-1980's, I worked closely with Mr. Markey and a number of other members of this committee to enact the Electric Consumers Protection Act, which directed FERC to give equal consideration to fish, wildlife, recreation, and other environmental benefits, something that had been grossly disregarded both by the statute, by the government, by the industry, and by the regulatory process in the years since the original licensing process had begun. The final version of the legislation was overwhelmingly passed by a Republican-controlled Senate and became the law with President Ronald Reagan.

While there is certainly room for improving the licensing process, those improvements should not come at the expense of environmental safeguards that are of critical importance to river eco-

systems, States, the municipalities, the Indian tribes, fishermen, boaters, farmers, and the public's drinking water.

Making changes in a responsible manner requires time and effort. Unfortunately, that need to provide time and effort appears to conflict with the haste that I see possible here.

Since last year, there are two new reports on FERC's hydroelectric relicensing process for us to consider. One is written by FERC, I would note hardly a neutral party, and the other by the General Accounting Office, an independent agency and known for its independence and integrity.

Now, I would note that this FERC staff report seems to say that everybody but FERC is the problem, and giving FERC more power is the answer. Interestingly enough, the FERC staff cited the individual States, acting pursuant to their Clean Water Act rights and responsibilities, as the factor most responsible for extending the duration of the licensing process. If this is true, it raises great questions about the extent to which we can expect the duration of the licensing process to be expedited without opening the Clean Water Act and without curtailing the rights of several States. The GAO report, which was commissioned by two of our Republican colleagues, calls into question the very basis of FERC's claims that environmental protection, fishermen, hunters, farmers and Native Americans are the cause of the hydroelectric industry's woes.

I am hardly surprised to see FERC taking the position it takes, since I believe that it has been a major part of the problem. The GAO report concluded that the FERC lacks the data to back up any of the assertions that it has made in its study on policy recommendations. This should come as no surprise to any of my colleagues, who will recall that I raised this very issue and related questions last year. I still want to know how many licenses were turned down or delayed by FERC as a result of environmental protections imposed by the resource agencies. And if there is anybody around here from FERC, they should be prepared for a little questioning on that matter today or any other time—10,000, 1,000, 100, 10 or 1—and the question then is, if this situation is so bad, why do utilities pay above-market value for these threatened facilities?

Rivers are a precious natural resource. They are a property of all of the people, and they should be managed by us and other regulatory agencies for the benefit of the public. They are not luxury swim clubs to be run by FERC for the benefit of any special interest. I do know that there are things we can do, even in a short timeframe, that would assist the industry in the manner of creating a good public policy, if the members of this committee and the stakeholders are willing to accept modest changes. For example, perhaps we can make some progress in areas of flexibility with regard to equally protective but lower-cost alternatives to agency prescriptions; possibly fixing FERC's inadequate data collection, and perhaps providing some regulatory incentives for project owners to upgrade their turbines to more fish-friendly and efficient models.

In any event, I want you to know, Mr. Chairman, I will be happy to work with you to try and make this process go forward to address complex technical issues in a reasonable timeframe under regular order. And, of course, I am always prepared for a vigorous

debate in markup if the situation goes sour, which I hope it will not.

In any event, I look forward to our distinguished witnesses and thank you for your kindness and yield back the balance of my time.

[The prepared statement of Hon. John D. Dingell follows:]

PREPARED STATEMENT OF HON. JOHN D. DINGELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MICHIGAN

Thank you, Mr. Chairman.

Today's hearing is a curious one. Those in the audience are likely asking themselves what nuclear and hydroelectric issues have in common with each other. For now, the clearest link I can see is that both are complex long term issues that we are under pressure to act rapidly upon to show Congressional action on energy policy.

I think both sides of the aisle are trying to find ways to work together on a number of issues in an effort to report bipartisan energy legislation out of this Committee. I would note that these hearings represent an attempt by the Majority to accommodate our insistence upon having hearings to learn the facts prior to undertaking legislative action.

Unfortunately, this process will at best result in a razor thin record on issues of extreme complexity and importance, and severely curtail this Committee's ability to do more than legislate on the margins of some of these matters.

Nonetheless, I want to be clear that I will do what I can to work with Chairman Tauzin, you and all our Members to try to reach consensus on a number of these matters in the next two weeks.

In 1987, this Committee reported a Price-Anderson bill with a strong bipartisan vote. I support nuclear power, and believe by and large the Act has served the nation well over time.

Given a thorough examination of the issue, I hope the Committee will again report legislation to reauthorize the Act. Today's hearing is a good start. But I do not believe Congress should act on Price-Anderson without developing the kind of thoughtful record that supported three prior extensions in 1965, 1975, and 1988.

On the utility side, it may be that industry needs changes in the law to ensure that new and smaller reactors are not saddled with overly high obligations in the event of an accident. On the contractor side, it is worth examining whether DOE should continue to indemnify its contractors for injury to the public even when gross negligence or willful misconduct was the cause. Our main concern should be whether the Act continues to serve the public interest.

Turning to hyrdopower, I have long taken a strong interest in the hydroelectric relicensing process. In the mid-1980s, I worked closely with Mr. Markey and several other Committee members to enact the Electric Consumers Protection Act, which directed FERC to give equal consideration to fish and wildlife, recreation, and other environmental benefits. The final version of the legislation overwhelmingly passed a Republican-controlled Senate and became law with the assent of President Ronald Reagan.

While there is certainly room for improving the licensing process, those improvements should not come at the expense of environmental safeguards that are of critical importance to riverine ecosystems and the states, municipalities, tribes, fishermen, boaters, farmers, and the public's drinking water. Making such changes in a responsible manner requires time and effort. Unfortunately, we appear to be rushing to legislate on this complex matter.

Since last year, too, there are two new reports on FERC's hydroelectric licensing process for us to consider: one written by FERC —a not quite neutral party—and the other by the independent General Accounting Office.

Not surprisingly, the FERC staff report seems to say that everyone but FERC is the problem and giving FERC more power is the answer. Interestingly, the FERC staff cited the individual states—acting pursuant to their Clean Water Act rights and responsibilities—as the factor most responsible extending the duration of the licensing process. If this is true, it raises serious questions about the extent to which we can affect the duration of the licensing process without opening the Clean Water Act and curtailing the rights of states.

The GAO report—commissioned by two of our Republican colleagues—calls into question the very basis of FERC's claims that environmental protection, fishermen, hunters, farmers, and Native Americans are at the cause of the hydroelectric industries woes. It concluded that FERC lacks the data to back up any of its assertions or policy recommendations. This should come as no surprise to my colleagues who

will recall that I raised this very issue and related questions last year. I still want to know how many licenses have been turned down by FERC as a result of the environmental protections imposed by the resource agencies? 10,000? 1,000? 100? 10? 1? Why do utilities pay above market value to acquire these "threatened" facilities?

Rivers are a precious natural resource owned by all the American people and managed for them by the resource agencies and the states. They are not luxury swim clubs to be run by FERC for the exclusive benefit of our nation's electric utilities.

I do think there are a few things we could do on even such a short time frame that would assist the industry and have the benefit of being good public policy—if the Members of this Committee and the stakeholders are willing to accept modest changes. For example, perhaps we can make some progress in the areas of flexibility with regard to equally protective but lower cost alternatives to agency prescriptions, fixing FERC's inadequate data collection, and perhaps providing some regulatory incentives to project owners to upgrade their turbines to more fish-friendly and efficient models.

In any event, I will be happy to work with you to try to make some small changes now or tackle more complex issues in a reasonable time-frame under regular order. And, of course, I am always prepared for a vigorous debate and markup if the deadline imposed by the Republican leadership forces ill-considered Committee action.

For now, I look forward to hearing from our distinguished witnesses and yield back the balance of my time.

Mr. LARGENT [presiding]. I thank the gentleman for his statement. I will recognize myself for a brief remark, simply to say I have heard a number of my colleagues say we need to move slowly. It reminds me of the joke about the snail that crawled upon the turtle's back, and his response was, "Whee."

If we move any slower, the lights will be flickering here in Washington, like they are in California. And I will submit my entire statement for the record, and we will recognize—the next Democrat is Mr. Luther, who has returned.

Mr. LUTHER. Thank you, Mr. Chairman. I will be very brief. I want to thank you, first of all, for having the hearing. I am particularly interested in hearing the evidence and the testimony on hydropower. I think this has often been overlooked in terms of the potential that this can provide for us, and I think that as I look at the proposal, the Bush proposal—and I appreciate the fact that has mentioned hydropower. I think we have seen few details at this point, but I think that there is an opportunity here on the part of the committee to actually look at ways to encourage, not to just talk about the relicensing process and the regulatory aspects of it, but to figure out ways to truly encourage hydropower.

And so that is what I will be looking for in terms of testimony and in discussions with other committee members, and again, I want to thank you for focusing a part of the hearing on that particular source of power. Thanks.

Mr. LARGENT. I thank the gentleman and recognize, let me see, Mr. Shimkus from Illinois.

Mr. SHIMKUS. Thank you, Mr. Chairman. With apologies to Chris John and Michael Doyle and Bart Stupak, I want to say publicly, "whee," and thank you for your time as a batter mate in the congressional baseball game. It has been a pleasure for the Republican side of the House Commerce Committee to have you, and I am going to miss you next year on the mound.

Let me also mention my colleague, Mr. Boucher, and I and many other Members throughout the coal bill yesterday, that we hope will be part of the national energy debate. I have always said, many of you have heard who have sat in here, that we need a di-

versified energy portfolio, coal being one of those. But nuclear should have a strong seat at the table, along with hydro. That is why relicensing of both is very critical. That is why reviewing the Price-Anderson Act is critical to do that. We cannot continue to have all our energy eggs placed in one basket, and that is part of the national problem. Diversification is the key. This hearing is important.

I thank you, and I yield back my time.

Mr. LARGENT. I thank the gentleman. The Chair will announce the intention that we are going to continue opening statements and get to the panel. The chairman of the subcommittee is over there voting and on his way back, and so we will keep this going. In order of appearance, the next Democrat is Mr. Doyle of Pennsylvania.

Mr. DOYLE. Mr. Chairman, thank you. And I will say to my good friend, Mr. Shimkus, that I know you both have been waiting for a year to talk about the congressional baseball game, since we beat you last year. But I do want to offer my congratulations on a well-pitched——

Mr. LARGENT. Will the gentleman yield?

Mr. DOYLE. Yes, I will.

Mr. LARGENT. Just to correct the record, we beat ourselves last year.

Mr. DOYLE. As we did this year.

Mr. Chairman, thank you for providing the opportunity to discuss the role of nuclear energy and hydroelectric power in forming a comprehensive national energy policy. I appreciate the fact that our ongoing series of subcommittee hearings have been inclusive in nature. To approach the task of crafting a viable energy strategy otherwise would be self-defeating, as it would inevitably lead to the artificial elevation of one source of generation over another. Clearly, the issues involving nuclear energy and hydroelectric power demand our full attention and merit a truly collaborative effort.

As is evident in the testimony that will be presented today, nuclear energy is experiencing a wave of new interest. Much of this interest has been stimulated by concerns stemming from the California electricity crisis and the industry's success in developing safer and more cost-effective plant designs.

While nuclear energy still has its critics, and we must resolve the questions surrounding long-term waste storage, it would appear that the benefits of nuclear energy have been on a steady rise since the first generation of plants. My concern is that we must consider nuclear energy as something more than the energy flavor of the month, and provide this energy source with the support it requires to play an appropriate role in our Nation's energy portfolio.

This support includes adequate funding for DOE's Office of Nuclear Energy, as well as reauthorization of the—Price-Anderson Act. During our first subcommittee hearing, we heard about how my home State of Pennsylvania is achieving greater success with its electricity deregulation plan than other States, including California.

An aspect of Pennsylvania's success which was not sufficiently highlighted is that nuclear power supplies 37.9 percent of its power. This is significant, given that nuclear power accounts for 20

percent of our national electricity production. And given the heightened discussions over carbon dioxide emissions, it is also important to note that in just 1 year nuclear energy avoided carbon dioxide emissions in Pennsylvania of 16.1 million metric tons of carbon and 227 million metric tons since 1974. Not only should we remain mindful of the important near-term and long-term role that nuclear energy plays, but we cannot afford to be distracted from making the necessary commitments to ensuring its continued safety and longevity.

The same can be said of hydroelectric power. Hydroelectric power should continue to contribute to help meeting our energy needs, and capacity loss should be a cause for concern. Hydroelectric power is a growing interest of mine, and I am eager to learn more about the wide range of concerns that inform the debate on relicensing matters. It is my hope that some form of consensus can be reached in this critical area.

Mr. Chairman, I look forward to hearing the thoughts of our witnesses and yield back the balance of my time.

Mr. LARGENT. Thank the gentleman. The gentleman from California, Mr. Cox, recognized for an opening statement.

Mr. COX. Thank you very much, Mr. Chairman. And, of course, because we have a vote on the floor, nobody wishes to hear long opening statements. I just want to welcome our witnesses and tell you how pleased I am that we are focusing on these two aspects of our Nation's total power needs, in particular, clean, renewable energy in the form of water power.

It is a shame and a tragedy that hydropower is falling as a share of our total power generation in the United States. It is likewise very, very good that we are focusing attention on not only nuclear energy but on the licensing process, because our legislation last year, as you know, authorized a study that has determined that it is now taking a very long time to license power plants in the hydro area. It is taking nearly 4 years to get a license. That oughtn't to be the case.

The General Accounting Office has told us, as well, that the licensing process is now costlier, more complicated and difficult than it ever has been. So we have work to do in this area, and I am very, very much looking forward to learning from our witnesses ways that we can improve in these areas. Thank you, Mr. Chairman.

Mr. LARGENT. Thank the gentleman. Recognize Mr. John from Louisiana for an opening statement.

Mr. JOHN. Thank you, Mr. Chairman. I, too, want to congratulate you on a win, and I want to wish you good luck in your future endeavors. I will miss you on the golf course, but I will not miss your curve ball. So thank you very much. Where did you learn that thing since last year?

It is really a pleasure to be here today. I want to thank the chairman of the subcommittee for holding this hearing in a continued series of hearings on energy. I think the chairman of the full committee said it best—frankly, there is no more important issue in America today than energy. And it is not going away. And I think that this committee has made a commitment by the series of hear-

ings that we are going to address the problems that Americans want us to address in this area.

And this hearing today is a very important component; whether it is coal, natural gas-powered electricity generators, wind, hydro, nuclear or solar, those are the issues that we have to address. They all play an important role in the overall scheme of things. I think Mr. Shimkus said it best, that diversification is not only good in a portfolio of financial instruments, but it is good in whatever we do, from a business standpoint or other things that we do in our lives.

And I think that this hearing today is going to shed light on two very important, critical parts and components of a whole energy policy that I think we are going to debate. Hydroelectricity represents 90 percent of renewable electricity generation today.

So thank you, gentlemen, for coming. I look forward to hearing from you, and I thank the chairman for having this hearing.

Mr. BARTON. I thank the gentleman from Louisiana. I recognize the gentleman from Arizona for an opening statement.

Mr. SHADEGG. I thank the gentleman. Let me begin by strongly commending you, Mr. Chairman, for holding this hearing on the two preeminent sources of electricity generation, which are both inexhaustible and emission-free. While I will focus my remarks on hydropower, I strongly support nuclear power and believe that we must encourage its further development.

While this is not a legislative hearing on H.R. 1832, the Hydroelectric Licensing and Incentives Act, I would like to point out the importance of that legislation to this issue. H.R. 1832 will reform the licensing process to ensure that existing hydro capacity is not diminished by relicensing and will ensure that environmental concerns are fully considered.

In addition, that legislation has the potential to increase the amount of electricity generated by over 21,000 megawatts with few, if any, environmental effects. H.R. 1832 does so by encouraging the addition of new turbines to existing dams and efficiency upgrades in existing hydropower facilities. It will not result in the construction of a single new dam but ensures that better use is made of the existing dams.

The core debate over hydropower focuses on whether its environmental costs outweigh its benefits. But let us be abundantly clear about one fact: Every source of energy has costs and benefits. Traditional energy sources have costs and benefits but so do renewables. For example, the senior vice president of the Audubon Society, David Baird, called the windmill project in California a Condor quisinart in September 1999, because it was on the flight path frequented by the endangered California Condors. The fact that a windmill project in California may pose a measure of environmental harm does not mean that we can dismiss wind power as an energy source. Likewise, we cannot dismiss hydropower or nuclear or natural gas because they are not pristine.

For hydropower, the benefits are obvious: zero emissions of air pollutants. Hydropower generate electricity without emitting a single pound of pollutants. In fact, the 92,000 megawatts of electricity generated by hydropower today avoid the annual emission of 4.75 million tons of sulfur dioxide and 2 million tons of nitrous oxide by

eliminating the need to burn 345 million tons of coal. There is zero toxic waste. It is renewable in nature, and, as I pointed out with a fourth grade chart on the hydrologic cycle at the September 1999 electricity markup, water is never consumed. It is there and constantly circulates and can be used to generate electricity over and over again indefinitely.

Mr. Chairman, some of my colleagues may have some concerns about the environmental costs of hydropower, but I believe used correctly and viewed properly it can be upgraded. We can add more turbines to existing dams. We can improve the efficiency of turbines in present dams, and do so without environmental costs.

I commend you for holding this hearing and yield back the balance of my time.

Mr. BARTON. We thank the gentleman from Arizona. I want to ask—inquire how the trip from DWF to Arizona in the new car went?

Mr. SHADEGG. It went very well, Mr. Chairman. We had a nice trip.

Mr. BARTON. Where did you spend the night Friday night?

Mr. SHADEGG. In Odessa.

Mr. BARTON. Odessa?

Mr. SHADEGG. Charming Odessa.

Mr. BARTON. Odessa, Texas. How about that. Eckard County. Could have called my uncle, aunt and uncle. I have an aunt and uncle who live in Odessa.

Mr. SHADEGG. You could have saved me money. I could have stayed there.

Mr. BARTON. There you go. They have a nice home with a pool.

Mr. SHADEGG. I am sorry you didn't tell me about that.

Mr. BARTON. Well, there may be a reason I didn't tell you about that.

We have several members that had to go vote that wish to make an opening statement and have informed the Chair. We are going to take a very brief recess. I mean very brief. As soon as another member shows up to give an opening statement, we will reconvene.

So the committee is in recess, subject to the call of the Chair, which should be within the next 5 minutes.

[Brief recess.]

Mr. BARTON. The subcommittee will come to order. Are you ready—Chairman Meserve is—I think I see him coming into the room. So the Chair will recognize Mr. Markey of Massachusetts for an opening statement.

Mr. MARKEY. Thank you, Mr. Chairman. Mr. Chairman, when I was a boy, I am sure Chairman Meserve remembers this, watching channel 4 when the Mickey Mouse Club came on. Back in 1956, they used to have—Mickey was a big fan of nuclear power, and I asked my staff to go pull out what I remembered, which was this book that Walt Disney produced in 1956, "Our Friend, the Atom." Old Mickey, he was a big fan of it. And he had the German scientist, Heinz Hida—I remember he used to have Vern von Braun as well, Mickey to explain things to us about—but he explained to us how this genie, this nuclear genie was going to be coming out of the bottle. Now, it could be a very powerful and menacing giant, okay? And we just learned that in Hiroshima, but if we all worked

together, we could tame the nuclear genie, and the nuclear genie would help us—help us.

And so what Mickey did, which I remembered, was to show us how a chain reaction worked. And what they did was the put all of these mousetraps with ping pong balls down on the ground, and then if one ping pong ball hits two and then two hits four, you have something called a chain reaction, really a good thing—chain reaction. And so we would watch this, of course, in cartoon form as the scientist would explain it to us.

And then what you would get is you would be able to make wishes. And so the first wish would be you would get power from nuclear energy, really good. The second wish would be—this is really—I am so glad we got this book—you would get food and health from nuclear power. And then the third thing that you would get is peace. Nuclear meant peace.

So I watched these shows, and I believed it. We all believed it. As a matter of fact, our parents believed in it so much that we believed that by, as the book says, by the year 2000 we won't need oil and gas and coal to generate electricity. Isn't that a great vision for our country? I don't think they would like that in Texas or Pennsylvania, but that was the vision.

Now, they liked it so much, and it was a fledgling industry, a small industry. It needed to get started. It was a baby industry, and it was our friend, "The Atom." So they couldn't find any insurance for the industry. It was really hard. No one wanted to insure them, because notwithstanding what they told us, insurance industry people thought it was a very dangerous technology. So all of our parents voted for people who voted for something called the Price-Anderson Act to limit the liability of this industry. Now, the oil and the coal and the gas and the hydro industry, they wouldn't come to Congress, because they could get insurance. But they said, "It is a baby industry, and you don't understand. It is very safe. But once we grow up we won't need that subsidy any more." That was 44 years ago.

But somehow in the never-never land of Washington, DC, nuclear power never grows up. And this Price-Anderson subsidy that we put on the books has been perpetuated as a Mickey Mouse program for the last five decades. And now people say, "It is very safe. Don't worry." And yet they say, "We need a Federal subsidy." For what? Insurance, because the insurance industry, the private sector will not give us any insurance.

So it can't be safe, because we believe in the free market. We are not France; we are not Japan. They are socialist nations. Socialist nations say, "We are going to build nuclear power, and we are going to protect it in subsidies." That is socialism. We are capitalism. Capitalism doesn't have the Federal Government.

By requiring dam owners to build passage for fish, protect critical riparian habitat, adjust river flows, and provide recreational access and opportunity, we can protect and restore valuable fisheries, native species diversity, recreational amenities and natural ecosystem functions. At the same time, we can enhance economic opportunities such as recreation, tourism and ecological services. Because original licenses were issued before the enactment of modern environmental statutes and prior to our understanding of the

impacts of dams on river ecosystems, virtually none of these dams meets modern environmental standards before relicensing.

If awarded a license, utilities can monopolize a river for a half a century with little oversight and no motivation to make environmental improvements. We must take this once-in-a-lifetime chance to set conditions that require hydro operators to modernize the way they operate their dams on our rivers.

In developing the balance of authority in the Federal Power Act, Congress determined that some basic environmental protections must be afforded at every dam. Expert Federal and State resource managers established conditions based on substantial evidence. Just as there a ceiling on coal plant emissions under the Clean Air Act, there is a floor above which FERC can balance license conditions in the public interest.

Both fish passage and Federal lands protections have been part of the licensing process since the enactment of the Federal Power Act in 1920. Water quality is a responsibility delegated to the States. Section 401 of the act ensures that private hydro projects will not interfere with State standards. The Supreme Court has confirmed that these standards may be numeric or narrative and include chemical, physical and biological parameters.

State and Federal agencies have significant expertise in the relicensing area. They work in the field on a specific river as opposed to FERC staff who spend most of their time in Washington. There is little reason to believe that consolidation with FERC would either make the process faster or improve the outcomes.

I will make just a couple of observations on the 603 report. First, we agree with GAO's conclusion that until FERC does a better job collecting data on the cost and timing of its process, FERC will not be able to reach informed decisions on the need for further administrative reforms or legislative changes. This conclusion makes it difficult to rely on any of the statisticl information in the 603 report.

Second, it seems clear that FERC saw this report to eliminate shared jurisdiction with other agencies. The suggestion on page 6 of the report that Congress should, quote, "restore" the Commission's position as the sole Federal decisional authority ignores the history and structure of the Federal Power Act since 1920. The Commission has never been the sole Federal authority on hydro licenses. And, again, the entire report must be viewed in light of this agenda.

We do believe that further administrative reforms can improve the way we license hydropower dams without upsetting the existing balance of agency decisionmaking. First, to ensure the relicensing process is efficiently implemented, State and Federal agencies must have sufficient staff resources and training. For example, in the State of Alabama, licenses for 12 dams on 3 major rivers will expire by 2007. Currently, the Fish and Wildlife Service has only one staff person to cover this entire area. This situation is not unique.

Second, collaborative processes should be encouraged. Elements of FERC's alternative licencing process should be incorporated into FERC's traditional licensing process wherever possible. Third, cooperation among FERC and State and Federal resource agencies

will greatly improve the efficiency of the relicensing process. Unfortunately, FERC has been reluctant to implement a cooperative environmental analysis structure with the other agencies.

The good news is that relicensing provides significant protection to rivers at a low cost to power production. According to FERC's own report, relicensing has resulted in average per project reduction in generation of only 1.6 percent. Such few losses in relicensing over the next 10 years would result in a 0.04 percent reduction in the Nation's overall annual generation. The losses in generation are comparable with those caused by installing a scrubber on the smokestack of core 5 plant, in fact.

Being a good environmental steward is a legitimate cost of doing business. Unlike other industries, such as offshore oil development, mining or timber, hydropower licensees pay nothing for the use of public resources—our rivers. They are not required to post a bond. After 30 to 50 years, the initial capital investment in these projects is fully ammortized. The only costs left are basic operation and maintenance, the lowest of any electricity source, and environmental protection measures. Asking that these dams make some small investment in environmental quality after decades of profitable operation is a reasonable and minor request. Paying for these changes continues to leave hydropower as the cheapest source of electricity nationwide.

subsidizing insurance policies for safe and powerful industries.

Now, here is the interesting end of the story. No new nuclear power plants have been successfully since 1973. Why? Because it is more expensive than natural gas. It costs about $1,700 per kilowatt hour of power generated to build a nuclear plant, while the gas plant costs as little as $420 per kilowatt hour. And if capital costs are included, nuclear power costs 6 cents a kilowatt hour compared to 4 cents a kilowatt hour for gas or coal. That is 50 percent higher. That is the free market. Adam Smith is lying in his grave smiling at all of us. Go with it. It is the free market. It is time for our friend, "The Atom" to grow up, move into the free market. And if we can't survive, we move on. But if it can't survive, and we cut solar and we cut wind and we cut energy conservation, which is what the Bush energy plan did, then it is hypocrisy on stilts. We help the powerful industry of the people say it is safe and yet we don't, at the same time, deal with the reality.

And, finally, no answer to nuclear waste except the industry says, "I can't believe the Federal Government hasn't solved the nuclear waste problem yet." The Government. Again, where is the free market. They are the ones who told us it was safe and they could solve all these problems. That is why our parents voted for it. Now they sue us because we haven't solved their problem.

And, finally, I was the chairman of this subcommittee in 1985 and 1986. Mr. Dingell and I passed a bill on hydro relicensing. All we did in 1986, when I was chairman of the subcommittee, Mr. Dingell was chairman of the full committee—was to pass a bill which said we are going to upgrade from 1936 to 1986 the new values of the environment, of fisheries, of other new values that really weren't therein 1936.

Now, I know that to a larger sense, the Bush energy bill is a Trojan horse meant to make it possible for the energy industry officials

to remove environmental and health care laws which they always opposed. But I will tell you that the country has come even further in the last 15 years, from 1986, and the polling in the New York Times last week makes it clear that on every one of these issues the public wants us to ensure that we do maintain environmental and health safeguards.

So I thank you, Mr. Chairman, for the opportunity of testifying. I think that this is, without question, an area that deserves much closer scrutiny than we are going to be able to give it here in a half a day for this and a half a day for hydro. Back in 1986, we had 10 hearings just on hydro alone before we passed that bill. I think a half a day of hearing on such an important subject really doesn't do full justice to the importance of the subject. Thank you, Mr. Chairman.

Mr. BARTON. We thank the gentleman from Massachusetts. Recognize the gentlelady from California for an opening statement.

Ms. BONO. Thank you, Mr. Chairman. I will pass.

Mr. BARTON. We recognize the gentleman from Ohio, Mr. Sawyer, for an opening statement.

Mr. SAWYER. Thank you, Mr. Chairman. I will try to be brief. Nuclear and hydroelectric power provide together some 27 percent of the electricity that we consume without polluting the air. They are important elements in a diversified energy policy. Still, nuclear and hydroelectric power both come with substantial environmental costs and risks, and it is the balance of those benefits and burdens that we weigh today.

Just three observations. The licensing of hydroelectric dams now involves extensive coordination with State and Federal authorities. The process of coordination is complex but so are the issues that have to be addressed. Second, the Price-Anderson Act was critical to the establishment of a functioning nuclear industry. A lot has changed since that time. And perhaps the way in which we approach Price-Anderson should as well. It is not something that I think can be done quickly. Finally, let me say that with regard to nuclear safety, the protocols of transportation, siting of repositories and the technology of its storage continue to remain demanding technical problems. I hope that we can devote appropriate attention to those.

Finally, Mr. Chairman, I am going to yield to a temptation that I swore I was never going to do just on the basis of my friend's example. I know how badly it can be done. But this morning I just can't resist, and since we don't have any television cameras here today, let me conclude by saying, "Who's the leader of the club that is made for you and I, E-D-D-I-E M-A-R-K-E-Y."

Thank you so much.

Mr. BARTON. That is actually not too bad.

Mr. SAWYER. It was made for 7-year-olds to be able to sing.

Mr. BARTON. The gentleman from Ohio, Mr. Strickland, is recognized. Did Mr. Largent have an opportunity to make an opening statement. Okay, the gentleman from Ohio, Mr. Strickland, is recognized for an opening statement.

Mr. STRICKLAND. Thank you, Mr. Chairman, and I will try to be brief. I am glad we are holding this hearing today, but I am disappointed that no DOE witness testifying to address questions

about the Department's responsibilities under Price-Anderson Act is with us. I would have been particularly interested in asking questions of the DOE Office of Enforcement, but I was also interested in asking questions of the Department's counsel, and I would like to ask for unanimous consent to submit questions for the record, if I may.

Mr. BARTON. Without objection.

Mr. STRICKLAND. Still, I think this is an important hearing today on nuclear energy and hydroelectric relicensing, and I look forward to the testimony of our witnesses. This committee has overseen an aspect of Price-Anderson that does not get enough attention, in my judgment: Provisions that authorize the Energy Department to issue civil penalties and fines against contractors who violate nuclear safety rules.

In oversight hearings before this committee last year, I recall that we learned that the Department of Energy has only five or six investigators to police nuclear safety violations throughout the DOE complex. This enforcement authority is very important to protecting the workers and communities around nuclear facilities. It is important for taxpayers as well, because DOE contractors' liability is limited under the Price-Anderson Act. Now, I will say now that I support the reauthorization of Price-Anderson, but the question for me is whether nuclear safety oversight within the DOE is adequate to protect workers, communities and taxpayers.

It is my understanding that DOE's Office of Enforcement, which is responsible for the entire DOE complex relies heavily on contractor self-reporting. In fact, I am told by DOE that the Price-Anderson coordinator for the Portsmouth, Ohio site is located in Oak Ridge, Tennessee. By comparison, it is also my understanding that there is at least one full-time, onsite resident inspector at major NRC licensed facilities, which are also indemnified under Price-Anderson. I would like to see the reauthorization of Price-Anderson proceed with a stronger health and safety enforcement program at DOE. I have heard from too many workers at Portsmouth, Ohio raising questions about the process of reporting safety concerns, and I am hopeful that as we review the Price-Anderson Act we can strengthen the DOE program.

And, finally, I am looking forward to the testimony of Mr. Meserve. I see in his second paragraph of his opening statement he says, "The Commission does not have a promotional role. The agency's role," and I emphasize the singular use of that word "role," "is to ensure the safe application of nuclear technology if society elects to pursue the nuclear energy option." I believe that this Congress gave the NRC an additional responsibility to ensure a reliable and domestic supply of nuclear fuel for our nuclear power plants. And I would like to hear from Mr. Meserve, at my time of questioning, why he considers their role to be singular rather than multiple, as I believe this Congress intended.

I yield back my time.

Mr. BARTON. Thank the gentleman from Ohio. I recognize the gentleman from Wisconsin, Mr. Barrett, for an opening statement.

Mr. BARRETT. Let us roll, Mr. Chairman; I will yield back my time.

Mr. BARTON. Seeing no other members present who wish to make an opening statement, the Chair would ask unanimous consent that all members not present, members of the subcommittee, have an opportunity to put their written statement in the record. Hearing no objection, so ordered.

We want to welcome our first panel. We have two distinguished representative of the executive branch. We have the Chairman of the Nuclear Regulatory Commission, the Honorable Richard Meserve, and we appreciate your attendance. We also have the Director, the Office of Nuclear Energy, Science and Technology at the United States Department of Energy, Dr. William Magwood, who is the Director, and we welcome you.

Your statements are in the record in their entirety. We are going to welcome the Chairman of the NRC to elaborate for 7 minutes. Then we will let Dr. Magwood speak for 7 minutes. Then we will have some questions.

STATEMENTS OF RICHARD A. MESERVE, CHAIRMAN, U.S. NUCLEAR REGULATORY COMMISSION; AND WILLIAM D. MAGWOOD, DIRECTOR, OFFICE OF NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY, U.S. DEPARTMENT OF ENERGY

Mr. MESERVE. Mr. Chairman, members of the subcommittee, I am pleased to present testimony on behalf of the U.S. Nuclear Regulatory Commission.

Mr. BARTON. Put the microphone, Doctor, very close to you, because it needs to be as close as possible.

Mr. MESERVE. I am pleased to present testimony on behalf of the U.S. Nuclear Regulatory Commission regarding the outlook for the construction of new nuclear plants and issues related to the reauthorization of the Price-Anderson Act. I have submitted a longer statement for the record, and let me make just a brief oral statement.

As the subcommittee knows, the Commission does not have a promotional role. The agency's function is to ensure the safe application of nuclear technology and materials. The Commission recognizes, however, that its regulatory system should not establish inappropriate impediments to the application of nuclear technology.

Currently, there are 104 nuclear power plants licensed by the Commission to operate in the United States in 31 different States. As a group, the plants are operating at high levels of safety and reliability and have produced approximately 20 percent of our Nation's electricity for the past several years.

Serious industry interest in new construction of nuclear power plants in the U.S. has only recently emerged. The Commission has already certified three new reactor designs and is conducting preliminary reviews associated with other new designs, designs which may provide enhanced benefits. In addition, licensees have indicated to the NRC that applications for early site permits could be submitted in the near future. These permits would allow pre-certification of sites for possible construction of nuclear power plants.

To ensure that Commission staff is prepared to evaluate any applications to introduce these advanced nuclear reactors, the Commission has directed the staff to assess the technical, licensing and inspection capabilities that would be necessary to review an appli-

cation for an early site permit, a license application or construction permit for a new reactor unit. Moreover, the Commission will examine its regulations relating to license applications, such as those found in 10 CFR Parts 50 and 52, to determine whether any enhancements are necessary.

In addition, in order to confirm the safety of new reactor designs and technology, a strong nuclear research program should be maintained. A comprehensive evaluation of the Commission's research activities has been completed and with the benefit of these insights the Commission expects to undertake measures to strengthen our research program.

Also, the NRC has identified areas where new legislation would be helpful to eliminate artificial restrictions and reduce uncertainty in the licensing process. I would note that these matters are included in the legislative proposals that the NRC recently provided to this subcommittee.

Turning to the Price-Anderson Act, the Commission strongly and unanimously recommends the act's reauthorization. The act provides assurance that if an improbable accident should occur, means are provided to compensate affected members of the public. Additionally, if Congress intends that nuclear power remain a part of the Nation's energy mix, this option should not be precluded by the inability of nuclear plant licensees to purchase adequate sums of insurance commercially.

The Commission has previously recommended the doubling of the ceiling on the annual retrospective premium, from $10 million to $20 million per year, per accident, based on the then likely scenario that a number of reactors would permanently shut down. In light of the heightened interest in extending the operating life for most of the currently operating power reactors and the emerging interest by some power companies and the possible submission of applications for new reactors, the Commission does not believe that there is now justification for increasing the maximum annual retrospective premium above the current $10 million level.

Thank you, Mr. Chairman. I would be pleased to answer any questions that you or other members of the subcommittee may have.

[The prepared statement of Richard A. Meserve follows:]

PREPARED STATEMENT OF RICHARD A. MESERVE, CHAIRMAN, U.S. NUCLEAR REGULATORY COMMISSION

INTRODUCTION

Mr. Chairman, members of the Subcommittee, it is a pleasure to appear before you today.

As you know, the NRC's mission is to ensure the adequate protection of public health and safety, to promote the common defense and security, and to protect the environment in the application of nuclear technology for civilian use. The Commission does not have a promotional role—rather, the agency seeks to ensure the safe application of nuclear technology and materials.

The Commission's highest priority is to fulfill its fundamental mission of ensuring adequate protection of public health and safety. The Commission also recognizes, however, that its regulatory system should not establish inappropriate impediments to the application of nuclear technology and materials. Many of the Commission's initiatives over the past several years have sought to maintain or enhance safety while simultaneously improving the efficiency and effectiveness of our regulatory system. We believe the Commission's most recent legislative proposals would enhance safety and improve our regulatory system even further and are pleased to see

that many of our proposals have been incorporated into the bills before this Congress. The Commission also recognizes that its decisions and actions as a regulator influence the public's perception of the NRC and ultimately the public's perception of the safety of nuclear technology. For this reason, the Commission's primary performance goals also include increasing public confidence.

BACKGROUND

Currently there are 104 nuclear power plants licensed by the Commission to operate in the United States in 31 different states. As a group, they are operating at high levels of safety and reliability. (See Charts on Attachments 1 and 2.)

These plants have produced approximately 20 percent of our Nation's electricity for the past several years and are operated by about 40 different companies. In 2000, these nuclear power plants produced a record 755 thousand gigawatt-hours of electricity. (See Graph on Attachment 3.)

Improved Reactor Licensee Efficiencies (Increased Capacity Factors)

The Nation's nuclear electricity generators have worked over the past 10 years to improve nuclear power plant performance, reliability, and efficiency. According to the Nuclear Energy Institute, the improved performance of the U.S. nuclear power plants since 1990 is equivalent to placing 23 new 1000 MWe power plants on line. The average capacity factor for U.S. light water reactors was 88 percent in 2000, up from 63 percent in 1989.[1] (See Table on Attachment 3.) The Commission has focused on ensuring that safety is not compromised as a result of these industry efforts. The Commission seeks to carry out its regulatory responsibilities in an effective and efficient manner so as not to impede industry initiatives inappropriately.

Electric Industry Restructuring

As you are aware, the nuclear industry is undergoing a period of remarkable change. The industry is in a period of transition in several dimensions, probably experiencing more rapid change than in any other period in the history of civilian nuclear power. As economic deregulation of the electric power industry has proceeded, the Commission has seen significant restructuring among its licensees and the start of the consolidation of nuclear generating capacity among a smaller group of operating companies. This change is due, in part, to an industry that has achieved gains in both economic and safety performance over the past decade and thus is able to take advantage of the opportunities presented by industry restructuring.

PRICE-ANDERSON ACT RENEWAL

Legislation will be needed to extend the Price-Anderson Act. The Act, which expires on August 1, 2002, establishes a framework that provides assurance that adequate funds are available in the event of a nuclear accident and sets out the process for consideration of nuclear claims. Without the framework provided by the Act, private-sector participation in nuclear power would be discouraged by the risk of large liabilities.

I am here to deliver the strong and unanimous recommendation of the Commission that the Price-Anderson Act be renewed with only minor modifications. But I would like to preface my statement of that position with the reminder that the Commission's primary concern is public health and safety. Our mission is to ensure the safe use of nuclear power. We can look back on a successful history of safe operation and intend to exercise vigilance to maintain or improve on this record of safety. Nonetheless, it remains important to assure that if a highly improbable accident should occur, the means are provided to care for the affected members of the public. It is also important, if the Congress intends that nuclear power remain a part of the Nation's energy mix, that this option is not precluded by the inability of nuclear plant licensees to purchase adequate amounts of commercial insurance.

As you know, Congress first enacted the Price-Anderson Act in 1957, nearly a half century ago. Its twin goals were then, as now:

(1) to ensure that adequate funds would be available to the public to satisfy liability claims in a catastrophic nuclear accident; and

(2) to permit private sector participation in nuclear energy by removing the threat of potentially enormous liability in the event of such an accident.

On original passage the Congress provided a term during which the Commission could extend Price-Anderson coverage to new licensees and facilities. When that

[1] Capacity factor is the ratio of electricity generated, for the period of time considered, to the amount of energy that could have been generated at continuous full-power operation during the same period.

term expired, the Congress then, and repeatedly since, has decided that the Nation would be served by extending the Price-Anderson Act so that new coverage would be available for newly licensed reactors. This action preserved the option of private sector nuclear power and assured protection of the public. At this point, in order to avoid confusion, I should note that Price-Anderson coverage for NRC licensees is granted for the lifetime activities of the covered facility and does not "expire" in 2002. Thus, in any event, Price-Anderson coverage with respect to already licensed nuclear power reactors will continue and will afford prompt and reasonable compensation for any liability claims resulting from an accident at those facilities.

While Congress has amended the Price-Anderson Act from time to time, it has done so cautiously so as to avoid upsetting the delicate balance of obligations between operators of nuclear facilities and the United States government as representative of the people.

Perhaps the most significant amendments to date were those that effectively removed the United States government from its obligation to indemnify any reactor up to a half billion dollars and that placed the burden on the nuclear power industry. Congress achieved this by mandating in 1975 that each reactor greater than 100 MWe, essentially every reactor providing power commercially, contribute $5 million to a retrospective premium pool if and only if there were damages from a nuclear incident that exceeded the maximum commercial insurance available. The limit of liability was then $560 million. Government indemnification was phased out in 1982 when the potential pool and available insurance reached that sum.

In 1988, Congress increased the potential obligation of each reactor in the event of a single accident at any reactor to $63 million (to be adjusted for inflation). The maximum liability insurance available is now $200 million. When that insurance is exhausted each reactor licensee must pay into the pool up to $83.9 million, as currently adjusted for inflation, if needed to cover damages in excess of the sum covered by insurance. The $83.9 million is payable in annual installments not to exceed $10 million. Today, the commercial insurance and the reactor pool together would make available over $9 billion to cover any personal or property harm to the public caused by an accident.

In 1998, as mandated by Congress, the Nuclear Regulatory Commission submitted to the Congress its report on the Price-Anderson system. The report included a concise history and overview of the Price-Anderson Act and its amendments as well as an update on developments and events pertaining to nuclear insurance and indemnity in the last decade. Congress had also required the NRC to address various topics that relate to and reflect on the need for continuation or modification of the Act: the condition of the nuclear industry, the state of knowledge of nuclear safety, and the availability of private insurance.

After considering pertinent information, the Commission considered what its recommendations should be. It concluded then that it should recommend that Congress renew the Price-Anderson Act because it provides a valuable public benefit by establishing a system for the prompt and equitable settlement of public liability claims resulting from a nuclear accident. That, as I said at the outset, remains today the strongly held position of the Commission.

Having noted that substantial changes in the nuclear power industry had begun and could continue, the Commission believed it would be prudent to recommend renewal for only ten years rather than the 15-year period that had been adopted in the last reauthorization so that any significant evolution of the industry could be considered when the effects of ongoing changes would be clearer. Notwithstanding that view, the Commission recommended that the Congress consider amending the Act to increase the maximum *annual* retrospective premium *installment* that could be assessed each holder of a commercial power reactor license in the event of a nuclear accident.

The NRC suggested that consideration be given to doubling the ceiling on the annual installment from the current sum of $10 million to $20 million per year per accident. The total allowable retrospective premium per reactor per accident was to remain unchanged at the statutory "$63 million" adjusted for inflation. (It is now $83.9 million as so adjusted). The Commission recommended consideration of an increase to $20 million because it then appeared likely that in the coming decade a number of reactors would permanently shut down. The effect of these shutdowns would have been to reduce the number of contributors to the reactor retrospective pool. Fewer contributors would, in turn, reduce the funds that, in the event of a nuclear accident, would become available each year to compensate members of the public for personal or property damage caused by an accident. Increasing the maximum annual contribution available from each reactor licensee would provide continuing assurance of "up front" money to assist the public with prompt compensa-

tion until Congress could consider whether to enact additional legislation providing further relief, should it be needed.

Recent events have led the Commission to review its 1998 recommendations and to reevaluate its recommendation that Congress consider increasing the annual installment to $20 million. The outlook for the future of nuclear power has changed from pessimistic in 1998 to more optimistic in 2001. There is now a heightened interest in extending the operating life for most, if not all, of the 104 currently licensed power reactors, and some power companies are now examining whether they wish to submit applications for new reactors or complete construction of reactors that had been deferred. As a result, the Commission does not believe that there is now justification for raising the maximum annual retroactive premium above the current $10 million level.

INITIATIVES IN THE AREA OF CURRENT REACTOR AND MATERIALS REGULATION

Reactor License Transfers

One of the more immediate results of the economic deregulation of the electric power industry has been the development of a market for nuclear power plants as capital assets. As a result, the Commission has seen a significant increase in the number of requests for approval of license transfers. These requests have increased from a historical average of about two or three per year, to 20-25 in the past two years.

The Commission seeks to ensure that our reviews of license transfer applications, which focus on adequate protection of public health and safety, are conducted efficiently. These reviews sometimes require a significant expenditure of staff resources to ensure a high quality and timely result. Our legislative proposal to eliminate foreign ownership review could help to further streamline the process, while retaining the ability to address any associated issues that pertain to common defense and security. To date, the Commission believes that it has been timely in these transfers. For example, in CY 2000, the staff reviewed and approved transfers in periods ranging from four to eight months, depending on the complexity of the applications. The Commission will strive to continue to perform at this level of proficiency.

Reactor License Renewals

Another result of the new economic conditions is an increasing interest in license renewal that would allow plants to operate beyond the original 40-year term. That maximum original operating term, which for many plants was established in the Atomic Energy Act (AEA), did not reflect a limitation that was determined by engineering or scientific considerations, but rather was based on financial and antitrust concerns. The Commission now has the technical bases and experience on which to make judgments about the potential useful life and safe operation of facilities and is addressing the question of extensions beyond the original 40-year term.

The focus of the Commission's review of license renewal applications is on maintaining plant safety, with the primary concern directed at the effects of aging on important systems, structures, and components. Applicants must demonstrate that they have identified and can manage the effects of aging so as to maintain an acceptable level of safety during the period of extended operation.

The Commission has now renewed the licenses of plants at three sites for an additional 20 years: Calvert Cliffs in Maryland, Oconee in South Carolina, and Arkansas Nuclear 1 in Arkansas, comprising a total of six units. The thorough reviews of these applications were completed ahead of schedule, which is indicative of the care exercised by licensees in the preparation of the applications and the planning and dedication of the Commission staff. Applications for units from two additional sites—Hatch in Georgia and Turkey Point in Florida—are currently under review. Also, we recently received application from four additional sites; Surry and North Anna in Virginia, Catawba in South Carolina, and McGuire in North Carolina, comprising a total of eight units. As indicated by our licensees, many more applications for renewal are anticipated in the coming years.

Although the Commission has met or exceeded the projected schedules for the first reviews, it seeks to have the renewal process be as effective and efficient as possible. The extent to which the Commission is able to sustain or improve on our performance depends on the rate at which applications are actually received, the quality of the applications, and the staff resources available to complete the review effort. The Commission recognizes the importance of license renewal and is committed to providing high-priority attention to this effort. As you know, the Commission encourages early notification by licensees of their intent to submit license renewal applications in order to allow adequate planning of demands on staff re-

sources. The Commission is committed to maintaining the quality of its safety reviews.

Reactor Plant Power Uprates

In recent years, the Commission has approved numerous license amendments that permit licensees to make relatively small power increases or uprates. Typically, these increases have been approximately two percent to seven percent. These uprates, in the aggregate, resulted in adding approximately 2000 MWe or the equivalent of two new 1000 MWe power plants.

The NRC is now reviewing six license amendment requests for larger power uprates. These requests are for Boiling Water Reactors (BWR's) and are for uprates of 15 percent to 20 percent. (There are two primary designs for operating light water reactors: Boiling Water Reactors and Pressurized Water Reactors.) While the staff has not received requests for additional uprates beyond these six, some estimates indicate that as many as 22 BWR's may request uprates in the 15 percent to 20 percent range. These uprates, if allowed, could add approximately 3000 to 4500 MWe to the grid.

Approvals for uprates are granted only after a thorough evaluation by the NRC staff to ensure safe operation of the plants at the higher power. Plant changes and modifications are necessary to support a large power uprate, and thus require significant financial investment by the licensee. While the NRC does not know the number of uprate requests that will be received, the staff is evaluating ways to streamline the review process. We would note that power uprates of five percent or more are considered by the NRC staff to be substantial and to require significant technical review and analysis. As with license renewals, the Commission encourages early notification by licensees, in advance of their applications for uprates, in order to allow adequate planning of demands on staff resources.

High-Level Waste Storage/Disposal (Spent Fuel Storage)

In the past several years, the Commission has responded to numerous requests to approve spent fuel cask designs and independent spent fuel storage installations for onsite dry storage of spent fuel. These actions have provided an interim approach pending implementation of a program for the long-term disposition of spent fuel. The ability of the Commission to review and approve these requests has provided the needed additional onsite storage of spent nuclear fuel, thereby avoiding plant shutdowns as spent fuel pools reach their capacity. The Commission anticipates that the current lack of a final disposal site will result in a large increase in on-site dry storage capacity during this decade.

The NRC staff is currently reviewing an application for an Independent Spent Fuel Storage Installation on the reservation of the Skull Valley Band of Goshute Indians in Utah. This application is currently subject to an ongoing adjudicatory hearing before an Atomic Safety and Licensing Board.

We continue to prepare for a potential license application from DOE for a proposed high-level waste geologic repository at Yucca Mountain. These efforts include rulemaking to codify recently set radiation standards for the proposed repository and periodic technical exchange meetings between NRC and DOE staff which are open to the public.

We are also revising our requirements for the transportation of spent fuel and radioactive material to make them more risk-informed and consistent with international standards. We are doing this in partnership with the Department of Transportation, which will simultaneously revise its own rule in this area.

Risk-Informing the Commission's Regulatory Framework

The Commission also is in a period of dynamic change as the agency moves from a prescriptive, deterministic approach toward a more risk-informed and performance-based regulatory paradigm. Improved probabilistic risk assessment techniques combined with more than four decades of accumulated experience with operating nuclear power reactors has led the Commission to recognize that some regulations may not achieve their intended safety purpose and may not be necessary to provide adequate protection of public health and safety. Where that is the case, the Commission has determined it should revise or eliminate the requirements. On the other hand, the Commission is prepared to strengthen our regulatory system where risk considerations reveal the need.

Perhaps the most visible aspect of the Commission's efforts to risk-inform its regulatory framework is the new reactor oversight process. The process was initiated on a pilot basis in 1999 and fully implemented in April 2000. The new process was developed to focus inspection effort on those areas involving greater risk to the plant and thus to workers and the public, while simultaneously providing a more objective and transparent process. Although the Commission continues to work with its

stakeholders to assess the effectiveness of the revised oversight process, the feedback received from industry and the public is favorable.

FUTURE ACTIVITIES

Scheduling and Organizational Assumptions Associated with New Reactor Designs

While improved performance of operating nuclear power plants has resulted in significant increases in electrical output, significant increased demands for electricity will need to be addressed by construction of new generating capacity of some type. Serious industry interest in new construction of nuclear power plants in the U.S. has only recently emerged. As you know, the Commission has already certified three new reactor designs pursuant to 10 CFR Part 52. These designs include General Electric's Advanced Boiling Water Reactor, Westinghouse's AP-600 and Combustion Engineering's System 80+ (now owned by Westinghouse). Because the Commission has certified these designs, an application for a combined construction permit and operating license under Part 52 may reference one of these approved designs. Licensees have also indicated to the NRC that applications for early site permits could be submitted in the near future. These permits would allow pre-certification of sites for possible construction of nuclear power plants.

In addition to the three already certified advanced reactor designs, there are new nuclear power plant technologies, such as the Pebble Bed Modular Reactor, which some believe can provide enhanced safety, improved efficiency, and lower costs, as well as other benefits. To ensure that the NRC staff is prepared to evaluate any applications to build these advanced nuclear reactors, the Commission recently directed the staff to assess the technical, licensing, and inspection capabilities that would be necessary to review an application for an early site permit, a license application, or construction permit for a new reactor unit. This will include the capability to review the designs for Generation III+ or Generation IV light water reactors, including the Westinghouse AP-1000, the Pebble Bed Modular Reactor, General Atomics' Gas Turbine Modular Helium Reactor, and Westinghouse's International Reactor Innovative and Secure (IRIS). In addition to assessing its capability to review the new designs, the Commission will also examine its regulations relating to license applications, such as 10 CFR Parts 50 and 52, in order to identify whether any enhancements are necessary. We also recently established the Future Licensing Project Organization in order to prepare for and manage future reactor and site licensing applications.

In order to confirm the safety of new reactor designs and technology, the Commission believes that a strong nuclear research program should be maintained. A comprehensive evaluation of the Commission's research program has been completed with assistance from a group of outside experts and from the Advisory Committee on Reactor Safeguards. With the benefit of these insights, the Commission expects to undertake measures to strengthen our research program.

Human Capital

Linked to these technical and regulatory assessments, the Commission is reviewing its human capital to ensure that the appropriate professional staff are available for the Commission to fulfill its traditional safety mission, as well as any new regulatory responsibilities in the area of licensing new reactor designs.

In some mission critical offices within the Commission, nearly 25 percent of the staff are eligible to retire today. As with many Federal agencies, it is becoming increasingly difficult for the Commission to hire personnel with the knowledge, skills, and abilities to conduct the safety reviews, licensing, research, and oversight actions that are essential to our safety mission. Moreover, the number of individuals with the technical skills critical to the achievement of the Commission's safety mission is rapidly declining in the Nation, and the educational system is not replacing them. The NRC staff has taken initial steps to address this situation, and as a result, is now systematically seeking to identify future staffing needs and to develop strategies to address the gaps. It is apparent, however, that the maintenance of a technically competent staff will require substantial effort for an extended time. (The various energy bills properly give attention to such matters.)

Budget

The NRC has submitted a proposed bill for authorization of appropriations for Fiscal Year 2002. We respectfully request the Committee's support for our budget request. However, as I mentioned earlier, serious industry interest in new construction of nuclear power plants has only recently emerged. Therefore, our budget proposal now before Congress does not include resources to prepare for this initiative.

LEGISLATIVE PROPOSALS

The Commission has identified in its legislative proposals areas where new legislation would be helpful to eliminate artificial restrictions and to reduce the uncertainty in the licensing process. These changes would maintain safety while increasing flexibility in decision-making. Although those changes would have little or no immediate impact on the Nation's electrical supply, they would help establish the context for consideration of nuclear power by the private sector without any compromise of public health and safety or protection of the environment.

Commission antitrust reviews of new reactor licenses could be eliminated. As a result of the growth of Federal antitrust law since the passage of the AEA, the Commission's antitrust reviews are redundant of the reviews of other agencies. The requirement for Commission review of such matters, which are distant from the Commission's central expertise, should be eliminated.

Elimination of the ban on foreign ownership of U.S. nuclear plants would be an enhancement since many of the entities that are involved in electrical generation have foreign participants, thereby making the ban on foreign ownership increasingly problematic. The Commission has authority to deny a license that would be inimical to the common defense and security, and thus an outright ban on all foreign ownership is unnecessary.

With the strong Congressional interest in examining energy policy, the Commission is optimistic that there will be a legislative vehicle for making these changes and thereby for updating the AEA. Indeed, I would note that these matters are included in the legislative proposals that NRC recently provided to this Committee.

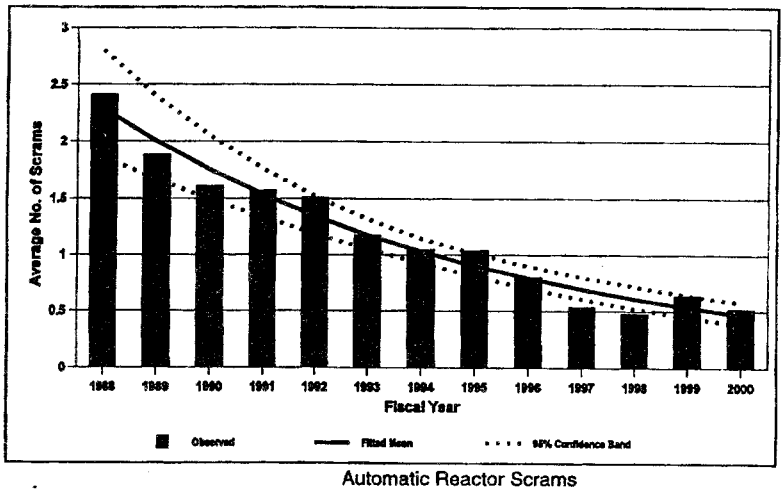
SUMMARY

The Commission has long been, and will continue to be, active in concentrating its staffs efforts to ensure the adequate protection of public health and safety, to promote the common defense and security, and to protect the environment in the application of nuclear technology and materials for civilian use. Within the bounds of those statutory mandates, however, the Commission is mindful of the need: (1) to reduce unnecessary burdens, so as not to inappropriately inhibit any renewed interest in nuclear power; (2) to maintain open communications with all of its stakeholders, in order to seek to ensure the full, fair, and timely consideration of issues that are brought to our attention; and (3) to continue to encourage its highly qualified staff to strive for increased efficiency and effectiveness, both internally and in our dealings with all of the Commission's stakeholders.

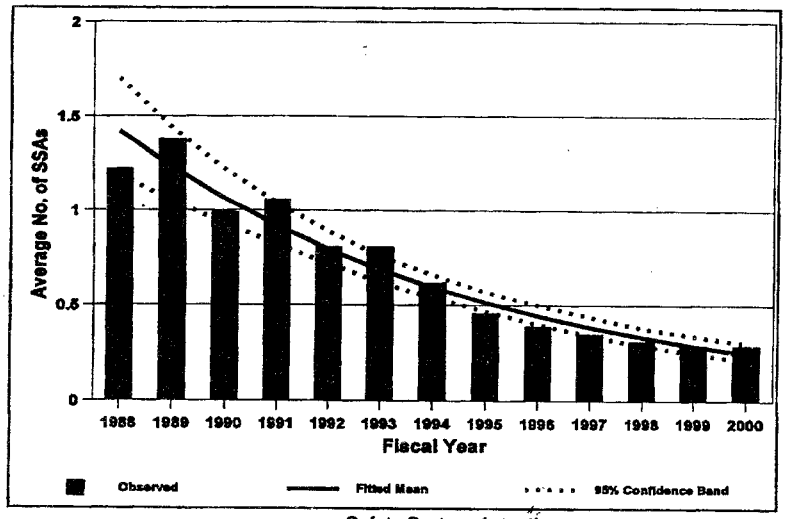
Thank you Mr. Chairman, I welcome your comments and questions.

Attachment 1

NRC Performance Indicators; Annual Industry Averages, 1988-2000

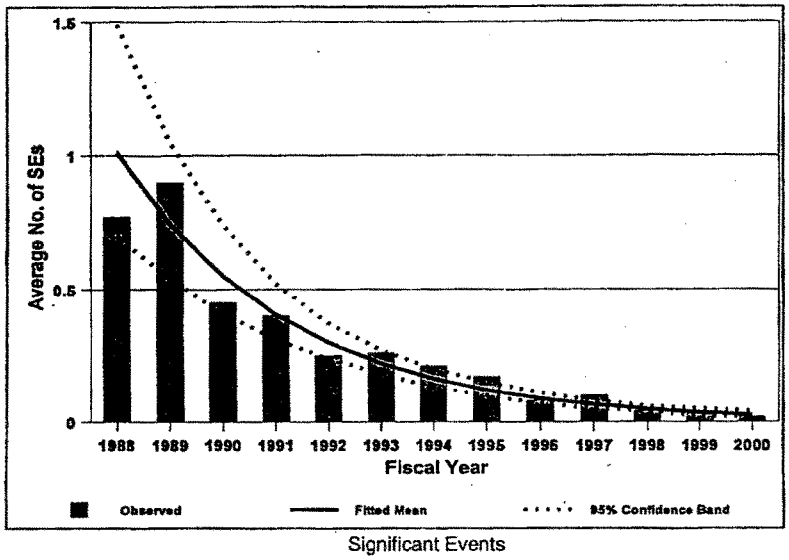


Automatic Reactor Scrams

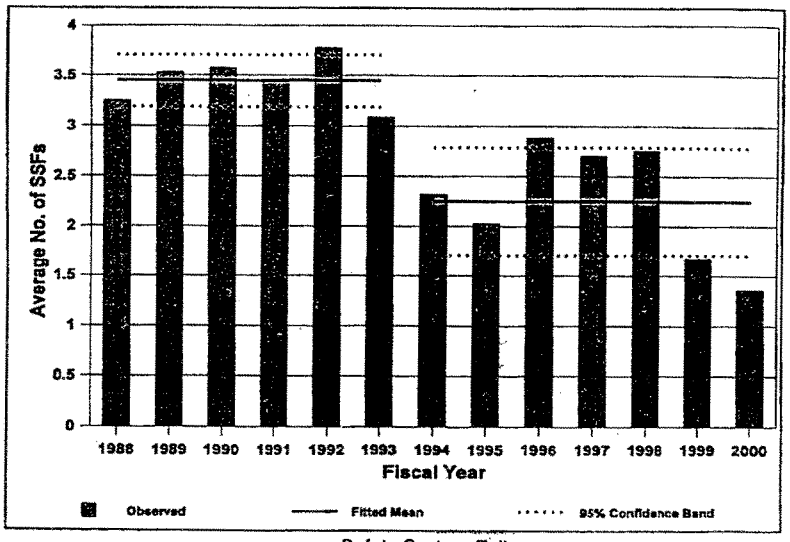


Safety System Actuations

Attachment 2



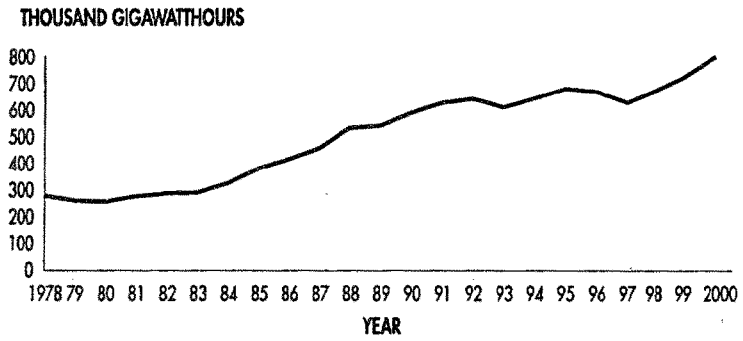
Significant Events



Safety System Failures

Attachment 3

Net Generation of U.S. Nuclear Electricity, 1978–2000



U.S. Commercial Nuclear Power Reactor Average Capacity Factor

Year	Number of Reactors Licensed to Operate	Average Annual Capacity Factor	Percent of Total U.S.
1989	109	63	19.0
1990	111	68	20.5
1991	111	71	21.7
1992	110	71	22.2
1993	109	73	21.2
1994	109	75	22.1
1995	109	79	22.5
1996	110	77	21.9
1997	104	74	20.1
1998	104	78	22.6
1999	104	86	22.9
2000	104	88	23.4

Mr. BARTON. We thank you, Doctor, and appreciate your attendance. We now would like to hear from Dr. Magwood of DOE.

STATEMENT OF WILLIAM D. MAGWOOD

Mr. MAGWOOD. Thank you, Mr. Chairman. I am Bill Magwood. I am Director of the DOE Office of Nuclear Energy, Science and Technology. It is a great pleasure to appear before this subcommittee today. And I would like to echo the comments of some of the members of the subcommittee in recognizing your efforts in pushing these issues forward.

I believe that looking at both hydro and nuclear together, there were many people wondering why those two were important issues as a hearing. But one of the members did also point out that together they are almost one-third of our electricity supply, and it is one-third of our electricity supply that is generating electricity reli-

ably and economically without emitting greenhouse gases or any other pollutants.

A few years ago, I was on the Hill talking to many Members of Congress and many staffers about nuclear research and nuclear power, and I was told almost unanimously that, "Well, nuclear power is not going to survive restructuring of electric utility industry; nuclear power is too expensive; we don't have a solution for waste, so, there is no point in worrying about nuclear power anymore." It is gratifying to be up here a few years later and to hear the story has entirely changed.

With the new administration, a new vice president, we have seen senior officials in the administration here and on national television saying very clearly that the United States should build new nuclear power plants. The new national energy policy states very clearly that nuclear power needs to be a serious option and that we need to pursue reauthorization of Price-Anderson as part of that, as well as a range of other licensing activities and other research activities. Clearly, the Department fully supports that.

We believe that nuclear does have a bright future in the United States, and I would say that over the last year, I have had conversations with senior officials in the utility industry who are looking very closely at the economics, and they are capitalists, Mr. Markey. They are looking at the numbers, and they are saying, "Yes, we think that the business case is getting closer and closer all the time, especially as electricity prices increase nationwide. We don't expect that we are going to see nuclear power plants just because the government says it is time to build nuclear power, but we are going to see nuclear power plants, because industry has made a judgment that it is time for nuclear to come back."

There are things the government does have to do, and I have already mentioned reauthorization of Price-Anderson, which we support. I would echo something that Mr. Dingell mentioned, which is that there are some issues such as the issue of how to provide coverage to small reactors versus large reactors that probably needs to be considered. It is a very important issue for new technology, some of which I think you will hear about later today from other witnesses.

But the government also does need to deal with the nuclear waste problem. I think it is important to always point out that utility ratepayers have been paying the freight for the nuclear waste program at the Department of Energy. They have paid billions of dollars into the Nuclear Waste Fund, and I think that the progress that we are making now, which has come with great difficulty and probably a lot longer than anyone thought when the Nuclear Waste Policy Act was first passed, is important progress. We are hoping that late this year we will be in the position to issue a site suitability report.

Finally, I think that it is important to recognize that we are not just talking about current reactors and relicensing, as important as that is. We are also talking about future reactors that can be built later in this decade. We have assembled a panel of experts, through our Nuclear Energy Research Advisory Committee—I think you will hear some of that today, who have made draft recommendations that there are actions the government can take to show that

some of the unproven licensing procedures the NRC has developed should be demonstrated to pave the way for new reactors. But also we believe that there is some research that should be done in the longer-term future for new types of reactors.

I appreciate the opportunity to appear before this subcommittee and I would be happy to answer your questions. We also look forward to working with this subcommittee as you mark up legislation.

Mr. BARTON. Thank you, Doctor. The Chair would recognize himself for the first 5-minute question period.

Dr. Magwood, I am told that DOE did prepare testimony, written testimony on Price-Anderson. Is that true?

Mr. MAGWOOD. That is true. The Deputy General Counsel, Eric Fygi, I believe, has submitted Price-Anderson related testimony for the record.

Mr. BARTON. And that is my—if you have prepared written testimony on Price-Anderson, we would appreciate it if it would be provided for the record.

Mr. MAGWOOD. Absolutely.

Mr. BARTON. Okay.

[The prepared statement of Eric Fygi follows:]

PREPARED STATEMENT OF ERIC J. FYGI, DEPUTY GENERAL COUNSEL, U.S. DEPARTMENT OF ENERGY

Thank you, Mr. Chairman and members of the Committee, for the opportunity to discuss renewal of the Price-Anderson Act (Act) to provide liability coverage for Department of Energy nuclear activities. This is an opportune time to discuss renewal of this important indemnification scheme in light of the recommendation in the Report of the National Energy Policy Development Group that the Price-Anderson Act be extended. The Administration welcomes your attention to this important issue for the future of nuclear energy in the United States and looks forward to working with you to finish work on it this year.

In response to a question during confirmation hearings, Secretary Spencer Abraham stated that he agreed with the recommendations in the *Department of Energy Report to Congress on the Price-Anderson Act* (DOE Price-Anderson Report) (1999) that supported continued coverage of DOE nuclear activities under the Price-Anderson Act without any substantial changes. Secretary Abraham stated that indemnification of DOE contractors under the Price-Anderson Act was essential to the achievement of DOE's statutory missions in the areas of national security, energy policy, science and technology, and environmental management. Further, he indicated that he looked forward to working closely with members of both parties and with individuals from inside and outside government to secure the early renewal of the Price-Anderson Act.

Based upon over 40 years of experience, DOE believes that renewal of the Price-Anderson Act is in the best interests of the government, its covered contractors, subcontractors and suppliers, and the public. In 1957, Congress enacted the Price-Anderson Act as an amendment to the Atomic Energy Act of 1954 to encourage the development of the nuclear industry and to ensure prompt and equitable compensation in the event of a nuclear incident. Specifically, the Price-Anderson Act established a system of financial protection for persons who may be injured by a nuclear incident by cutting through tort defenses of the intermediary licensees and contractors. With respect to activities conducted for DOE, the Price-Anderson Act achieves these objectives by requiring DOE to include an indemnification in each contract that involves the risk of a nuclear incident. This DOE indemnification: (1) provides omnibus coverage of all persons who might be legally liable; (2) indemnifies fully all legal liability up to the statutory limit on such liability (currently $9.43 billion for a nuclear incident in the United States); (3) covers all DOE contractual activity that might result in a nuclear incident in the United States; (4) is not subject to the usual threshold limitation on the availability of appropriated funds; and (5) is mandatory and exclusive. Through these means the public is afforded a streamlined means of compensation for any injury from a nuclear incident.

DOE is convinced that the indemnification provisions applicable to its activities should be continued without any substantial change because it is essential to DOE's ability to fulfill its statutory missions involving defense, national security and other nuclear activities; it provides proper protection for members of the public that might be affected by DOE's nuclear activities; it is cost-effective; and there are no satisfactory alternatives.

Elimination of the DOE indemnification would have a serious effect on the ability of DOE to perform its missions. Without indemnification, DOE believes that it would be difficult to obtain responsible, competent contractors, subcontractors, suppliers and other entities to carry out work involving nuclear materials. Other means of indemnification have practical and legal limitations, do not provide automatic protection and depend on cumbersome contractual arrangements.

Private insurance generally would not be available for many DOE activities. Even when available, it would be extremely expensive, limited, and restricted. Because the DOE indemnification operates as a form of self-insurance for claims resulting from nuclear incidents, DOE incurs no out-of-pocket costs for insurance. Moreover, thus far, it has not paid out significant amounts for claims pursuant to its indemnification authority.

In the 1999 DOE Price-Anderson Report, DOE recommended that the Act continue to provide indemnification for DOE nuclear activities without substantial change. DOE made five recommendations:

DOE Price-Anderson Report Recommendation 1. The DOE indemnification should be continued without any substantial change.

DOE primarily recommended that the Act be renewed without substantial change. The Act should extend DOE's responsibility to indemnify its contractors as well as extend the NRC's authority to indemnify its licensees. Under the current Act, the authority of DOE and the NRC to indemnify is scheduled to expire on August 1, 2002.

DOE Price-Anderson Report Recommendation 2. The amount of the DOE indemnification should not be decreased.

DOE recommended in its report that this Act should not decrease the DOE amount of indemnification below the current amount of $9.43 billion. In the current Act, DOE's indemnity amount is pegged to the NRC aggregate amount and to the NRC inflation adjustment of that amount. DOE believes the continuation of an amount at least this high is essential to assure the public that prompt and equitable compensation will be available in the event of a nuclear incident and its consequences, as well as a precautionary evacuation. DOE also recommended that the amount of indemnification for nuclear incidents outside of the United States be increased from $100 million to $500 million.

DOE Price-Anderson Report Recommendation 3. The DOE indemnification should continue to provide broad and mandatory coverage of activities conducted under contract for DOE.

DOE recommended that the Act continue to provide broad and mandatory coverage of contractual activities conducted for DOE. The protection afforded by the DOE indemnification should not be dependent on factors, some of them predictive, such as whether an activity (1) involves the risk of a substantial nuclear incident, (2) takes place under a procurement contract (as opposed to some other contractual relationship that might not be so denominated), or (3) is undertaken by a DOE contractor pursuant to a license from the Nuclear Regulatory Commission (NRC). Limitations based on such factors would likely render uncertainty as to public protection and be cumbersome to administer without achieving any significant cost savings.

DOE Price-Anderson Report Recommendation 4. DOE should continue to have authority to impose civil penalties for violations of nuclear safety requirements by for-profit contractors, subcontractors and suppliers.

DOE recommended that the Act continue DOE's authority to impose civil penalties for violations of nuclear safety requirements and that nonprofit entities should remain exempt from civil penalties.

Concerning the exemption of nonprofit entities from civil penalties, we recently testified that the Department could generally support in concept the limitation of the nonprofit exemption up to the amount of the contractor's or subcontractor's fee paid. I pointed out several concerns, including the definition of a contractor's fee, the time period over which the fee is paid, the effective date of application to contracts entered into after the date of enactment, and the repeal of the automatic remission. Should this concept be pursued these concerns should be addressed carefully in crafting a legislative implementation of them.

I also noted in my testimony that in the information security area, Congress decided, following issuance of the DOE Price-Anderson Report, to impose potential liability for civil penalties on nonprofit organizations. For violations of regulations relating to the safeguarding and security of Restricted Data, the National Defense Authorization Act for Fiscal Year 2000 made nonprofit contractors, subcontractors, and suppliers subject to civil penalties not to exceed the total amount of fees paid by the DOE to each such entity in a fiscal year. I stated that a similar limitation of the exemption, up to the amount of the contractor's or subcontractor's fee paid, also would be a feasible approach for violations of DOE's nuclear safety regulations. The limitations in this legislation, however, should be structured to yield uniform standards for decision.

Recommendation 5. The Convention on Supplementary Compensation for Nuclear Damage should be ratified and conforming amendments to the Price-Anderson Act should be adopted.

DOE has examined the potential effects on the Price-Anderson Act of the Convention on Supplementary Compensation for Nuclear Damage and has concluded ratification of the convention would not necessitate any substantive changes in the Price-Anderson Act. Nonetheless were this convention to be submitted and ratified by the Senate, it is conceivable that some technical and conforming changes to the Price-Anderson Act might be desirable, such as provisions to make clear the geographic jurisdictional bounds of each legal regime.

This concludes my prepared statement. I will be pleased to respond to any questions the Committee may have.

Mr. BARTON. Chairman Meserve, EPA recently put out a separate groundwater standard on Yucca Mountain. What is the NRC's position on that separate groundwater standard?

Mr. MESERVE. You are quite correct that EPA has promulgated its final rules for Yucca Mountain, and they do include not only a standard for all pathways, but a separate standard for groundwater. The NRC is obligated under the statute to adapt its regulations to that standard, and we will do so. The Commission has long opposed the notion of a separate groundwater standard as a matter of policy, however, in that we, with the support, I might add, of the National Academy of Sciences, have taken the view that groundwater is already incorporated as an aspect of the all-pathway standard, and that there is no need for a separate standard for groundwater.

Mr. BARTON. Does that continue to be the view of the full Commission?

Mr. MESERVE. Yes, that continues——

Mr. BARTON. You said have long—do you continue to have that position?

Mr. MESERVE. We continue to have that position, but we recognize that EPA has spoken, and absent some congressional action——

Mr. BARTON. Only took them 18 years—19 years.

Mr. MESERVE. [continuing] we will obviously comply.

Mr. BARTON. Does DOE, Dr. Magwood, have a position on that issue, the separate standard?

Mr. MAGWOOD. I would say at this stage that there does appear to be common ground between where NRC and the EPA would like to be. Clearly, NRC stated opinion is that one regulator is enough, and in general, we would like to see one regulator. But if we can move forward with an EPA groundwater standard, we ought to try to do that. I understand from the directors of the High Level Waste Program that they believe that they may be able to work with these groundwater standards, but nevertheless it does present the

issue of dual regulation. I recognize that there is some concern about that.

Mr. BARTON. Dr. Magwood, can the Department present to this subcommittee the latest cost estimates on the construction of the Yucca Mountain facility if the decision is made to go forward with that facility? Do you have the latest cost estimates or can you get them and submit them to the subcommittee?

Mr. MAGWOOD. My office is not responsible for the HLW program but I would be happy to inquire about it.

Mr. BARTON. Would you do that?

[The following was received for the record:]

In response to your question, I would like to provide the latest cost estimates to construct and open a potential repository at Yucca Mountain, which were supplied by the Department's Office of Civilian Radioactive Waste Management. All costs are from the May 2001 report "Analysis of the Total System Life Cycle Cost of the Civilian Radioactive Waste Management Program."

Beginning in fiscal year 2002, the estimated cost is approximately $8.6 billion (in constant year 2000 dollars) through 2010, the planned start of repository operations. The estimate is based on assumptions that the Yucca Mountain site is recommended and approved for development and is licensed by the Nuclear Regulatory Commission. As the Subcommittee is aware, these events have not occurred. This estimate includes repository development, licensing, and construction ($6.3 billion over the same timeframe), including financial assistance to State and local governments and payments-equal-to taxes; waste acceptance and transportation ($1.0 billion), including costs to acquire a national and Nevada transportation infrastructure; and program management and integration, including funding for the Nuclear Regulatory Commission and the Nuclear Waste Technical Review Board ($1.3 billion).

Mr. BARTON. Are you authorized to give the Department's position, if any, on the issue of taking the Nuclear Waste Fund off budget?

Mr. MAGWOOD. No, Mr. Chairman. I am not authorized to comment on that.

Mr. BARTON. Okay. Who would be authorized, the Secretary? I mean how high do I have to go to get that position?

Mr. MAGWOOD. I would think that would be a good place to start.

Mr. BARTON. Okay. Chairman Meserve, does the NRC have a position on taking the Nuclear Waste Fund off budget?

Mr. MESERVE. Mr. Chairman, we have never had occasion to examine that.

Mr. BARTON. If I were to ask you, on the record, to examine it, would you do so and poll your other Commissioners and send us a written response?

Mr. MESERVE. We would be happy to do that, sir.

Mr. BARTON. Okay.

[The following was received for the record:]

The Commission currently receives an annual Congressional appropriation to cover high-level radioactive waste management activities from the Nuclear Waste Fund. The current process ensures that the Commission receives appropriate resources to execute its statutorily mandated responsibilities without burdening licensees. Also, the current process ensures that the Commission receives those funds independent of the U.S. Department of Energy (DOE), which would be the potential license applicant if an application were filed for an NRC license to dispose of high-level waste and spent fuel in a geologic repository. It is the Commission's understanding that these two fundamental attributes (i.e., sufficient funding to fulfill its role and funding obtained independent of DOE) would remain even if the Nuclear Waste Fund were taken off-budget. On that basis has a neutral position.

Mr. BARTON. And, finally, Dr. Meserve, we are told that there are some potential new designs for nuclear power that are being

prepared to be presented to the Commission for reviews. Is that your understanding?

Mr. MESERVE. Well, we have already reviewed three new designs and have certified them. We are in discussions with several other vendors about the prospect that we might certify some additional designs. And included in that might be some very novel designs. For example, the Pebble Bed Modular Reactor would be an example of a unique design.

Mr. BARTON. Do you have confidence that you have got the staff expertise and quantity of staff to review these applications—new design applications in a timely fashion?

Mr. MESERVE. Well, this has been a recently emerging activity, and we are assembling the necessary resources and doing that evaluation now. I did submit a letter indicating that for fiscal year 2002 we would anticipate the need of some additional funding, which in part is in the House markup of our appropriations bill.

Mr. BARTON. Okay.

Mr. MESERVE. We are including these matters in our evaluation for the fiscal year 2003 budget, which is being developed now, to make sure that we have the resources in place in order to be able to handle the possibility that we may see some very different kinds of designs to evaluate.

Mr. BARTON. Good. I am going to yield the balance of my time and recognize the distinguished ranking member, Mr. Boucher. We have got numerous witnesses today, so I am going to be a little stricter than normal on the questioning time. Mr. Boucher is recognized for 5 minutes.

Mr. BOUCHER. Well, thank you, Mr. Chairman, and I am going to be very brief. And I simply want to pick up on the last question that the chairman asked with regard to the Pebble Bed Modular Reactor. And my question relates to the application of Price-Anderson principles to that potential new reactor design.

Price-Anderson currently imposes a premium of, I believe, it is $200 million per reactor unit, and that is the tier I premium. And then in the event that there is a nuclear accident, there is a retroactive premium that is, I think, on the order of $90 million per unit. And that applies without regard to the size of the unit. And the traditional size is about 1,000 megawatts. But these new modular units will be on the order of 100 megawatts. And if several of them are linked together in a modular configuration, three units, for example, totaling 300 megawatts, each of them would have to pay the premium that the current law specifies of $200 million and then have the same retroactive liability. So you would wind up with potentially $600 million of premium for 300 megawatts of nuclear reactor. Whereas if you built a large 1,000 megawatt unit, you would only have $200 million of premium.

And my question to you is under your current authorities, do you have the ability to make the adjustments that would be necessary to scale down the size of that premium in such a way as to accommodate these new units in the event that you certify them and find that they are appropriate for construction?

Mr. MESERVE. Mr. Boucher, let me say that I think that the numbers you have are slightly different than my understanding of the premium amounts.

Mr. BOUCHER. Okay. Well, that is entirely possible, but——

Mr. MESERVE. But, nonetheless, the basic point that you——

Mr. BOUCHER. Yes. It is more the principle than the amounts I am addressing here.

Mr. MESERVE. Yes, I understand. This is an issue with which the Commission is grappling as we speak. We are trying to evaluate the situation as to what flexibility there is within the statute or whether perhaps some legislative consideration ought to be given to an amendment of the Price-Anderson Act to deal with this. And we would be happy to submit materials to you on this issue for the record.

[The following was received for the record:]

As indicated in our response to Question 1, the Commission believes that Congress should amend the Act if Congress concludes that multiple modular reactor units at a single site should be treated as a single facility for Price-Anderson purposes. The Commission is also of the view that any statutory changes proposed to address this matter should be made within the Price-Anderson provision itself (section 170 of the Atomic Energy Act) so as to limit the potential for unintended impacts of changes on the overall regulatory framework. Redefining the term "facility" exclusively within section 170 in a way different from the way it is used throughout the Atomic Energy Act and legislative histories will have the advantage of not disturbing existing law and implementing rules with respect to non-Price-Anderson issues.

Consistent with this view and in response to the request that we provide legislative language, we have drafted an amendment to section 170 of the Atomic Energy Act that would treat multiple modular units at a single site as a single facility for purposes of the Price-Anderson retrospective assessment. In evaluating whether to pursue such a provision, the Congress might consider the need to trigger the maximum insurance and retrospective assessment provisions against the impact and equity of such requirements on multiple modular units and on existing plants.

If Congress determines that multiple modular units at a single site should be treated as a single facility for purposes of the retrospective assessment, Congress might consider an insert to Section 170b(1), following immediately after the first proviso and before: "Such primary financial protection . . .":

> *And provided further,* That for multiple modular reactors located at a single site, a combination of such reactors (irrespective of whether they are licensed jointly or singly) having a total rated capacity between 100,000 and 950,000 electrical kilowatts shall, exclusively and only for the purposes of this section, be denominated a single facility having a rated capacity of 100,000 electrical kilowatts or more.

This provision would define a range of power levels—the current threshold of 100 Mwe to an upper limit of 950 Mwe—for which a combination of multiple modular reactors would be treated as a single facility for the retrospective assessment. We use 100 Mwe as the lower limit because it is the longstanding threshold power level that Congress established as the level at which Price-Anderson coverage must be provided.

We suggest 950 Mwe as a possible upper limit because it roughly approximates the median power level of the large currently licensed power reactors (55 licensed reactors have rated power levels between 800 and 1105 Mwe). If chosen, 950 Mwe would avoid conflict with the existing retrospective premium assessments in the secondary insurance pool. However, there are many different fairness and equity arguments on this issue and the Commission does not have a view or preference as to the specific limits—that is a policy decision for Congress.

If Congress were to choose to amend Section 170 to treat multiple modular units at a single site as a single facility for purposes of retrospective assessment, there is no doubt that there are other formulations that would achieve the same result.

Mr. BOUCHER. Well, that is very good, Mr. Meserve. And if you believe that, we do need to act legislatively in order to address this concern. I would hope that you would inform us of that fact and perhaps suggest an appropriate course for doing that. Thank you very much.

Thank you, Mr. Chairman. That is all I have.

Mr. BARTON. The gentleman from Oklahoma, Mr. Largent, is recognized for 5 minutes.

Mr. LARGENT. Mr. Meserve, I have a question for you, just one question. It is my understanding that Exelon, General Atomics and Westinghouse and others are planning to bring advanced reactor technologies to the NRC for review and approval. It is my understanding that the NRC is currently losing a lot of its technical staff to retirement and actually have fewer nuclear reactor engineers are available to take their place. And the concern among industry folks is whether you actually have the technical expertise to even review their proposal. Is that true?

Mr. MESERVE. We have a serious human capital challenge in that in some important offices of the NRC up to 25 percent of the people are eligible to retire today. We have a situation where we have five times as many people over age 60 as we have under age 30. This is a consequence of many years of declining budgets at the NRC; the way the NRC has handled that situation is by allowing attrition to occur. And so the demography of the agency has become increasingly aged as time has gone on.

We take that issue very seriously. We have underway an evaluation of the skills we have at the NRC and how long we expect to be able to have them, what skills we need to have to do the work that is in front of us, and are developing strategies to fill the gaps. We are very aggressively undertaking recruitment activities, examining various retention activities and other ways in which we can encourage people to consider government employment with the NRC.

I think there will be a challenge not only for the NRC but for the industry and for the Department of Energy in that we have the pipeline of our educational system which is not producing the people at the moment that all of us collectively need. And so that there is a national challenge, it is not just an NRC challenge, in this area.

Mr. LARGENT. Mr. Meserve, are you aware of any effort by TVA to complete the nuclear reactor that they have that is not complete currently?

Mr. MESERVE. I believe that there has been some talk of possible evaluations that TVA might undertake of some reactors that were partially constructed but not completed. I am not aware of the current status of its evaluation of that matter.

Mr. LARGENT. Okay.

Mr. MESERVE. But it is something I understand that TVA has, at least at some level, been considering.

Mr. LARGENT. Great. Mr. Chairman, that is all the questions I have. I yield back.

Mr. BARTON. Is Mr. Dingell in the outer room? He was here just a minute ago. Could you all check? He is next if he is in the annex. If not, it is Mr. Doyle. He is not? The Chair would recognize the gentleman from Pennsylvania, Mr. Doyle, for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman, and I would like to welcome our panelists.

Director Magwood, I remember back in 1998, during a hearing on the DOE budget, we spoke about the Department's then proposed nuclear engineering research initiative, which was a program

recommended by the PCAS as a way to address some of the problems facing nuclear energy. And I realize there is currently about 55 NERI projects underway, with an additional 12 to 15 projects expected to be selected for award. Can you give us an overview of some of the projects that you feel are best addressing the potential long-term barriers of nuclear power use? And if possible, can you also give us a sense of direction of how the new projects will complement or differ from the ones that are already underway?

Mr. MAGWOOD. Yes. I would like to do that. There are lots of good examples of projects that have been conducted in the NERI Program that have contributed to the long-term viability of nuclear power. One that you may find interesting is one that was submitted by industry for a small light water reactor. This reactor has, after our NERI award was granted, become the subject of considerable interest internationally and has drawn considerable internationally investment. Other countries, I think, Italy, Japan, and others came into this project providing far, far more money than we were providing as a NERI project. There has actually now been some talk—I am sure that Chairman Meserve has heard it—that this reactor should be taken to the NRC sometime in the next few years for possible certification. So here is an example where very advanced technology has been brought to fruition through a NERI project.

In addition, NERI has been very effective in looking at very basic technology issues, such as materials. One of the things that laypeople don't think about when it comes to the nuclear industry, is the fact that the entire nuclear business revolves around how materials react in certain conditions, and we have done lots of research through NERI program on materials.

With respect to the future, I think we are going to spend a lot of time thinking about what has become known as Generation IV nuclear power systems. This is a very exciting area of study that we are pursuing with other countries. There is a new Generation IV International Forum has been formed around the United States and includes eight other countries. And we are planning to work together to develop what we believe will be the next generation of nuclear power plants that will be deployed perhaps 20 years from now.

So the direction is actually very bright. We are working very closely with our international partners, very closely with academia and industry and our national laboratories. I think for the first time in many years, we have been able to bring that nuclear research community together in a very constructive way.

Mr. DOYLE. What do you think, in the Department's view—you hear many concerns about nuclear economic safety, proliferation resistance, waste minimization. What do you feel is currently the most pressing problem, in the Department's view? And what in addition to NERI and Generation IV are you doing to address what you feel is the most pressing concern? And, finally, are you receiving adequate funding support to meet your goals in this area?

Mr. MAGWOOD. Well, I think that the biggest challenge facing the future of nuclear power is something we really can't do much about it, that's perception. There clearly is a backlog of negative perceptions through many parts of society, I think, not just in the general

society but within the utilities. I think there still are people in the utility industries who remember financial problems for utilities as a result of nuclear project. I think a lot of people have gotten past some of those issues. I think the people on Wall Street have gotten past those issues. So a lot of progress has been made. But I think the general public still needs yet more information about the benefits of nuclear power. So, that is one issue that no amount of funding can take care of it. It just simply will take time, and I think the good operating record of existing reactors is also contributing to that.

From a technology standpoint, I think that the long-term issue of fuel supply and the relationship with spent fuel and high-level waste is something we are giving a lot of thought to. The national energy policy speaks to the possibility of relooking at reprocessing, using transmutation to deal with waste in the long-term. That doesn't solve the problem today, but when you are thinking about our energy supplies going out 30 or 40 years, you really have to think carefully about these issues. It is possible that advanced technology could make the geological repository we hope to build last a lot longer, maybe keep us at one repository center, not having to worry about a second repository, which is the current plan. So, I think those are the sorts of long-term issues that we need to deal with.

Regarding funding, there is never enough funding for these activities. The nuclear program has really gone through a very rough time. In the early 1990's, we had a research budget of over $200 million a year. In the late 1990's our research budget was cut to zero. In the current budget proposal for 2002, it is less than $50 million. So it is a real challenge to really keep these issues rolling, but we are doing what we can with them.

Mr. DOYLE. Thank you. Thank you, Mr. Chairman.

Mr. BARTON. Thank the gentleman from Pennsylvania. The gentleman from Illinois, Mr. Shimkus, is recognized for 5 minutes.

Mr. SHIMKUS. Thank you, Mr. Chairman. My questions will be directed to Mr. Magwood, although I know he may not be the expert on some of this stuff. If possible, if there is no answer, if you could have DOE submit the answer to us and to the staff through me, I would appreciate it.

It is my understanding, under Price-Anderson, DOE has the authority that requires contractors to obtain insurance to cover public liability in the event of a nuclear incident at DOE sites. DOE, however, has not required its contractors to obtain any insurance. Instead DOE provides 100 percent indemnity to its contractors. And now the question: Has DOE required any of its contractors to obtain liability insurance?

Mr. MAGWOOD. Your statement exhausted my experience on the issue, would be happy to find out.

[The following was received for the record:]

While the Price-Anderson Act (Act) gives DOE the statutory authority to require its contractors to obtain financial protection, DOE has a long-standing policy of not permitting or requiring its contractors to obtain liability insurance. DOE provides in its regulations that its contractors will not normally be required or permitted to furnish financial protection by purchase of insurance to cover public liability for nuclear incidents. 48 C.F.R. §§ 950.7010, 970.2870(e). To require private insurance would increase DOE's operating expenses. The costs of financial protection for an

NRC licensee operation are typically recouped through their rate base. Conversely, the cost of such financial protection for DOE contractors would be a reimbursable cost under the Department's cost-reimbursement type contracts for which DOE would be required to pay.

Under its contracting procedures, DOE generally follows federal government policy not to approve the purchase of general liability insurance by cost-type contractors In assessing this policy, the Comptroller General has reasoned that the magnitude of government resources obviously makes it more advantageous for the government to assume its own risks than to shift them to private insurers at rates sufficient to cover all losses, to pay insurers' operating expenses, in eluding agency or brokers' commissions, and to provide such insurers a profit. *See, e.g., 19 Comp. Gen. 211 (1939); 55 Comp. Gen. 1343 (1976).*

Mr. SHIMKUS. I don't think there is. I think the answer, we will find out, is no, but hopefully you will correct me if that is not correct.

Mr. MAGWOOD. Be happy to go look at that.

Mr. SHIMKUS. Then the follow-up answer, if it is no, or if it is 99.9, then the answer is why not, will be the follow-up. And then has DOE looked into the availability of insurance for its contractors, to follow-up. And why would DOE not want to have at least some insurance for its programs?

Mr. MAGWOOD. I will be happy to have all those answers for you, for the record.

[The following was received for the record:]

Private insurance is expensive and most likely is not available for many DOE activities. The American Nuclear Insurers (ANI), a private insurance company, is currently the sole source of nuclear hazards insurance. In response to a query in connection with DOE's Price-Anderson Act Report to Congress, ANI set forth the terms under which it would consider providing private insurance for DOE nuclear facilities.[1]

ANI stated that it is "not in a position to guarantee that coverage would actually be written" for a DOE nuclear facility and that any "agreement to provide insurance would depend on a careful engineering evaluation of the facility, the activities performed, and the DOE's agreement to implement recommendations that may be offered." ANI added that it would be much easier "to write nuclear liability insurance for new DOE facilities than for existing facilities" because ANI would have obvious concerns about picking up liability for old exposures which may well preclude insurability for facilities which have, in some cases, operated for decades. Moreover. ANI indicated any insurance policy would exclude on-site cleanup costs; environmental cleanup; property damage at the insured facility; and bodily injury or property damage due to manufacturing, handling or use of any nuclear weapon or other instrument of war. Radiation tort claims by workers also would be excluded but might be covered under a separate industry-wide policy issued by ANI subject to a shared industry-wide limit of $200 million.

ANI stated that it would consider writing nuclear liability insurance at DOE facilities at limits up to $200 million—the maximum liability limit that it is currently able to write at any one facility. For this insurance, ANI would charge DOE contractors a premium from $500,000 to $2 million annually. ANI indicated it would base premiums "upon such factors as: type of facility insured, nature of the activities performed, type and quantities of nuclear material handled, location of the facility, qualifications of site management, quality of safety-related programs and operating history."

Under its government-wide cost-type contracting principles, if DOE required its major site and facility management contractors to procure such insurance, DOE would be required to treat the resulting premiums as allowable costs and would thereby have to reimburse hundreds of contractors and subcontractors for these insurance premium costs. Subcontractor insurance premiums would also be passed through to the government. Reimbursement of these premiums would secure insurance coverage equal to only approximately 2% of the DOE indemnity of $9.43 bil-

[1] Department of Energy Report to Congress on the Price-Anderson Act, Appendix C, Letter from John L. Quattrocchi, Senior Vice President, Underwriting, American Nuclear Insurers, to Omer F. Brown, II, Harmon & Wilmot, L.L.P, January 21, 1998 (Attachment B to Comments filed by Energy Contractor Price-Anderson Group to Notice of Inquiry) (attached).

lion. Thus, even if private insurance were available, the amount of insurance coverage would be limited and the cost would be extremely high. Consequently, there is no economic advantage to DOE, its contractors, or to the public in requiring private insurance.

ATTACHMENT B

AMERICAN NUCLEAR INSURERS
UNDERWRITING DEPARTMENT
January 21, 1998

Mr. OMER F. BROWN, II
Harmon & Wilmot, L.L.P.
1010 Vermont Avenue, N.W.
Suite 810
Washington, D.C. 20005

Re: DOE Notice of Inquiry

DEAR MR. BROWN: On December 31, 1997, the DOE published in the Federal Register a Notice of Inquiry concerning the preparation of its Report to Congress on the renewal of Price-Anderson. One of the DOE's questions (Question 11) dealt with the availability of private insurance for DOE contractors. To the best of my knowledge, ANI is currently the sole source of nuclear liability insurance in the U.S. In that context, I thought the Energy Contractors' Price-Anderson Group might be interested in some of our thoughts on the issue of insurance.

The DOE has always had the option of requiring its contractors to maintain financial protection below the level at which indemnity is provided. It has opted not to require any underlying financial protection because the cost of such protection would be passed through to the government under the contract. Instead, the government has elected to self-insure the risk. Thus indemnity under 170(d) has applied to contractors and other "persons in indemnified" on a "first dollar" basis. In view of the position taken by the government over more than forty years, it is unclear why DOE would consider requiring underlying insurance at this late stage.

In any event, if requested, ANI would consider writing nuclear liability insurance at DOE facilities at limits up to $200 million—the maximum liability limit we are currently able to write at any one facility. However, we are not in a position to guarantee that coverage would actually be written. Any agreement to provide insurance would depend on a careful engineering evaluation of the facility, the activities performed, and the DOE's agreement to implement recommendations that may be offered.

If insurance is written, premiums would be based on such factors as: type of facility insured, nature of the activities performed, type and quantities of nuclear material handled, location of the facility, qualifications of site management, quality of safety-related programs and operating history. Although we cannot provide any definitive numbers, annual per policy premiums might fall in the range of $500,000-$2 million at policy limits of $200 million. These premiums would, of course, be subject to change over time.

I might add that it would be much easier for us to write nuclear liability insurance for new DOE facilities than for existing facilities. For facilities which have, in some cases, operated for decades, we would have obvious concerns about picking up liability for old exposures which may well preclude insurability.

I would also note that the nuclear liability policy written by ANI provides coverage only for the insured's liability for tort damages because of offsite bodily injury or property damage caused by the nuclear energy hazards Among other things, the policy specifically excludes coverage for:

- radiation tort claims of workers which can be covered under a separate industry-wide policy issued by ANI subject to a shared industry-wide limit of $200 million;
- bodily injury or property damage due to the manufacturing, handling or use of any nuclear weapon or other instrument of war;
- property damage to any property at the insured facility;
- on-site cleanup costs;
- environmental cleanup costs—i.e., those costs arising out of a governmental decree or order to clean up, neutralize or contain contamination of the environment.

The exclusions I've noted are highlighted and paraphrased for general information purposes only. All policy terms, conditions and exclusions should be carefully read in order to determine the scope of coverage afforded by the policy.

I hope this information is helpful to the review process. In the final analysis, even if insurance for DOE sites can be written, it could not replace the roughly $9 billion of indemnity granted under 170(d) since we are only able to write liability limits up to $200 million at this time.

Sincerely,

JOHN L. QUATTROCCHI,
Senior Vice President, Underwriting

Mr. SHIMKUS. Okay. Mr. Chairman, the final point is that if Price-Anderson is not renewed, DOE Price-Anderson will not be available for DOE contracts after August 2002, which is our understanding. And if that is the case, please confirm that for us. And I will yield back my time, Mr. Chairman.

Mr. BARTON. The gentleman from Ohio, Mr. Sawyer, is recognized for 5 minutes.

Mr. SAWYER. Thank you very much, Mr. Chairman. Chairman Meserve, I have got a series of questions about the transportation of nuclear waste. You both may want to answer, but my understanding is that section 108 of the act instructs the Secretary of Energy only to abide by the regulations of the Commission regarding advanced notification of State and local governments prior to transportation of spent nuclear fuel or high-level radioactive waste.

I would like to inquire about the procedures and the criteria for choosing those routes before you inform State and local governments. I am assuming that those criteria include some combination of route safety, speed of delivery, exposure time on transportation systems and population. And my first question is how do you establish what criterion should serve as the highest priority in that kind of decisionmaking and when would avoiding transportation through population centers not be the highest priority?

Mr. MESERVE. Let me back up just one moment and say that one of the things that the NRC, first of all, does is that we have very high standards for the casks with which spent fuel is transported to assure that even in the event of an accident that the cask would not fail in a way that results in the release of radioactive materials.

In the case of spent fuel that is under our jurisdiction—and there is divided responsibility here.

Mr. SAWYER. I understand.

Mr. MESERVE. The Department of Energy has responsibility for some materials which it regulates itself, and we regulate commercial spent fuel. The licensee would come to us if it were going to transport spent fuel with a proposed route. We evaluate that route for the purpose of assessing the safeguards issues associated with that transport, namely the possibility the material might be hijacked and used for proliferation purposes. And that would involve the NRC staff, quite frequently, traveling the route, evaluating whether there are safe havens on the route and so forth in order to assess it.

The Department of Transportation, as I understand it, has responsibility for the safety-related issues associated with the transport of spent fuel and does an evaluation with the safety side of the issues.

Mr. SAWYER. I don't want to run out of time. I don't want to curtail your answer, but I don't want to run out of time. Let me rephrase the question then. Does the concentration of population

along a route play a substantial role in the establishment of what a route might be?

Mr. MESERVE. I am sure it is something—perhaps it would be better if I responded for the record, but my understanding is that the examination of population centers is important. There are other factors to consider—fastest route, safe havens that would be available. That sort of thing would have to be weighed in the balance.

[The following was received for the record:]

Population concentrations are factored into the decision regarding a transportation route. However, other considerations are factored into routing decisions as well. The routes for transporting high-level radioactive waste (HLW) are selected by the carrier (i.e., trucking or railroad company) in consultation with the shipper, consistent with the U.S. Department of Transportation (DOT) and/or carrier-specific requirements. Once selected by a carrier, each transportation route is submitted for U.S. Nuclear Regulatory Commission (NRC) approval of its physical protection and security considerations. NRC regulations specify additional measures to be taken in heavily populated areas. NRC's physical protection and security regulations require constant communications capability when transporting HLW through heavily populated areas. In addition, highway shipments of HLW through heavily populated areas are required to be accompanied by an armed escort. Rail shipments of HLW through heavily populated areas are required to be accompanied by two armed escorts.

For transportation by public highway, carriers are required to select routes that reduce the time in transit. To facilitate selection of a route that reduces time in transit, DOT regulations specify the use of "preferred routes," meaning the U.S. interstate highway system and related city bypasses. States may designate alternate preferred routes to supplement the DOT prescribed interstate highway system or to provide suitable alternatives to the interstate highway system. States use DOT guidance to evaluate and establish alternatives, and one of several primary route comparison factors is the contribution of population density to risk. Thus, for highway transport, the States may consider population density in route selection.

For railway transportation, population density does not play a significant role in selection among possible routes. There are limited routing choices for rail transportation and often mainline railroad tracks travel between and through urban-industrial areas; however, rail lines are private property and generally are farther removed from the public than highways. For transportation by railroad, route selection relies on industry practices (there are no DOT regulations for selecting from among rail route alternatives). Generally, railroad routing practice is to maximize mileage between interchanges with forwarding railroads. Future transport of HLW cargo by railroad may not follow this practice depending on such factors as the special needs of the shipper, effects on other rail commerce, use of single-purpose trains, and special clearance requirements (if any) for railcars loaded with HLW. DOT regulations require rail carriers to forward each shipment of hazardous material, including HLW, promptly (i.e., on the next available train) and within 48 hours after acceptance.

Mr. SAWYER. If there is the establishment of a centralized repository for waste, would there be regular routes or would those routes change over time?

Mr. MESERVE. I don't know the answer to exactly how that would be worked out. I would suspect that there might be some variability in the routes for safeguards reasons.

Mr. SAWYER. Sure. And, of course, highways like hospitals and universities and airports are always works in progress, and they change over time.

Let me just go to one final question on this subject. I assume that accidents during transportation would be covered under Price-Anderson. I am concerned about the additional costs, however, particularly communities along the route, in terms of training and equipment for safety forces, upgrading road standards, traffic management requirements, and the increase in risk and potential decrease in property values along identified regular routes. Would

Price-Anderson come into this at all or would there be other forms of compensation to communities that understood this burden?

Mr. MESERVE. I don't believe that Price-Anderson covers the types of losses that you have described. But perhaps I would best answer that question for the record.

[The following was received for the record:]

No. Price-Anderson is only triggered in the event of a nuclear incident. There are no provisions in the Act to pay for assistance for costs undertaken by communities for planning purposes.

Mr. SAWYER. Should there be? Should there be coverage for that kind of risk undertaken?

Mr. MESERVE. I think that is a judgment that Congress might be in a better position to make than the NRC. I can say that there has been transport of spent fuel for 30 years and—there have been accidents that have occurred of an ordinary traffic variety, but we have never had a cask fail in a way that has resulted in a release of radioactive materials.

Mr. SAWYER. Thank you very much, Mr. Chairman. Mr. Magwood, do you have any comments that you would like to make?

Mr. MAGWOOD. Just a very brief comment. Chairman Meserve mentioned that DOE, under its own oversight, moves spent fuel around the country on a very regular basis. It has a lot of expertise, a lot of experience and an excellent safety record with moving spent fuel around the country.

Mr. SAWYER. Thank you very much.

Mr. BARTON. The gentleman from Arizona, Mr. Shadegg, is recognized for 5 minutes.

Mr. SHADEGG. Thank you, Mr. Chairman. There are some new technologies coming forward, and they are quite, I guess, dramatically different than existing technologies in the nuclear field. I would like to ask either of you, though, Chairman Meserve, it may be more appropriate for you to answer, what changes you believe will be needed, or the NRC believes will be needed, to its regulations to address these new technologies, particular with regard to licensing and inspections?

Mr. MESERVE. Let me say that is a matter that we are currently evaluating. Of course, the degree to which we would need to make modifications of our regulations would depend, to some extent, to a large extent, on the nature of the technology with which we are presented.

We have a comprehensive regulatory system that is designed for reactors that are cooled by light water. If somebody were to come forward with, for example, a gas-cooled reactor, then we would have to make modifications of our regulatory system in order to accommodate the different kinds of threats that would be presented by that design and basically develop a regulatory process that would be the counterpart of the one that we have for light water reactors today.

Mr. SHADEGG. And you are currently looking at those issues?

Mr. MESERVE. Yes, we are.

Mr. SHADEGG. Okay. Mr. Magwood?

Mr. MAGWOOD. Yes. I won't comment on the specifics of any particular technologies out there now, but I would say that we have encouraged NRC for the longer-term, to move toward a more ad-

vanced methodology of licensing, using risk-informed, performance-based standards. They are moving in this direction. I think they have made a lot of progress.

For reactors that would be licensed in this decade, however, it simply isn't enough time to go into a more advanced licensing form, so we have to work with more or less the tools that we have in hand. And I think that, from the discussions I have had with NRC officials, that the NRC understands the issues and is looking for ways of moving through the very complicated technical subjects that have come along.

Mr. SHADEGG. I am a supporter of the central repository at Yucca Mountain. However, it seems to me if we don't get that issue resolved, the only way nuclear can move forward is that we either decide to complete Yucca Mountain and use it or to go to some other form of storage, perhaps dry cask storage, as is happening in Europe. Do either of you—can either of you give me the timeframe for those decisions and any input on your thoughts with regard to alternatives to the central repository?

Mr. MAGWOOD. As I think I mentioned earlier, we expect to see a decision from DOE on the site suitability analysis around the end of this year. So we are moving in that direction. I don't think it is an appropriate for us to speculate about alternatives to that, because that is really the focal point of our activity right now, and I think it is essential that that go forward.

I think it is essential that the government continue to show progress in moving toward a repository. Even with new technologies, transportation and recycling, we need a repository, and I think we just simply need all the support we can get from Congress to have the funding and the support to go forward with the program.

Mr. SHADEGG. Mr. Chairman, do you have any comment on that?

Mr. MESERVE. The only thing I would add is that the Commission is comfortable that we are able to accommodate the spent fuel that is being generated by the reactors or in new reactors until such time as a repository is available. The fuel is currently stored either in spent fuel pools or in dry cask storage. We are comfortable that that is a safe way in which to hold the fuel for a period of decades. It is obviously not a long-term solution, but there is time in order to get a repository in place.

Mr. SHADEGG. As a supporter of Yucca, I appreciate your comments. I think there is a new urgency in light of the energy crisis facing the country and the refocus that we are seeing on nuclear these days. With that, Mr. Chairman, I yield back the balance of my time.

Mr. BARTON. Thank the gentleman. Would recognize the gentleman from Michigan, Mr. Dingell, for 5 minutes.

Mr. DINGELL. Mr. Chairman, I thank you for your courtesy. I have no questions at this time.

Mr. BARTON. Would then recognize Mr. Strickland for 5 minutes.

Mr. STRICKLAND. Mr. Chairman, thank you. Mr. Meserve, Chairman Meserve, could you tell us approximately what percentage of our nuclear fuel for our power plants that produce some 20 percent of our electricity now comes either from Russia or other foreign sources?

Mr. MESERVE. I would have to provide that information for you for the record. It is certainly the case that some of the fuel that is burned in the United States does come from foreign sources. Some portion of it comes from Russia, as the result of the arrangements for the diluting of the high-enriched uranium from the weapons program.

Mr. STRICKLAND. Mr. Magwood, could you confirm that we now import over 50 percent of the fuel that we use for our nuclear power plants?

Mr. MAGWOOD. If you include the HEU agreement with Russia, yes, that is accurate.

Mr. STRICKLAND. And that is primarily from Russia but some portion from other countries.

Mr. MAGWOOD. We do receive some amount of our supply—the United States uses about 10 million SWUs, as we call them.

Mr. STRICKLAND. Sure.

Mr. MAGWOOD. And I think about 2.5 million SWU comes from Europe.

Mr. STRICKLAND. Great. So right now, today, in America, we are importing more than half of the fuel that produces the 20 or so percent of the electricity generated in this country. We are deeply dependent on foreign sources for nuclear fuel today. Is that right?

Mr. MAGWOOD. With the shutdown of the plant in Portsmouth, that is accurate. We are importing a large percentage of our needs, yes.

Mr. STRICKLAND. Well over 50 percent.

Mr. MAGWOOD. About that.

Mr. STRICKLAND. I have been led to believe perhaps 53 percent.

Mr. MAGWOOD. Well, I think it is important to recognize, though, that USEC exports to foreign customers.

Mr. STRICKLAND. But the important thing that I am trying to emphasize here is that we are heavily dependent on Russia and other countries for nuclear fuel. These new reactors that may come on-stream, my understanding is that they may need enriched uranium or enriched fuel, up to 8 percent; is that correct?

Mr. MAGWOOD. That is correct.

Mr. STRICKLAND. To what level was the Portsmouth facility licensed to enrich?

Mr. MAGWOOD. I believe Portsmouth was licensed up to 5 percent.

Mr. STRICKLAND. Ten percent, I believe.

Mr. MAGWOOD. Excuse me, 10 percent.

Mr. STRICKLAND. And we have closed it down. To what level is the Paducah facility licensed to enrich?

Mr. MAGWOOD. I think I will defer to Chairman Meserve on that, but I believe it is——

Mr. MESERVE. Five percent.

Mr. MAGWOOD. [continuing] 5 percent.

Mr. STRICKLAND. Five percent. So we are proceeding to develop new reactors, and we do not have a facility currently capable of enriching uranium to produce the fuel those reactors may need.

Mr. Chairman, Chairman Meserve, you said that the role of the NRC is safety. Certainly, that is one of the roles. But I believe as a result of the 1996 Privatization Act you have a second role, and

I would like to read from that act: "No license or certificate of compliance may be issued to the USEC or its successor, under this section, if the Commission determines the issuance of such a license or certificate of compliance would be inimical to, and one of the things is, the maintenance of a reliable and economic domestic source of enrichment services." It seems to me that we have given you a second responsibility, and that being responsibility for ensuring energy security in terms of nuclear fuel? Would you agree?

Mr. MESERVE. It is in fact the case that in the legislation covering the privatization of the enrichment facilities, there was a unique obligation that was given to the Commission to examine reliable and economical supply, among other issues, associated with the issuance of a certificate to that facility.

Mr. STRICKLAND. And do you feel that you fulfilled that obligation when you approved the closing of the Portsmouth facility and the upgrading of the Paducah facility?

Mr. MESERVE. Well, actually, we approved the upgrading of the Paducah facility. It was a decision by the certificate holder to close the Portsmouth facility.

Mr. STRICKLAND. But wasn't that a factor in whether or not we can maintain a reliable domestic supply, since as a result of Mr. Magwood's statement, since Portsmouth has closed we are now importing over 50 percent of the fuel we use from foreign sources? That is not a reliable domestic supply, in my judgment.

Mr. MESERVE. We have had the opportunity to discuss this before. As I think I have indicated in the past, the assessment from our General Counsel's Office was the language to which you have quoted from the statute was chiefly looking at foreign ownership issues.

Mr. STRICKLAND. Chairman Meserve, excuse me for interrupting. I would challenge you or your General Counsel to find anything in the congressional debate regarding that act that would lead one to believe that was the intent of this language. Would you please supply me with any reference within the congressional discussion, debate or within the act itself that would verify or justify such a conclusion?

Mr. MESERVE. We would be happy to do so.

[The following was received for the record:]

On April 26, 1996, President Clinton signed into law H.R. 3019 (Public Law No. 104-134), legislation which provided FY 1996 appropriations to a number of Federal agencies. Included within this legislation is a sub chapter entitled the "USEC Privatization Act." Section 31I6 of this Act amended several provisions of the AEA including section 193 by adding the following:

(f) LIMITATION.—No license or certificate of compliance may be issued to the United States Enrichment Corporation or its successor under this section or sections 53, 63, or 1701, if the Commission determines that—

(1) the Corporation is owned, controlled, or dominated by an alien, a foreign corporation, or a foreign government; or

(2) the issuance of such a license or certificate of compliance would be inimical to—

(A) the common defense and security of the United States; or

(B) the maintenance of a reliable and economical domestic source of enrichment services.

The evolution of section 193(f) indicates that the intent behind the provision was to guard against attempts by foreign corporations or governments to acquire control of the GDPs and subsequently take actions to undermine the U.S. enrichment capability.

The substance of Section 193(f) was initially proposed in a draft bill submitted by the Administration providing comments on S. 755, a bill to provide for USEC privatization. The Administration's comments included the following provision as a new section entitled, "Section 1704 Foreign Ownership Limitation," in Chapter 27 of the AEA:

> No license or certificate of compliance may be issued to the Corporation under Sections 53, 63, 193, or 1701 if, in the opinion of the Nuclear Regulatory Commission, *the issuance of such a license or certificate* of compliance to the Corporation *would be inimical to the common defense and security of the United States due to the nature and extent of the ownership, control or domination of the corporation by a foreign corporation or a foreign government or any other relevant factors or circumstances.*[1] (Emphasis added)

The Administration's bill included the following codification change to the AEA as section 193(f):

> (f) LIMITATION—No license or certificate of compliance may be issued to the United States Enrichment Corporation or its successor under this section or sections 53, 63, or 1701, if in the opinion of the Commission, the issuance of such a license or certificate of compliance—
>
> (I) would be inimical to the common defense and security of the United States; or
>
> (ii) *would be inimical to the maintenance of a reliable and economical domestic source of enrichment services because of the nature and extent of the ownership, control, or domination of the Corporation by a foreign corporation or a foreign government or any other relevant factors or circumstances.*[2] (Emphasis added)

S. 755, as reported by the Senate Committee on Energy and Natural Resources, included the Administration's proposed codification of an amendment to section 193 of the AEA.[3] The Committee's report to accompany S. 755 discusses the provision in a section entitled "Limitations on Foreign Ownership." It noted that:

> S. 755, as introduced, contains a provision providing the Nuclear Regulatory Commission with the authority to deny a license or certificate of compliance if the "issuance of such a license or certificate of compliance to the corporation would be inimical to the *common defense and security of the United States* due to the nature and extent of the ownership, control or domination of the Corporation by a foreign corporation or foreign government or any other relevant factors or circumstances" (emphasis added).
>
> The Committee substitute, in section 17(a)(2) includes the "common defense and security" requirement while adding that the NRC may also deny a license or certificate of compliance if doing so would be "inimical to the maintenance of a *reliable and economical domestic source of enrichment services* due to the nature and extent of the ownership, control or domination of the Corporation by a foreign corporation or a foreign government or any other relevant factors or circumstances. This provision was added to guard against the possibility of a foreign uranium enrichment company acquiring the Corporation with the intent of operating it in a manner inconsistent with its maintenance as an ongoing uranium enrichment concern."[4]

The report further states that no certificate or license should be issued:

> if in the opinion of the NRC the issuance of such a license or certificate of compliance would be inimical to the common defense and security of the United States or would be *inimical to the maintenance of a reliable and economical domestic source of enrichment services because of the nature and extent of the ownership, control, or domination of the Corporation by a foreign corporation or a foreign government or any other relevant factors or circumstances. Id.* at 31. (Emphasis added).

The language contained in S.755, to provide for a USEC Privatization Act, was merged into S.1357, a bill to provide for a Balanced Budget Reconciliation Act of 1995 which passed the Senate on October 27, 1995.[5] S.1357 included the language reported out on S.755. On the next day, the Senate then inserted S.1357 into H.R. 2491 which was the House bill for the same budget act.[6]

The House bill also contained language for a section 193(f). Its version provided language addressing common defense and security and foreign ownership and con-

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[1] S. Rpt. 104-173, at 50 (1995) (June 19,1995, Letter from William H. Timbers, Jr. enclosing draft bill).
[2] S. Rpt. 104-173, at 54 (1995)
[3] S. Rpt. 104-173, at 11 (1995).
[4] S. Rpt. 104-173, at 19-20 (1995) (emphasis in original).
[5] 141 Cong. Rec. S16096 (October 27, 1995)
[6] 141 Cong. Rec. S16159 (October 28,1995)

trol, but not language addressing a reliable and economical domestic source of enrichment.[7] The intent of the House bill was to ensure that enrichment activities would be subject to the same foreign ownership limitations as any other nuclear production or utilization facility and that the interpretation of section 193(f) be consistent with interpretations of similar language in sections 103 and 104 of the AEA.[8]

Following the conference on the two bills, the Congress enacted the language that is in the current statute. The Conference report stated that it was adopting the Senate version with minor changes. While a few provisions were discussed, there was no discussion relevant to the section 193 provision.[9] Thus, there is no indication that the language in the conference version of H.R. 2491—separating the concept of a reliable and economical domestic source of enrichment from the common defense and security—was intended to change the intent described in Senate Report 104-173 which was to guard against the possibility of a foreign uranium enrichment company acquiring the Corporation with the intent of operating it in a manner inconsistent with its maintenance as an ongoing uranium enrichment concern.

On December 6, 1995, the President vetoed the Balanced Budget Reconciliation Act of 1995 for reasons unrelated to its enrichment provisions.

Thereafter, on January 26, 1996, Mr. Murkowski submitted a substitute amendment to S.755. In introducing this legislation, he stated that this bill "is virtually identical to USEC privatization language contained in the Budget Reconciliation measure passed earlier by the Senate." As to section 193(f), it contained the same language that the President had earlier vetoed as part of the Balanced Budget Reconciliation Act of 1995. Thereafter, the substitute language of S.755 was incorporated into the legislation that was enacted into the USEC Privatization Act as Public Law 104-134(April 26, 1996). There was no further discussion that addressed section 193(f).In sum, as there were no floor discussions in either the House or Senate pertaining to section 193(f), the only relevant legislative history is contained in Senate Report 104-173. Again, that Report states that:

> This provision was added to guard against the possibility of a foreign uranium enrichment company acquiring the Corporation with the intent of operating it in a manner inconsistent with its maintenance as an ongoing uranium enrichment concern.

Mr. MESERVE. I think that this is a statutory provision that has rather sparse legislative history associated with it. It does make reference to this obligation arising in the context of issuance of certificates, which we would understand might include transfers as well, but that, arguably, does not include license amendments.

I might also add that there is a practical problem for the NRC in this area in that we have limited tools available to us. We have an obligation to assure the safe operation of these facilities and others. The ultimate sanction that we can impose is to require a facility to be brought into safe shutdown condition. It is rather awkward for us, given that obligation to assure safety, to be simultaneously being asked to issue orders to require facilities to remain open. There is a conflict there.

Mr. STRICKLAND. Chairman Meserve——

Mr. BARTON. This will have to be the last comment in this——

Mr. STRICKLAND. Sure. And this is my last comment: I hope the fact that it would have created an awkward situation did not prevent you from doing the right thing. And awkward situation could have occurred, I agree. And then this Congress would have had the responsibility for determining how to deal and resolve that awkward situation. But I don't think it was the responsibility of the

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[7] H.R. 2491 as enrolled by the House on October 27, 1995 contained the following language:

If the privatization of the United States Enrichment Corporation results in the corporation being—

(1) owned, controlled, or dominated by a foreign corporation or a Foreign government, or

(2) otherwise inimical to the common defense or security of the United States, any license held by the Corporation under sections 53 and 63 shall be terminated.

[8] House Report 104-86, at 20 (1995) on H.R. 1216, a bill to establish the USEC Privatization Act, which was incorporated into H.R. 2491.

[9] H. Rpt. 104-350, at 1015 (1995).

NRC to make that judgment. I think that should have been the responsibility of the Congress. Thank you, Mr. Chairman.

Mr. BARTON. Thank the gentleman from Ohio. The Chair would recognize the gentleman from Massachusetts for 5 minutes.

Mr. MARKEY. Let me just find my questions here. Sorry. I can hear the sigh of relief coming from the panel.

Mr. Chairman, Mr. Magwood, if there was a catastrophic nuclear accident in this country, let us say a full core meltdown, breach of containment and massive release of radiation, what are your best estimates of how much such an accident might cost in a major metropolitan area, top 10 size metropolitan area in the United States?

Mr. MESERVE. Of course it would depend on the circumstances of what facility and what area. I think I——

Mr. MARKEY. Indian Point, for example.

Mr. MESERVE. I think I would best provide that sort of information for the record. I don't have that at my fingertips.

Mr. MARKEY. So you don't know that?

Mr. MESERVE. I don't know that answer.

Mr. MARKEY. Okay. Well, I will just tell you that several years ago there was an estimate that if Indian Point had that full core meltdown, it would cost approximately $300 million in New York City area. Under Price-Anderson, how much of the damage would the operator of a nuclear power plant be liable for?

Mr. MESERVE. Well, the way the system operates is that there is $200 million of primary insurance coverage, and then there is a retrospective premium where, per reactor, per accident, all of the utilities would be required to kick in money per plant to the total amount, I think, per accident of $83 million, in increments of $10 million per year. You sum all that up over the 104 power plants, that means that the private sector is providing over $9 billion of coverage.

Mr. MARKEY. So each nuclear power plant would be responsible for approximately how much, each nuclear power plant operator?

Mr. MESERVE. Well, my understanding would be that it would be the amount of the retrospective premium, which is $83 million for each accident, plus whatever the premium is for the first $200 million in coverage.

Mr. MARKEY. Okay. So, essentially, the nuclear power plant operator would not have—that individual would not have a huge financial insurance exposure; is that correct? It would be spread dramatically?

Mr. MESERVE. Well, my understanding of the statutory provision is that if there were a circumstance where more than then $9 billion would be required, the Congress has left open the prospect that it might reach into the pockets of the licensees for additional contributions.

Mr. MARKEY. But the problem is is that the licensees have come to us, because they don't have the resources. And as a result, the taxpayers would—it would be like a hurricane going through Florida. Everyone would have insurance, and then they would come to Congress and say, "Could you please appropriate these emergency funds." And I think that is essentially the case, because, obviously, no individual company would have that.

Mr. BARTON. Would the gentleman yield for a very brief——

Mr. MARKEY. I would be glad to, sure.

Mr. BARTON. Do you know what Three Mile Island cost in terms of insurance?

Mr. MESERVE. I am told that it is $80 million in claims and claims expenses.

Mr. BARTON. Yes. Because that is an actual occurrence. I am told $70 million, so $70 million, $80 million.

Mr. MESERVE. That means they never reached through even the primary insurance layer in that event.

Mr. MARKEY. Thank you very much. I am having a hard time with this, because they are giving us their enthusiastic endorsement of reauthorization of Price-Anderson, but the individual details of how it operates are not available, and we are going to be moving to a markup of the bill, basically, on the day that we get back. So that is troubling to me.

Under the act, how much would the companies that designed and constructed the plant be liable for?

Mr. MESERVE. I believe the way the system operates is that the system is one that provides for the licensees to provide the compensation. But there is, in fact, far more than insurance that is involved in the Price-Anderson Act. It involves a whole procedural system in order——

Mr. MARKEY. But there is no liability for those that constructed it or designed it; is that correct?

Mr. MESERVE. And there are also certain defenses that are waived as well so that there are some trades that are made.

Mr. MARKEY. They are not liable then. So if you build something and it is defective, they are not liable, which there is no other product in American society that is in that category. Who would pick up the rest—Okay. If the new reactor designs are so safe, why do they need limits now on liability on the Price-Anderson? I am hearing testimony that it is really totally safe. Mr. Magwood believes it, and you do. Why do we need to have the Federal Government subsidize the insurance?

Mr. MESERVE. I don't think that anyone can tell you that it is totally safe. The purpose of the regulatory system assures that there is adequate——

Mr. MARKEY. Is it more dangerous than the other electrical generating sources of electricity in the United States?

Mr. MESERVE. That is a complicated question. If one looks at coal, for example, as an alternative, there are risks that are imposed from coal mining.

Mr. MARKEY. But they don't need Federal insurance. Why does the Federal Government have to insure the nuclear industry?

Mr. MESERVE. Well, I mean the history of the nuclear industry has been one that has shown that the plants have been operated safely in the United States——

Mr. MARKEY. Right.

Mr. MESERVE. [continuing] even in the instance of Three Mile Island.

Mr. MARKEY. But, you see, you can't have it both ways. You realize that Mr. Magwood——

Mr. MESERVE. But no one can tell you that there isn't a possibility, one that we believe is very small, that there could be a cata-

strophic accident. So we do need to have a system in place to deal with the eventuality that all of us hope will not happen and which——

Mr. MARKEY. Why can't the market deal with that? Why can't the industry go to the market and get insurance for that?

Mr. MESERVE. Well, I believe you have some people in another panel from the nuclear insurance industry who may be prepared to discuss that. It is my understanding is that given the nature of this sort of risk, that it is something that you need to have the system——

Mr. MARKEY. You are saying the risk is so great that the nuclear industry cannot get insurance, and therefore you enthusiastically recommend to us——

Mr. MESERVE. Well, the risk also would include a consideration of the probability of occurrence. Consequences might be large, but the probability of the occurrence we believe is very small so that we believe the risk is acceptable.

Mr. MARKEY. Well, that is the basis of hurricane or tornado insurance in Massachusetts. The chances are very low of having a tornado in Massachusetts; therefore, the insurance rates for it are very low. Why wouldn't the same thing work for nuclear power if the probability of any occurrence is very low that the rates are very low?

Mr. MESERVE. Well, I think that actually the probability is different. Having lived in Massachusetts, I have had the opportunity to see many hurricanes that have occurred there.

Mr. MARKEY. No, but a tornado.

Mr. MESERVE. Well, my point is that there are a range of probabilities that an event may occur. We believe the probability of a reactor accident is small, but it does exist. And we have tried through regulation to make it as small as possible.

Mr. MARKEY. Let me go to you, Mr. Magwood.

Mr. MESERVE. I think it is very difficult to insure it, given the nature of that risk.

Mr. MARKEY. Let me go to you, Mr. Magwood, for a final question. What about the DOE contractor hauling nuclear waste to Yucca Mountain? Let us say that it gets into a terrible accident as the result of gross negligence or willful misconduct. Under Price-Anderson, he is totally indemnified from liability, isn't he?

Mr. MAGWOOD. That is my understanding, but, again, I am not the Price-Anderson expert, so I won't be able to answer detailed questions about that. But, yes, that is my understanding.

Mr. MARKEY. But do you support reauthorization of Price-Anderson?

Mr. MAGWOOD. Yes.

Mr. MARKEY. Are you here authorized to take that position for the agency?

Mr. MAGWOOD. I am authorized to point you toward our written testimony, which we will submit for the record.

Mr. MARKEY. That would be very helpful. But does that really make any sense that every other industry has to pay for its own insurance to lug the coal or the oil or the gas or everything else across the country, but yet the Federal Government subsidizes the insurance for gross negligence and willful misconduct of the nu-

clear industry, as they are saying that the containers are totally safe and no one has to worry. Why can't they go, again, into the private sector and get insurance?

Mr. MAGWOOD. I would only reiterate what Chairman Meserve, that these are very, very small possible scenarios.

Mr. MARKEY. Right.

Mr. MAGWOOD. But the scenario that you——

Mr. BARTON. This will have to be the gentleman's last question.

Mr. MARKEY. So why doesn't the insurance industry given them insurance if it is a very slight possibility? That is the basis of insurance. It is just basically a——

Mr. MAGWOOD. I think I would probably tend to blame the trial lawyers.

Mr. MARKEY. You would blame the trial lawyers.

Mr. BARTON. The gentleman's time is expired on that note.

Mr. MARKEY. They have no case to bring. They are indemnified, so they can't bring the case.

Mr. BARTON. The gentleman's time is expired.

Mr. MARKEY. Thank you.

Mr. BARTON. We want to thank this panel. We apologize for the tardiness of the start of the hearing. Members will have opportunity to have written questions, and we would hope that if they are presented, that your agencies will expedite the answers, because we are going to begin to be drafting and marking up legislation in the very near future. So you are excused.

Mr. MESERVE. Thank you very much.

Mr. BARTON. Thank you.

Mr. MAGWOOD. Thank you.

Mr. BARTON. We would all now like to hear our second panel. If you will please begin to come forward. Hopefully we have Mr. Marvin Fertel, who is the senior vice president of Business Operations for the Nuclear Energy Institute. We should also have Mr. Jack Skolds, the chief operating officer of Exelon Nuclear Power; Mr. George Davis, with the Westinghouse Company; Mr. Laurence Parme, who is with General Atomics; Dr. Allen Womack, who is the president of BWX; Mr. John Quattrocchi, the senior vice president of Underwriting of the American Nuclear Insurers; and Ms. Anna Aurilio, who is the legislative director of the U.S. Public Interest Research Group. I think we are all here.

Mr. Fertel, we are going to start with you, ask you to summarize in 5 minutes. We will go right down the line, and then we will have some questions. So welcome to the subcommittee.

STATEMENTS OF MARVIN S. FERTEL, SENIOR VICE PRESIDENT, BUSINESS OPERATIONS, NUCLEAR ENERGY INSTITUTE; JACK SKOLDS, CHIEF OPERATING OFFICER, EXELON NUCLEAR; GEORGE A. DAVIS, DIRECTOR, GOVERNMENT PROGRAMS NUCLEAR SYSTEMS, WESTINGHOUSE ELECTRIC COMPANY; LAURENCE L. PARME, MANAGER, NUCLEAR SAFETY AND LICENSING, GENERAL ATOMICS; E. ALLEN WOMACK, PRESIDENT, BWX TECHNOLOGY, INC.; JOHN L. QUATTROCCHI, SENIOR VICE PRESIDENT, UNDERWRITING, AMERICAN NUCLEAR INSURERS; AND ANNA AURILIO, LEGISLATIVE DIRECTOR, U.S. PUBLIC INTEREST RESEARCH GROUP

Mr. FERTEL. Thank you, Mr. Chairman and members of the subcommittee. Thank you for the opportunity to testify on behalf of the nuclear energy industry on both the reauthorization of the Price-Anderson Act and on the future of nuclear energy in the U.S. I would appreciate it if my entire statement could be included in the record.

Mr. BARTON. Without objection, so ordered.

Mr. FERTEL. Let me start with the prospects for new nuclear plants in the United States. Demand for electricity in the United States is growing and will continue to grow in order to support our economy. Recently, the Department of Energy estimated that our Nation will need 393,000 megawatts of additional generating capacity between now and the year 2020, and that assumes a relatively modest growth rate per year.

The Nuclear Energy Institute believes that to meet future electricity demands requires and energy policy that combines conservation and efficiency measures with major investments in generating plants, transmission lines and other infrastructure components like pipelines. We also believe that diversity of fuel type and technology is necessary to ensure reliability, hedge against fuel cost volatility and meet our environmental goals.

Nuclear energy as our Nation's second largest source of electricity and our largest source of electricity that doesn't emit greenhouse gases or any other air pollutants regulated by the Clean Air Act, is already a major factor in meeting our energy needs and in satisfying our environmental goals, and we are committed to doing more in the future.

To satisfy this electricity demand and ensure that nuclear energy is available when needed, the U.S. nuclear industry is implementing a three-part program. First, maintaining the contribution from our existing plants through license renewal. We expect all of our existing plants will pursue license renewal. Second, expanding output from existing nuclear units by continuing improve efficiency and reliability and by investing the capital required to increase the rate of capacity of the units. This program has been so successful to date that over the last 10 years improved efficiency and upgrades at our existing plants has added the equivalent of 22,000 megawatts of new generating capacity to the grid.

Finally, we are moving forward toward construction of new nuclear plants. Just last month, our industry announced the vision 2020 goal of adding 50,000 megawatts of new nuclear capacity by the year 2020. The industry is working together to ensure that new

nuclear plants in the United States will be even safer, more reliable and more cost-efficient than our current plants, which are already setting standards of excellence on all of these fronts.

The industry is pursuing two parallel approaches to deploy new plants. In both paths, we will be looking at building families of standardized plants. On one path, we are looking at deploying the new reactor designs already certified by the NRC or derivatives of those designs. Also, in addition to the three new reactor designs already certified, several companies, as you will hear later from this panel, are developing advanced gas-cooled reactors. These designs would also be standardized and modular in nature, with each module being much smaller than our current reactor size. We expect license applications for new plants will be filed over the next few years.

Leadership support from this committee in the past has been instrumental in establishing a more effective licensing process for new plants. And continued support from the committee will be instrumental in the success to be achieved in the future. Examples of areas where Congress could be helpful include continuation of the Government/industry partnership to pursue resolving technical and/or regulatory issues associated with new nuclear plant designs and validating the new licensing process. We believe there are a number of amendments to the Atomic Energy Act that would modernize its provisions to reflect the new competitive market situation that the industry faces.

Continued progress on implementing the Government's responsibility for waste management, particularly as related to fulfilling its contractual obligations to nuclear generators will be essential. I was pleased to hear that both the chairman and ranking member are committed to taking the Nuclear Waste Fund off-budget. We would certainly fully support that.

Finally, changes to tax laws to allow quicker recovery of capital investment, including such techniques as accelerated depreciation and possibly investment tax credits, may be very helpful.

Let me now turn to Price-Anderson renewal. The Price-Anderson Act is the most comprehensive, effective liability protection law in the world. It has been proved effective for nearly 45 years, and over that period has been renewed 3 times by Congress; in many respects, thanks to the leadership exhibited by members of this committee. The industry fully supports renewal of Price-Anderson Act. The industry also recommends that the law be renewed permanently. In a response to Chairman Tauzin's question, we believe it should be done as soon as possible.

The Price-Anderson Act does support our Nation's program to build new nuclear power plants. The law provides effective, no-fault insurance for the public, it ensures the availability of money for claims immediately in the event of a reactor accident, and it provides congressional authority to provide additional funding for claims if more than the $9.5 billion immediately available from the industry is not sufficient.

Over the 45 years that the Price-Anderson Act has been law, no taxpayer dollars have been paid for Price-Anderson coverage related to the commercial nuclear industry—none. In fact, the Government has received $21 million in payments from the industry

as part of collecting Price-Anderson premiums. And over the entire history of the act, the total payments made by the industry insurance, including those related to the accident at Three Mile Island, is less than $190 million. That is compared to the $9.5 billion that the law requires to be available.

In conclusion, renewal of the Price-Anderson Act is not only required to ensure comprehensive third-party liability protection for the public, but as you will hear later from other members of the panel, it is absolutely essential to ensure that the Government will be able to effectively retain contractors to work at Department of Energy facilities.

I thank you for the opportunity to testify today and look forward to answering your questions. Thank you.

[The prepared statement of Marvin S. Fertel follows:]

PREPARED STATEMENT OF MARVIN S. FERTEL, SENIOR VICE PRESIDENT, BUSINESS OPERATIONS, NUCLEAR ENERGY INSTITUTE

Mr. Chairman, members of the subcommittee, I am Marvin Fertel, Senior Vice President of the Nuclear Energy Institute. I am pleased to have this opportunity to testify on the prospects for nuclear energy in the United States, and the policy initiatives necessary to ensure that our nation derives the greatest possible benefit from nuclear energy. Those policy initiatives include renewal of the Price-Anderson Act, and federal government support for nuclear energy research and development (R&D).

The Nuclear Energy Institute (NEI) is the U.S. nuclear energy industry's Washington-based policy organization. NEI represents 270 members with a broad spectrum of interests, including every U.S. electric company that operates a nuclear power plant. NEI's membership also includes nuclear fuel cycle companies, suppliers, engineering and consulting firms, national research laboratories, manufacturers of radiopharmaceuticals, universities, law firms and labor unions.

The nuclear energy industry commends you, Mr. Chairman, and the members of this subcommittee, for devoting this hearing to a discussion of the value of nuclear energy. Today, America's 103 nuclear power plants are the safest, most efficient and most reliable in the world. Nuclear energy is the second largest source of electricity in the United States, and the nation's largest source of emission-free electricity generation. The industry last year reached record levels of safety, reliability, efficiency and output.. In our view, increasing nuclear energy's contribution to U.S. electricity supply is not an option. It is essential to sustain economic growth, meet the electricity needs of our growing population, and satisfy our nation's clean air and environmental goals.

THE OUTLOOK FOR NEW NUCLEAR POWER PLANTS

Demand for electricity in the United States is growing rapidly. The Department of Energy's Energy Information Administration estimates that our nation will need an additional 393,000 megawatts of additional generating capacity between now and 2020, assuming average growth in electricity demand of 1.8 percent per year. At 2.5 percent annual growth, which is closer to the growth rates experienced during the 1990s, the United States will require an additional 564,000 megawatts to meet new electricity demand and replace aging power plants that have reached the end of their useful life.

To satisfy this electricity demand, and ensure that nuclear energy is available when needed, the U.S. nuclear industry is implementing a three-part program:

1. maintaining the contribution from its existing plants through license renewal;
2. expanding the output from the existing nuclear units by continuing to improve efficiency and reliability, and by investing the capital required to increase the rated capacity of the units; and
3. laying the groundwork for construction of new nuclear plants.

The nation's largest nuclear generating companies, working with NEI, are implementing a broad-based plan to create the business conditions necessary for construction of new nuclear power plants. The plan includes: (1) a number of initiatives to reduce the initial capital cost of new nuclear power plants; (2) programs to create a stable licensing regime and reduce regulatory uncertainties, and (3) a series of ini-

tiatives to build support for new nuclear power plants among policymakers, the media and local communities around prospective sites for new nuclear power plants.

The companies intent on starting construction of new nuclear power plants in the United States within the next five years are doing so because new nuclear capacity represents a solid business opportunity. For an electricity generating company, new nuclear power capacity represents:

1. a reliable source of electricity with low "going-forward" or "dispatch" costs;
2. a high level of forward price stability and protection against the fuel price volatility that impacts gas-fired power plants; and
3. protection against possible escalation in environmental requirements imposed on fossil-fueled power plants. For companies already operating coal-fired or gas-fired power plants, new nuclear capacity reduces the cost of clean air compliance that might otherwise be imposed on that coal- and gas-fired capacity.

The 1992 Energy Policy Act, enacted during the first Bush Administration, completely overhauled the licensing process for new nuclear plants so that all design, safety and site-related issues are resolved before capital is invested. The chairman of this subcommittee, Mr. Barton of Texas, was a principal author of this major improvement to the licensing process. The new approach allows NRC (1) to evaluate and pre-approve a prospective site for a new nuclear plant; (2) to issue a single license to construct and operate a new nuclear plant if a company uses a certified design and a pre-approved site; and (3) to "certify" a standardized design. Certification is a formal rulemaking process. It requires a substantial up-front investment to prepare a reactor design—complete and detailed enough to satisfy the NRC that it meets all necessary safety standards.

Three reactor designs—a 1,300-megawatt advanced boiling water reactor, a 1,300-megawatt pressurized water reactor, and a 600-megawatt pressurized water reactor—have been certified by the NRC. Several of these designs have already been deployed overseas, which testifies to the fact that U.S. nuclear technology remains at the leading edge worldwide. Japan has already built two advanced boiling water reactors, and will build more. Taiwan is building two advanced boiling water reactors. And South Korea is building variants of the large pressurized water reactor.

The U.S. nuclear industry is pursuing two parallel approaches to new nuclear power plants:

1. Preparing to deploy one of the three new reactor designs already certified by the NRC, or derivatives of those designs. This initiative includes a systematic program to reduce the initial capital cost of these new designs—through improved construction techniques, faster construction schedules, innovative approaches to project structure or, in the case of one of the three designs, increasing the power output from 600 megawatts to 1,000 megawatts.
2. In addition to the three new reactor designs already certified, several companies are developing advanced gas-cooled reactors, including an international consortium—that includes Exelon and British Nuclear Fuels, the parent of Westinghouse—which is looking at a smaller, modular reactor for deployment in the United States. Exelon has launched an aggressive program to commercialize this 110-megawatt modular reactor. The project is still in the feasibility stage, but Exelon is proceeding on the assumption that economic and technical feasibility will be established, and is developing a strategy that will lead to the first U.S. order, license application, and construction.

The industry is committed to validating both the economic performance of the new plants, and the licensing process for them. Over the next year, for example, a group of companies will begin a program, coordinated through the Nuclear Energy Institute, to address a number of generic issues associated with the concept of early site approval, ultimately leading to a formal application to the NRC to approve one or more sites.

The U.S. nuclear energy industry estimates that new nuclear power plants could be built in the United States for between $1,000 and $1,200 per kilowatt of capacity. At this capital cost[1] of $1,000-1,200 per kilowatt of capacity, new nuclear power units are fully competitive with the other alternatives for baseload electricity production.

The alternatives to new nuclear plants include:

1. Conventional coal-fired power plants with a full suite of environmental controls. Largely because of the significant increase in the cost of natural gas,

[1] To ensure a common basis for comparison, the capital costs of electric generating technologies are expressed in dollars per kilowatt of capacity. The capital costs used in such comparisons are so-called "overnight" capital costs—i.e., they assume the plant is built "overnight" and thus do not include interest charges and financing costs.

which has increased the cost of electricity from gas-fired power plants, a growing number of new coal-fired projects are being proposed. These conventional coal-fired plants typically have capital costs in the range of $1,000-1,100 per kilowatt of capacity.

2. **The so-called "clean coal" technologies,** which have capital costs in the range of $1,200-1,500 per kilowatt of capacity. Over time, as more of these atmospheric fluidized bed plants are built, the technology developers expect to be able to reduce the capital cost. Their current target is $1,000-1,200 per kilowatt.

   Other "clean coal" technologies have higher capital costs than atmospheric fluidized bed combustion. An integrated gasification combined cycle (IGCC)[2] plant currently has a capital cost of approximately $1,800 per kilowatt for the first plants built, according to estimates from the technology developers and data from the Department of Energy's clean coal technology program. The technology developers hope to reduce this capital cost to $1,200-1,500 as the technology matures and more of these plants are built.

3. **Combined-cycle gas-fired power plants,** which have capital costs in the range of $600-700 per kilowatt of capacity. Unlike the nuclear and coal-fired technologies, however, gas-fired power plants are extremely sensitive to fuel prices. Economic analysis shows that a new nuclear unit at $1,000 per kilowatt of capacity is competitive with a new gas-fired combined cycle plant fueled with gas at $4-5 per million Btu. (Although wellhead gas prices in the spot market have slumped below $4 per million Btu in recent weeks, the cost of gas delivered to electricity generators remains well above $5 per million Btu in all major consuming regions of the United States except California. In California, delivered prices for natural gas are considerably higher, in the $10-15 per million Btu range.)

Like renewable energy, conventional coal-fired power plants and advanced "clean coal" technologies, nuclear power is a capital-intensive technology. Large new nuclear power plants—of the 1,000-megawatt[3] size now operating—would cost approximately $1 billion each, and would thus represent a substantial investment risk for the company or companies that build them.

Private companies would only undertake investments of this size if they were convinced that new nuclear power plants, once built, would be competitive with other sources of electricity. Given the significant public policy benefits of nuclear energy, however, limited policy initiatives are appropriate for new nuclear power plants to stimulate companies to invest in new nuclear plants sooner and in larger numbers than they otherwise would; and to reduce the investment risk associated with construction of new nuclear power plants.

The policy initiatives necessary to stimulate construction of new nuclear generating capacity include:

1. Creation of a government/industry partnership to pursue two short-term objectives: resolving technical and/or economic issues associated with the new nuclear plant designs, and validating the new licensing process—verifying that it works as intended and will not place private sector investment at risk. This initiative will require a modest additional federal investment in nuclear energy research and development.
2. Changes to the tax laws to reduce the investment risk associated with new nuclear plant construction and to allow quicker recovery of capital investment, including such techniques as accelerated depreciation and an investment tax credit.

RENEWAL OF THE PRICE-ANDERSON ACT

Congress should renew the Price-Anderson Act as soon as possible, and it should provide an indefinite renewal. Price-Anderson is a proven framework that has worked for nearly 45 years. Given this proven record, Congress should renew it indefinitely. If needed, Congress can re-open the law at any time if modifications are needed. In addition, Congress can request periodic updates on the status of Price-Anderson Act implementation from the NRC in order to provide a basis for change if necessary.

The Price-Anderson Act of 1957, signed into law as an amendment to the Atomic Energy Act, provides for payment of public liability claims related to any nuclear incident. In its 1998 report to Congress, the Nuclear Regulatory Commission said that the Price-Anderson Act has "proven to be a remarkably successful piece of leg-

[2] Integrated gasification combined cycle is a multi-step process in which coal is gasified, and the resulting fuel gas is used to fire a conventional combined-cycle power plant.

[3] A 1,000-megawatt power plant will serve the needs of approximately 650,000 households.

islation" that has grown in depth of coverage and that proved its viability in the aftermath of the Three Mile Island accident.

Since the inception of the Price-Anderson Act, the law has been extended three times for successive 10-year periods, and in 1988 it was extended for 15 years. Unless Congress renews the Price-Anderson Act, it will expire on Aug 1, 2002.

The Price-Anderson Act is a proven law that works in these important ways:

- Assures the availability of billions of dollars to compensate affected individuals who suffer a loss as a result of a nuclear incident.
- Establishes a simplified claim process for the public to expedite recovery of losses.
- Provides for immediate emergency reimbursement for costs associated with any evacuation of residents near a nuclear power plant.
- Establishes two tiers of liability for each nuclear incident involving commercial nuclear energy and provides a guarantee that the federal government will review the need for compensation beyond that explicitly required by law. The Price-Anderson framework provides $9.5 billion of coverage in the two levels of protection.

For the primary level, the law requires nuclear power plant operators to buy nuclear liability insurance available or provide for an equal amount of financial protection. That amount of insurance is $200 million.

For the second level, power plant operators are assessed up to $88 million for each accident that exceeds the primary level at a rate not to exceed $10 million per year, per reactor for a total of $9.3 billion. The NRC increases the level for inflation every five years. An important feature of the law is that it spreads the liability for a major accident across the entire industry. In addition, Congress may establish more assessments if the first two levels of coverage are not adequate to cover claims. The Price-Anderson Act framework provides the same level of liability for DOE facilities as for the commercial sector.

Research or small power reactors are required to self-insure at least the first $250,000 of any nuclear incident. The federal government also provides up to $500 million of indemnity. At present, there are no small power reactors in operation that qualify for this coverage. But the groundwork is being laid to design power reactors that would be smaller, safer and more cost effective to build. That very extensive research and development would be jeopardized if the Price-Anderson Act is not renewed expeditiously.

The costs of Price-Anderson coverage are included in the cost of electricity, they are not a taxpayer expense or federal subsidy. That means the nuclear industry bears the cost of insurance, unlike the corresponding costs of some major power alternatives. For example, risks from hydropower (dam failure and flooding) are borne directly by the public. The 1977 failure of the Teton Dam in Idaho caused $500 million in property damage. The only compensation for this event was about $200 million in low-cost government loans.

In addition to the approximately $180 million paid in claims by the insurance pools since the Price-Anderson Act went into effect, the law has resulted in payment of $21 million back to the government in indemnity fees.

The NRC and DOE has recommended renewal of the Price-Anderson Act to Congress. The NRC, in its 1998 report, describes the benefits the law provides to the public. The agency says that "the structured payment system created to meet the two objectives stated in the Price-Anderson Act has been successful. The Commission believes that in view of the strong public policy benefits in ensuring the prompt availability and equitable distribution of funds to pay public liability claims, the Price-Anderson Act should be extended to cover future as well as existing nuclear power plants.

The Department of Energy in 1999 has also recommended renewal of the law. The Energy Department said that its indemnification "should be continued without any substantial change because it is essential to DOE's ability to fulfill its statutory missions involving defense, national security and other nuclear activities . . ."

The Price-Anderson Act has withstood court challenges dating back to 1973 when the Carolina Environmental Study Group, the Catawba Central Labor Union and 40 individuals brought suit against Duke Power Co., which was building nuclear power plants in North and South Carolina.

In June 1978, the U.S. Supreme Court upheld the constitutionality of the law. In an opinion written by Chief Justice Warren Burger, the court held that because the liability limit was created to encourage private sector construction of nuclear power plants it was neither arbitrary nor irrational.The industry recommends an indefinite renewal of the Price-Anderson Act. Like any other legislation, if Congress wants to reconsider and amend the law it can do so at anytime. We would encourage Congress to hold periodic oversight hearings and, if required, modify the law accordingly.

The industry believes that the retrospective premium should remain at $10 million per nuclear plant. The NRC initially recommended it be increased to $20 million, based in part on the assumption that 25 nuclear plants would be closed without relicensing, and that total insurance coverage would decrease as a result. However, most nuclear plants will be relicensed. NRC Chairman Richard Meserve, in a May 11, 2001 letter to members of Congress, retracted this recommendation based on the number of plants seeking license renewal. The NRC no longer believes that the increase in the retrospective premium to $20 million is necessary.

OTHER FEDERAL GOVERNMENT POLICY SUPPORT FOR NEW NUCLEAR PLANT CONSTRUCTION

In addition to renewal of the Price-Anderson Act, the nuclear industry has identified several areas where continuing, sustained federal government policy support would assist the construction of new nuclear power plants. These areas include:

Nuclear Energy R&D. As noted above, the industry believes it would be appropriate to create a government/industry partnership to share the modest cost of resolving remaining technical or economic issues, and to validate the new licensing process for new nuclear plants. An expert working group assembled by the U.S. Department of Energy to advise the agency on actions necessary for near-term deployment of new nuclear power plants believes that validating the new licensing process, and other similar pre-commercial activities, will require approximately $36 million in the 2002 fiscal year, and an estimated $47 million in FY 2003.

It is appropriate for the federal government to bear part of the cost of these programs for two reasons. First, these are generic, pre-commercial activities that provide no financial return to private industry. And second, these pre-commercial programs are designed to assure that federal government regulations work as intended and will not place private industry investment at risk.

It is equally crucial that industry and the federal government continue to invest in nuclear technology research and development for the United States to remain the world leader in nuclear technology. This includes continuing support for the Department of Energy's existing nuclear energy R&D programs, in line with the funding levels recommended by the President's Committee on Advisors on Science and Technology (PCAST), and the Secretary of Energy's Nuclear Research Advisory Committee.

Continued Progress in Waste Management. Expansion of nuclear energy's contribution to U.S. electricity supply also requires continued progress in the federal government's program to manage used nuclear fuel, and to develop storage and disposal facilities for that fuel. This includes adherence to programmatic milestones, including the Secretary of Energy's site suitability determination scheduled for later this year, and a Presidential determination as soon after that as possible.

Amendments to the Atomic Energy Act. The nuclear industry also believes the time has come to update the Atomic Energy Act so that the NRC is positioned to meet the challenges of the 21st century. This would include:

1. removing the statutory requirement that NRC conduct antitrust reviews of of applications to build new nuclear plants;
2. removing the statutory prohibition on foreign ownership of U.S. commercial nuclear power planbts; and
3. revising the Atomic Energy Act to ensure that small, modular nuclear reactors are not subjected to excessive levels of liability under the Price-Anderson Act's secondary protection scheme.

CONCLUSION

The industry clearly understands what must be done to preserve nuclear energy's emission-free contribution to the nation's electricity supply.

Nuclear energy is the only large source of electricity that is both emission-free and readily expandable. Its exemplary safety record, high reliability, low operating costs and price stability make nuclear energy a vital fuel for the future. That is clear from the current U.S. electricity situation, which is marked by thinning capacity margins as demand outruns available supply, and by punishing volatility both in electricity prices and the price of natural gas used to generate electricity.

As electricity demand continues to rise, nuclear energy will be even more important to American consumers.

Thank you for giving me this opportunity to share the industry's perspective on the important nuclear energy issues the subcommittee is focusing on in this hearing.

Mr. LARGENT [presiding]. Thank you, Mr. Fertel.

Mr. Jack Skolds, chief operating officer from Exelon Nuclear. You have 5 minutes to summarize your statement.

STATEMENT OF JACK SKOLDS

Mr. SKOLDS. Thank you, Mr. Chairman and members of the subcommittee, for the opportunity to be here today.

As Exelon examines our future sources of generation, we judge potential projects on two sets of criteria: First, the technology must be safe, economic and clean; and second, there must be a stable and predictable regulatory environment which will make the projects acceptable to the investment community.

We believe we have found the technology that meets the first set of criteria in the Pebble Bed Modular Reactor, the PBMR. Exelon is a partner in a multi-national effort underway in South Africa to develop the technology, which is a gas-cooled 110 to 125 megawatt reactor that is an evolution of an earlier technology. However, we believe that despite the tremendous advances made by the NRC in recent years, there are a number of regulatory and legislative changes needed at the Federal level to meet the second criteria: a stable and predictable regulatory environment.

These changes generally fall into one of two categories: Changes necessitated by the changed nature of the electric industry in the United States, and changes required as a result of the PBMR's design differences from traditional reactors.

Now, on the first set of changes, the electric industry has changed. If Exelon builds a PBMR, it will be what is known as a merchant nuclear plant that will not depend on a regulated utility rate structure. The financial risk of the plant will rest on Exelon and our shareholders, not on the ratepayers. And as a result of the dramatic changes in which the utilities and power plant owners are regulated at the State and Federal level, many laws and regulations related to the oversight of nuclear power plants are plainly outdated. Current NRC regulations were promulgated when it was anticipated that only regulated electric utilities would build nuclear plants.

If these outdated regulations are not changed, the financial burden imposed on merchant plants, like the PBMR, clearly has the potential to make the economics untenable. Some of the key regulations that need to be addressed include the financial protection requirements of 10 CFR Part 140, the decommissioning funding requirements of 10 CFR Part 50.75 and the antitrust review requirements of 10 CFR Part 50.33(a).

My written statement includes a more complete explanation of each of these issues. And most of the changes we are seeking are to remove duplicative regulatory requirements and to assure that merchant plants with financially responsible owners are treated similarly to utility-owned plants.

Now concerning the PBMR and the changes necessitated by this design, the PBMR is a small, modular reactor that produces roughly one-tenth of the power of a conventional 1,100 megawatt light water reactor, and the technology is designed so that 10 modules can be operated from a single control room. Small modular plants were not contemplated when the current regulations were put in place. The financial burden imposed on small, modular plants by

existing regulations has the potential to make the PBMR uneconomic.

The primary issue is whether the NRC will issue a separate license for each 110 to 125 megawatt PBMR module or whether the Commission will issue a single license for a multiple-module site. A number of related issues flow from this central question: The assessment of annual NRC fees on a per reactor basis, the treatment of modular facilities for purposes of retroactive liability assessment under Price-Anderson and staffing requirements under 50.54(m).

The annual fees assessed by the NRC on a per reactor basis should be revised to recognize the differences between the small, modular PBMR and a much larger light water reactor. The resources required to regulate a PBMR module are significantly less than those of a large reactor. Similarly, Price-Anderson should be interpreted such that the PBMR are treated in a manner that recognizes the inequity of treating individual PBMR modules as separate facilities. The NRC is currently examining whether such an interpretation is possible or whether the Price-Anderson Act will need to be amended in order to accomplish that goal. We will keep the subcommittee members advised as our dialog with the Commission progresses on this issue.

A final area that is unrelated to the small, modular nature of the PBMR is the issue of emergency planning zone requirements in 10 CFR Part 50.47. Exelon believes that the fundamental safety differences between a PBMR and current reactors may justify a smaller emergency planning zone for Pebble Bed Reactor sites. Mr. Chairman, I would note that Exelon has filed White Papers on many of these issues with the Nuclear Regulatory Commission, and we would be happy to share those with the committee upon request.

In conclusion, let me touch on a few final issues that are not technology-specific. If new nuclear plants are to be built in the U.S., the Federal Government must address these additional issues: First, as you have heard from other witnesses, we must renew Price-Anderson; second, Congress and the administration must take steps to assure the existence of a competitive nuclear fuel market; and finally, the administration should move forward expeditiously with Yucca Mountain as a permanent repository for used nuclear fuel.

Mr. Chairman, thank you again for the opportunity, and I look forward to any questions.

[The prepared statement of Jack Skolds follows:]

PREPARED STATEMENT OF JACK SKOLDS, CHIEF OPERATING OFFICER, EXELON NUCLEAR

Mr. Chairman, Members of the Subcommittee: Thank you for the opportunity to appear before you today to discuss policy issues related to the licensing of advanced nuclear power plants in the United States. I am Jack Skolds, Chief Operating Officer of Exelon Nuclear, the nuclear division of Exelon Generation Company. Exelon is the largest nuclear generation operator in the country with approximately 20% of the nation's nuclear generation capacity, and the third largest private nuclear operator in the world.

As Exelon examines future sources of generation, we judge potential projects on two sets of criteria: first, the technology must be safe, economic, and clean; and second, there must be a stable and predictable regulatory environment that will make the project acceptable to the investment community.

Exelon believes that we have found a technology that meets the first set of criteria in the Pebble Bed Modular Reactor, also called the PBMR. Exelon is a partner in a multi-national effort underway in South Africa to develop the technology, which is a gas-cooled 110 to 125 megawatt reactor that is an evolution of an earlier technology built and operated in Germany.

However, Exelon believes that—despite the tremendous advances made by the Nuclear Regulatory Commission in recent years—there are a number of regulatory and legislative changes needed at the Federal level to meet the second criteria: a stable and predictable regulatory environment that will make the project acceptable to the investment community.

Why are changes necessary? Simply put, the current regulatory and legislative structure governing nuclear power plants is obsolete, neither reflecting the realities of the markets in which new plants will operate nor accommodating the emergence of advanced technologies.

My testimony today will address several changes I believe are necessary to ensure an acceptable regulatory environment. These changes generally fall into one of two categories: (1) changes necessitated by the changed nature of the energy industry in the United States; and (2) changes required as a result of the PBMR's design differences from traditional reactors. We believe that the Nuclear Regulatory Commission (NRC) has sufficient flexibility under existing law to address many—if not all—of these issues through rulemakings.

Changes Necessitated by the Changed Nature of the Energy Industry

The energy industry and the regulatory environment in which energy companies operate today are fundamentally different than just a few years ago. The deregulation of wholesale power markets sparked by enactment of the Energy Policy Act of 1992, along with retail deregulation in some states, has led to the creation of hundreds of generation companies operating outside the traditional cost-of-service regulatory arena. If Exelon builds a PBMR, it will be what is known as a "merchant" power plant that will not depend on a regulated utility rate structure. The financial risk of the plant will rest on Exelon and our shareholders, not on ratepayers.

As a result of the dramatic changes in the way that utilities and power plant owners are regulated at the state and Federal level, many laws and regulations related to the oversight of nuclear power plants are plainly outdated. Current NRC regulations were promulgated when it was anticipated that only regulated electric utilities would build nuclear plants.

If these outdated regulations are not changed, the financial burden imposed on merchant plants clearly has the potential to make the economics untenable. Some of the key regulations that need to be addressed include the financial protection requirements of 10 CFR Part 140, the decommissioning funding requirements of 10 CFR Part 50.75, and the antitrust review requirements of 10 CFR Part 50.33a.

Most of the changes we are seeking are to remove duplicative regulatory requirements and to assure that merchant plants with financially responsible owners are treated similarly to utility-owned plants.

Financial Protection

Current NRC financial protection regulations require an applicant for a license to provide information on its financial qualifications to build and operate a reactor. While electric utilities are exempt from this requirement, merchant plant owners would be required to submit financial qualification data for each plant they seek to build. Exelon has recommended that the NRC initiate a rulemaking to revise its financial qualification regulations to enable certain categories of merchant generating companies to have the same status as utilities to avoid duplicative reviews for subsequent applications. The NRC should initiate rulemaking to establish specific criteria that would enable non-utilities to demonstrate financial qualification without providing the detailed information currently required by NRC regulations and guidance each time a license application is submitted.

Decommissioning

10 CFR § 50.75 requires licensees to establish financial assurance for decommissioning and provides six methods for providing financial assurance. These methods include prepayment, an external sinking fund, surety, insurance, or other "equivalent" method. However, the regulations essentially restrict use of external sinking funds to licensees that recover decommissioning funds through rates or a non-bypassable charge. While this system works well for utilities operating in a regulated cost-of-service market, it fails to accommodate merchant plants selling into the wholesale power market.

Exelon is evaluating the possibility of seeking NRC approval for an alternative decommissioning funding mechanism in which Exelon would make partial prepay-

ment (5%, for example) of the total decommissioning cost estimate and annual contributions for the remainder spread over 20 years. Such a mechanism would substantially reduce the initial costs associated with the PBMR while still providing assurance of funds for decommissioning at the time a module is likely to be decommissioned. NRC should initiate rulemaking to explicitly authorize the use of this and other alternative decommissioning funding methods being developed by the industry.

If NRC were to require 100% prepayment of the decommissioning cost estimate for new plants, such prepayment might jeopardize the economic viability of any new plant that is to be operated on a merchant basis.

Antitrust

Section 105 of the Atomic Energy Act (AEA) requires that the NRC conduct an antitrust review, seek the advice of the Attorney General, and if necessary conduct a hearing on antitrust matters in connection with applications for a construction permit (CP) or combined operating license (COL) for a nuclear power reactor. As the NRC has noted in previous recommendations to the Congress, these antitrust requirements are duplicative and burdensome. The Department of Justice, the Federal Trade Commission, and—in the case of merchant power plants—the Federal Energy Regulatory Commission, each have jurisdiction over antitrust laws. The NRC has recommended that the Atomic Energy Act be amended to delete these antitrust provisions.

Exelon believes that, at the very least, the NRC should initiate a proceeding, and seek the approval of the Attorney General, to determine that the issuance of licenses to merchant plant applicants will not significantly affect such applicants' activities under the antitrust laws. NRC should make a determination that merchant plant applicants are excepted from antitrust review. The rule should state that an applicant need only provide information sufficient for the NRC to make a determination as to whether the applicant qualifies as a member of the excepted class. This model is consistent with the approach pursued by NRC when it made its determination that it would not conduct antitrust reviews in connection with license transfers.

The antitrust review provisions of Section—105 have limited applicability to the modern electric industry, and they serve no useful purpose with respect to proposed operation of a nuclear reactor on a merchant plant basis. Changes in the electric industry—including the emergence of a competitive wholesale electric market and mandated open access to the transmission system—reduce, if not eliminate, the incremental protection of competition that the NRC provides through its antitrust review for license applications for merchant plants.

Changes Necessitated by the Nature of the PBMR Design

The second category of changes results from the fact that the PBMR is fundamentally different both from the current fleet of light water reactors and from the advanced designs that have been certified by the NRC in recent years. The PBMR is a small, modular reactor that produces roughly one-tenth of the power of a conventional 1,100 megawatt light water reactor, and the technology is designed so that up to 10 modules can be operated from a single control room.

Small modular plants were not contemplated when current regulations were put in place. The financial burden imposed on small, modular plants by existing regulations has the potential to make the economics of the PBMR untenable. The primary issue is whether the NRC will consider each 110 to 125 megawatt PBMR module as an individual reactor or facility or whether the Commission will treat a multiple-module site as a single facility for licensing purposes.

A number of related issues flow from this central question: the assessment of annual NRC fees on a per reactor basis under 10 CFR 171, the treatment of modular facilities for purposes of retroactive liability assessments under the Price-Anderson Act, and staffing requirements under 10 CFR § 50.54(m).

Annual Fees

The annual fees assessed by the NRC on a per reactor basis should be revised to recognize the differences between a small, modular PBMR and a much larger light water reactor. The resources required to regulate a PBMR module are significantly less than those required to oversee a larger, more complex light water reactor.

Price-Anderson Act

Similarly, the Price-Anderson Act should be interpreted so that Pebble Bed Modular Reactors are treated in a manner that recognizes the inequity of treating individual PBMR modules as separate facilities. The NRC is currently examining

whether such an interpretation is possible or whether the Price-Anderson Act will need to be amended in order to accomplish that goal. We will keep the subcommittee members advised as our dialogue with the Commission progresses on this issue. Under the current NRC interpretation of Price-Anderson, a 10-module, 1,100 megawatt PBMR site would have 10 times the potential retroactive liability of a single 1,100 megawatt light water reactor. Treating each PBMR module as an individual reactor would result in an unfair economic burden which would significantly hamper the economics of the technology.

Staffing Requirements

In addition, existing NRC regulations specify minimum licensed operator staffing requirements. In general, the formula used to develop the staffing levels and the requirements on the location of operators are excessive for PBMRs. These requirements were developed when all operating nuclear power plants relied on active safety systems to mitigate accidents. The Pebble Bed technology relies on a ceramic fuel design that cannot suffer meltdown. In the PBMR, the reactor temperature never rises above 1600 degrees Celsius, even under a worst-case loss of coolant accident. PBMR fuel, however, does not begin to degrade until temperatures reach 2000 degrees Celsius.

Since the PBMR is a passive plant that does not require early operator intervention to mitigate accidents, staffing levels less than those indicated in existing regulations are appropriate for the PBMR. The Commission itself has recognized that an exemption from the staffing requirements may be warranted to provide for "reduced staffing levels based on plant size, lack of complexity, or other unique factors."

Emergency Planning Zones

A final area that is unrelated to the small, modular nature of the PBMR is the issue of the emergency planning zone (EPZ) requirements in 10 CFR Part 50.47. Exelon believes that the fundamental safety differences between a PBMR and current reactors may justify a smaller emergency planning zone for Pebble Bed reactor sites. Again, since the PBMR uses a ceramic fuel design that cannot suffer meltdown, the NRC should consider whether a smaller EPZ is merited.

Exelon has presented White Papers on many of these issues to the Nuclear Regulatory Commission, and they are publicly available.

Transition Issues Facing New Nuclear Plants

The licensing process which Exelon proposes to follow under 10 CFR Part 52 to obtain a combined construction and operating license for these plants has never been utilized. As a result, we expect that there will be a steep learning curve for both the NRC staff and ourselves on how to execute this process with resultant high costs and delays. Exelon is working with the NRC staff to develop the technical licensing framework for the PBMR. Existing regulations are written for light water reactors, and regulations will need to be developed for gas reactors, also at additional costs and potential delay.

Exelon believes strongly that the development of the design and the cost to commercialize and build the PBMR should be borne by the PBMR partners. We anticipate that the partners will invest upwards of $600 million of their own money to make the PBMR commercially viable with Exelon investing a significant additional amount to license and build the first PBMRs. There are, however, a number of first of a kind costs that Exelon will bear as the first licensee for this new technology that will flow directly to government agencies such as the NRC in the form of licensing fees and the national laboratories as consultants to the NRC. As stated earlier, we expect that the costs of licensing this technology will be higher than normal because of the unproven nature of the 10 CFR Part 52 licensing process and the need to create a gas reactor licensing framework. The technical expertise needed to review the PBMR application does not currently exist either in the NRC or in the national labs and will need to be developed. We believe it is appropriate for some level of government funding to be provided to fund the work of government agencies in these areas.

Generic Issues Related to New Nuclear Plants

In concluding, let me touch on a few final issues that are not technology-specific. If new nuclear plants are to be built in the U.S., the Federal government must address three additional issues:

First, Congress must renew the Price-Anderson Act, which will expire in August 2002. The Act represents a carefully balanced mechanism for providing a comprehensive liability scheme for nuclear activities while ensuring the prompt payment of claims for nuclear incidents.

Second, Congress and the Administration must take steps to assure the existence of a competitive nuclear fuel market. One of the primary benefits of nuclear power is the low, stable cost of nuclear fuel. There are a number of pending developments that could jeopardize a competitive market for this material, including trade actions filed by USEC against enrichment service providers from Europe.

Finally, the Administration should move forward expeditiously with its investigation of Yucca Mountain as a permanent deep-geologic repository for used nuclear fuel. Congress should support the continued characterization of Yucca Mountain by fully funding the Administration's budget request. As members of this committee are well aware, the Federal government is woefully behind schedule on this project despite having spent billions of dollars collected from utility customers.

Mr. Chairman, thank you again for the opportunity to appear before the committee. I look forward to any questions you may have.

Mr. LARGENT. Thank you, Mr. Skolds.

Now we recognize Mr. George Davis, director of Government Programs Nuclear Systems with Westinghouse. Thank you, Mr. Davis, for being here.

STATEMENT OF GEORGE A. DAVIS

Mr. DAVIS. Well, thank you, Mr. Chairman, and I appreciate the opportunity to be here today. I am also currently participating in DOE's Near Term Deployment Group, which is a topic I want to talk about in just a moment.

The recent volatility we have seen in natural gas prices nationwide and certainly the electric power shortages we have seen in California have been a real wake-up call for power companies all over the country. And they are beginning to realize they can no longer continue to rely exclusively on natural gas as the only source of new power plant generating capacity. Nor can they ignore the erosion of power reserve margins.

When you look at economic competitors to natural gas plants, the only two energy sources likely to be deployable in the near-term on a large scale are going to be coal and nuclear. However, when you compare against coal and nuclear burning plants—coal and gas burning plants, nuclear plants face a significant hurdle, because they have to go through the NRC licensing process before they can be introduced into the marketplace.

Now despite the dramatic improvements that we have seen at the NRC in recent years, there is still a significant cost and uncertainty associated with going through that licensing process for new plants. The Commission has certified three standardized designs in the 1990's; however, the early site permit and combined operating licenses processes are still untested.

Now, one of the standardized designs is already certified is our AP600. It is ready for the marketplace today, and it has an estimated construction cost of about $1,400 per kilowatt electric. Now, this would be competitive in today's U.S. market as long as electricity prices remained about where they are, with generating costs on the average of about 5 cents per kilowatt hour. However, if electricity prices should decline back to the levels we saw just a couple of years ago before gas prices went up, then we would need a lower cost alternative that is likely to be in the 3 cents to 4 cents per kilowatt hour range.

Therefore, we began developing changes to the AP600 design to upgrade its power level from 610 megawatts all the way up to 1,090. We found we could increase the size of the major compo-

nents without necessarily increasing the footprint of the plant, therefore keeping the design changes to a minimum. The end result is that we can increase the power rating about 75 percent while only increasing the capital cost about 13 percent. This brings down the construction cost to less than $1,000 per kilowatt electric, which would make us very competitive, even if electricity prices do come back down to the 1999 levels.

We are currently in a pre-application phase with the NRC, and if all goes as expected, we would hope to submit a complete application early next year and have the changes, or this new AP1000 design, certified by 2004.

Now, this year, DOE also launched an initiative called the Technology Road Map for Generation IV reactors. They set up working groups comprised of representatives from industry, labs and academia that are carrying out this initiative under the guidance of an advisory committee called NURAC. And I am participating in one of those groups, the Near-Term Deployment Group. Our task is to identify nuclear plant designs that could be commercially put into operation in the United States by 2010, and then to identify the technological and institutional gaps that must be completed to allow them to do so. Our final product is to be a report issued in September that will summarize these designs and the actions needed to bring them to market, including what DOE and NRC need to do.

Although 2010 sounds like a long time away, we quickly realize that there are a number of activities that need some action right now. To have a plan in operation by 2010, pretty much all the licensing activities with the NRC need to be essentially completed by 2006, which isn't very far off. Our group issued an interim report that is basically identification of a number of activities that need attention in the fiscal year 2002 and fiscal year 2003 budgets. Specifically, we recommended about $36 million be included in DOE funding for fiscal year 2002 to be used for providing cost share and for reimbursement of NRC fees and research on the new plant activities.

We believe there are a number of actions that Congress and the administration can take to provide an environment conducive to the expansion of nuclear energy. We don't ask any special favors for nuclear. We just would like to see a level playing field. We realize that nuclear has to compete in the marketplace on its own.

First, we feel like Price-Anderson must be renewed for a number of obvious reasons. Next, we need to see progress on the disposal of high-level waste. We don't necessarily need to start burying waste, but we do need to know that there is an unambiguous path forward that will lead to resolution. We think the interim recommendations of the DOE Near-Term Deployment Group to provide $36 million in fiscal year 2002 funding should be implemented so that licensing of nuclear plants doesn't become a delay step in bringing new plants to market by 2010.

When the group's final report is issued in September, we think its recommendations for future years should also be incorporated into government planning. Likewise, we need to think that—we think that the government also needs to make sure that NRC receives the resources that it needs to carry out licensing of new

plants. And, finally, Congress and the administration should consider options for encouraging the first wave of new nuclear plants in the U.S. Since no plants have been ordered in this country in over 20 years, first-time startup costs and the financial risks will be significant hurdles for that first wave. Incentives, such as the one that—some of the ones that Marv Fertel just mentioned, would go a long way in helping to bring those plants to market. Thank you.

[The prepared statement of George A. Davis follows:]

PREPARED STATEMENT OF GEORGE A. DAVIS, DIRECTOR, GOVERNMENT PROGRAMS, NUCLEAR SYSTEMS, WESTINGHOUSE ELECTRIC COMPANY

Chairman Barton, Ranking Member Boucher and distinguished members of the Energy and Air Quality Subcommittee, my name is George Davis. I am Director of Government Programs for the Nuclear Systems division of Westinghouse Electric Company. I am also currently participating in DOE's Near Term Deployment Group, which I will discuss later. The Nuclear Systems division is responsible for designing and selling new nuclear plant projects. Besides supplying reactor systems for new plants, Westinghouse also provides services, plant safety and monitoring equipment, and fuel to operating nuclear plants worldwide. The company employs about 9,000 people, mostly in the U.S., including those of the former ABB Combustion Engineering that was merged into Westinghouse just last year.

Westinghouse has a long and active history in supporting the commercialization of peaceful nuclear energy. We have provided about twenty five percent of the reactors operating worldwide. The number grows to about fifty percent, if we include Westinghouse licensees that use our technology. The bulk of nuclear plant construction activity is currently centered in South Korea, where there are ten units in operation based on our technology, six units under construction, and four more units in negotiation. We are also working on near term opportunities in Japan, China, and Finland. What we are becoming excited about now, however, is the possibility for a rebirth of the nuclear energy option here at home in the United States.

Today, I would like to provide you with our company's views on what Congress and the Administration could be doing to provide an environment conducive to the expansion of nuclear energy in a way that allows nuclear energy to be economically competitive in the deregulated marketplace, while assuring that public safety and environmental protection are not compromised in any way. First, however, I would like to provide our perspectives on (1) the current environment for new nuclear plants in the U.S., (2) the major issues to be addressed before new plants can be deployed, and (3) what Westinghouse, the rest of industry, and the Department of Energy are all doing to address these issues.

The Current Environment for New Nuclear Plants in the U.S.

With its roots in the Energy Policy Act of 1992, deregulation has been the great engine driving change in the electric power industry over the past decade. The sales of existing plants, coupled with consolidation of plant owners and suppliers, are creating a healthy, viable industry that is composed of larger, more efficient companies. Benefiting from the economy-of-scale (by operating and servicing a larger number of nuclear plants within a single organization), these companies will be in a position to handle the financial and technological challenges that must be managed, in launching the next generation of nuclear plants. Partly because of these consolidations, the operating costs and performance of the current fleet of nuclear plants have improved dramatically within the last several years. Conditions have improved so much that nuclear plants now operate at costs lower than coal burning plants (considering fuel plus operating & maintenance expenses).

Another reason for these dramatic improvements must be credited to changes at the Nuclear Regulatory Commission. The NRC's move toward a more risk-informed, performance-based oversight process has significantly reduced the regulatory burden on plant operators, by focusing attention on the issues that are truly important to safety. Coupled with its timely review of license-extension applications, the NRC has created an atmosphere of optimism about the prospects for licensing new nuclear plants—without the delays and obstacles that plagued us in the 1980s.

As air pollution and greenhouse gas production move to the forefront of the public's concern about the environment, there is a growing awareness that nuclear energy plants are quietly producing twenty percent of our nation's electricity without emitting any pollutants or greenhouse gases into the atmosphere. Coupled with

the U.S. nuclear industry's exemplary safety record, it's not surprising that public support for nuclear energy is growing.

Perhaps, the one dark cloud over our heads is the disposal of high-level wastes. If there is not progress on this issue, public support could begin to erode. We don't necessarily need to start burying waste yet, but we do need to know that there is an unambiguous path forward that will lead to final resolution. This is not a problem unique to new nuclear plants. The high-level waste issue must get resolved somehow, because there is already waste in existence from the plants currently operating. Therefore, it is not a question of if the issue will be resolved. It must be a question of *when.*

The recent volatility in natural gas prices, nationwide, and the electric power shortages in California are serving as a wakeup call to power companies all over the country. They cannot continue to rely almost exclusively on natural gas as the fuel source for new power plants. Nor can they ignore the erosion of reserve margins in their generating capacity. Many people would like to think that renewables could provide the major alternative to natural gas. Although they may play a rapidly increasing role in electricity generation, we have to acknowledge that they are currently producing less than one percent of our electricity supplies and that it is extremely unlikely that they will be able to provide a substantial share of our electricity, at competitive prices, within the foreseeable future. The cold hard reality is that there are only two energy sources likely to be deployable on a large scale, as economical competitors to natural gas plants. Those are coal and nuclear energy. If nuclear energy were removed from the list of alternatives, then we could expect to see a dramatic increase in the number of coal burning power plants being built over the coming years.

Issues Related to Deployment of New Nuclear Plants

This leads us to the question: What will it take for new nuclear plants to be a viable alternative? In the deregulated markets that are evolving in the United States, economic competitiveness is an absolute requirement. Every issue must be reduced to a calculation of its cost and financial risk. In the end, investors will back the projects that offer the best financial return, with the least uncertainty. The successful economic performance of the operating nuclear plants has removed any stigma about attracting investors just because a project is nuclear. Recent sale prices of operating plants attest to this fact. It is on this basis that new nuclear plants must compete against natural gas and coal plants. Therefore, in preparing for the marketplace, it is critical that we focus on activities that will reduce costs and uncertainty.

As one would expect, the fundamental economic requirement for new coal and nuclear plants is that they must be able to generate electricity with a total generation cost that competes with natural gas plants. Total generating costs include the capital charges (i.e., the mortgage payments) for building a new plant—along with the production costs (i.e., fuel plus operating & maintenance expenses). The capital cost of building a coal or nuclear plant is at least twice the cost of building a comparably sized natural gas plant; however, the fuel costs are dramatically lower. To compound matters, investors want the capital costs on a new plant (be it gas, coal, or nuclear) to be paid off within twenty years or less—as opposed to the thirty year mortgages that regulated utilities were able to use in the past. This creates even more pressure to hold down capital costs.

The overnight capital cost (i.e., without including interest charges or inflation during the construction period) of building a new coal plant in the U.S. is estimated to be around $1,000/kilowatt. Since new nuclear plants are expected to have production costs (fuel plus O&M) slightly below coal plants, this means that the overnight capital costs for nuclear units must also be around $1,000/kwe to be competitive. This would place the total generating costs of coal and nuclear plants in the range of 3 to 4 cents/kilowatt-hour—which is where natural gas generated electricity was, until the sudden run-up in natural gas prices last year. Today, gas plants are generally producing electricity at more than 5 cents/kilowatt-hour (although this varies by region of the country).

Compared to the gas and coal burning plants, new nuclear plants face a significant hurdle that is unique to nuclear—NRC licensing. If an unregulated power generation company wants to bid to supply electricity to a regulated utility (in a power purchase agreement), the generation company can obtain the necessary permits for a coal or gas plant prior to submitting its bid—with relatively little investment of time and expense. On the other hand, obtaining the permits for a nuclear plant is substantially more expensive and time consuming. Since the generation company may not know whether it will actually construct the plant until it has won the power purchase agreement, incurring these costs beforehand is a significant risk.

Despite the dramatic improvements at NRC, there is still significant cost and uncertainty associated with the licensing of new plants. In 1989, the Commission implemented a new regulation (10CFR52) to streamline the licensing process. It provided for approval of (1) standardized designs via Design Certification, (2) individual plant sites via Early Site Permits, and (3) construction and operation of individual plants via Combined Operating Licenses. During the 1990s, the Commission issued three Design Certifications; however, the Early Site Permit and Combined Operating License processes still remain untested.

What Westinghouse, Industry, and DOE Are Doing to Prepare for New Plants

One of the three standardized designs certified by NRC is our AP600 design. Rated at 610 Megawatts, it is the only Light Water Reactor design that is based on the use of passive safety systems to improve safety, simplify the plant, and reduce costs. It is ready for the marketplace today and, in fact, has been submitted for consideration in potential overseas projects. The estimated overnight costs for constructing AP600 units is on the order of $1,400/kwe, which is slightly lower than for the other two standardized designs that are already certified by NRC. It should be noted, however, that there would be significant first-time startup costs in building the first units—which would have to be included in the price of those units or spread out over a number of the follow-on units. From the previous discussion, we can see that the AP600 design would be expected to be competitive in the U.S. market, if electricity prices remain at their current levels of 5 cents/kw-hr or higher. If, on the other hand, electricity prices should decline back to the 1999 levels, a lower cost alternative will likely be needed.

To address this need, Westinghouse began developing changes to the AP600 design in 1999—to uprate its power level from 610 Megawatts to 1090 Megawatts. We found that we could increase the size of the reactor core and vessel, the steam generators, the reactor coolant pumps, the containment height, and the turbine-generator—without increasing the footprint of the plant. Therefore, changes to the plant design are minimal. The larger components are the same size as those used in some of the operating Westinghouse plants; thus, assuring that design detail and proven features are maintained. The overall impact is an increase in power rating of about 75%, with an increase in capital cost that is only about 13%. The revised design, dubbed AP1000, would have a capital cost below $1,000/kwe—which would make it very competitive against natural gas and coal plants, even if electricity prices drop back down to 1999 levels.

We are currently in a pre-application phase with the NRC and are providing the Staff with information on the nature of the changes to the design and the safety analyses. By the end of this year, we hope to reach agreement on the scope, schedule, and budget for the NRC's review and approval of a complete application for Design Certification of the AP1000 design changes. We would then expect to submit the complete application early in 2002. Although the NRC has not issued its schedule estimate, we believe that issuance of the Certification by the end of 2004 should be a reasonable target.

In addition to our effort to develop and license the AP1000 design changes, we are also becoming involved in the development and licensing of the Pebble Bed Modular Reactor—a 110 Megawatt gas-cooled reactor. Building off of the demonstration project being pursued in South Africa, the PBMR offers an incredible opportunity to bring forth an economical nuclear plant design, at a much lower power level. Since the PBMR has already been discussed with this Committee by Exelon, I will not go into the details of it here—other than to reiterate the point that licensing of the PBMR will necessitate the development of new NRC requirements and review processes.

For completeness, I should also mention that Westinghouse is also working on a longer-term Light Water Reactor design, called IRIS, under a grant from DOE. IRIS is an integral reactor that could range in size from 100 to 300 Megawatts and includes a number of inherent safety features that go beyond what we have done in other passive designs. It might be thought of as a Light Water Reactor counterpart to the PBMR—except that it is not as far along in the development process.

Meanwhile, the nuclear industry, as a group, has begun paving the way for new nuclear plants by establishing the Nuclear Energy Institute Executive Task Force on New Plants. The Task Force includes representatives from power companies, architect-engineers, reactor suppliers, EPRI, and INPO. It is providing management and oversight of the many new-plant activities being carried out by industry—in coordination with NRC and DOE. For example, there is an NEI group that is looking at how the Early Site Permit process in 10CFR52 would be implemented. Another group is looking at changes to 10CFR52 itself that would benefit new plant licensing.

Since 1999, DOE's Nuclear Energy Research Initiative has included a number of small research projects to assist in the efforts to prepare for new plants. This year, however, DOE has launched an initiative to prepare a technology roadmap for guiding nuclear R&D activities that will lead to what it calls Generation IV reactors. Working groups (comprised of representatives from industry, laboratories, and academia) are carrying out this initiative under the guidance of the Nuclear Energy Research Advisory Committee (NERAC). I am a participant in one of the working groups. It is called the Near Term Deployment Group.

The Near Term Deployment Group is co-chaired by Lou Long (Southern Nuclear Operating Company) and Tony McConnell (Duke Engineering & Services, Inc.). The task of this group is to identify nuclear plant designs that could be commercially put into operation in the U.S. by 2010, and, then, identify the technological and institutional gaps that must be addressed for them to do so. The final product of this group, to be completed in September of this year, will be a comprehensive report that summarizes the designs and actions needed—including identification of what is needed from DOE and NRC.

Although 2010 may seem like a long time from now, our group quickly realized that some activities require action right away. As one might guess, these activities relate almost entirely to regulatory issues—in particular, the need to support ongoing interactions between NRC and industry, related to implementation of 10CFR52: Early Site Permits, Combined Operating Licenses, Design Certifications, and introduction of new advanced reactor technologies, e.g., the PBMR. To have a new plant operating by 2010, all of these NRC licensing activities need to be completed by 2006 or sooner. Therefore, at the end of May, our group issued an interim report that identifies activities needing immediate attention, which should be included in fiscal year 2002 and 2003 budget planning. Specifically, the group recommends that $36 million be included in DOE's budget for fiscal year 2002. The funding would be used to provide cost-share and reimbursement of NRC fees and research on these new plant activities. (In fact, 30 to 50% of this funding would ultimately be paid to NRC.) This funding would encourage companies to step forward and enter into the Early Site Permit, Combined Operating License, and Design Certification processes on an early enough schedule that the U.S. could witness operation of new plants by 2010.

Suggestions for Government Actions to Support Expansion of Nuclear Energy

Consistent with the recommendations of the Vice-President's National Energy Policy Development Group, we believe that there a number of actions that Congress and the Administration can take to provide an environment conducive to the expansion of nuclear energy in a way that allows nuclear energy to be economically competitive in the deregulated marketplace, while assuring that public safety and environmental protection are not compromised in any way. We do not ask for any special favors for nuclear energy. Nuclear plants must be able to compete in the marketplace on their own. However, we would like to see a level playing field with the other generating options of coal, gas, and renewables—in terms of regulation, incentives, and research support. More importantly, the industry and its investors must feel confident that nuclear energy has the government's support, if we are to invest the many billions of dollars that would go into the next generation of nuclear plants.

Price-Anderson must be renewed. It has served the industry and the American people very well, for over forty years. Failure to renew it would be sure to keep the industry and the investment community from involvement in financing new nuclear plants.

Progress on the disposal of high level wastes must be demonstrated. We don't necessarily need to start burying waste yet, but we do need to know that there is an unambiguous path forward that will lead to final resolution. Otherwise, public support for the nuclear option could begin to erode. In addition, the industry and investors would have to allow for substantial financial risks in the uncertainty of the outcome, when estimating the costs of new plants.

The interim recommendations of DOE's Near Term Deployment Group to provide $36 million in fiscal year 2002 should be implemented, so that NRC licensing issues do not delay the possibility of starting up new nuclear plants by 2010. The activities described in the group's interim report will play a crucial role in developing and demonstrating the new streamlined licensing process for future plants. When the group's final report is issued in September, its recommendations for future years should be incorporated into government planning and budgets.

Complementary to the recommendation of the Near Term Deployment Group, it is also important to assure that NRC receives the support that it needs from Congress and the Administration, to assure that it has adequate resources necessary to carry out the licensing of a new generation of nuclear plants.

Congress and the Administration should consider options for encouraging the first wave of nuclear plant orders in the U.S. Since no new plants have been ordered in the U.S. in over twenty years, the first-time startup costs and financial risks will be significant hurdles for the first wave of plants that are ordered. Incentives for that first group of orders—e.g., accelerated depreciation for tax purposes, loan guarantees, deferral of licensing fees, etc.—could help to encourage the first buyers to take action. Making available financial credits for the deployment of new nuclear plants, based on the clean air and greenhouse gas benefits of nuclear energy, should be strongly considered.

Conclusion

The potential for rebirth of the nuclear option in the U.S. is a reality. Nuclear plants can be expected to be economically competitive with the coal and gas options. However, government support for the nuclear option will play an important role in overcoming some of the up-front financial and regulatory risks. We strongly encourage Congress and the Administration to take the actions suggested above.

Mr. LARGENT. Thank you, Mr. Davis.

And now we recognize Mr. Laurence Parme from General Atomics. You have 5 minutes.

STATEMENT OF LAURENCE L. PARME

Mr. PARME. Mr. Chairman, members of the subcommittee, I want to thank you for this chance to talk to you about some of the legislative initiatives or reforms that we think would facilitate licensing of a next generation of nuclear power.

As you may be aware, General Atomics is the leading developer and proponent of High-Temperature Gas-Cooled Reactors. We have been at the forefront of research on this technology for over 40 years. The Gas Turbine Modular Helium Reactor is a next generation of Generation IV reactor technology and builds on this experience. The GT-MHR couples a gas turbine directly to a modular reactor, not all together different than the Pebble Bed plant. It is characterized by meltdown-proof safety, much improved economics, substantially reduced production of wastes, both nuclear and thermal, and very good proliferation resistance.

Now, while this technology was first conceived of in the U.S. in the early nineties, the development is now proceeding in Russia as part of an international program aimed at the destruction of surplus weapons grade plutonium. This is being done under a joint U.S.-Russian cost-sharing arrangement, with contributions also being made by Japan and France.

If you take out the plutonium core and put in a U.S.-designed, low-enriched uranium core, this plant makes a very promising and competitive commercial plant. General Atomics, along with interested utilities, are currently working to commercialize the technology and bring it to the U.S. market. I believe attached to my written testimony you will see a letter to Chairman Barton from Entergy representing our Utility Advisory Group on their participation in the program.

Now, among the major challenges facing this effort, licensing and regulatory issues are some of the large ones. There is really three areas of hurdles or where we see that the Congress and others can help us get through. First of all, the NRC. Now, it has been discussed today questions of the NRC staff and do they have the staffing to support licensing of new plants. And I won't go into that further, but beyond that, there are two items. There is, not surprisingly, the NRC's experience is with licensing light water reactor

plants. And this leads us in two places. First of all, many of their review criteria are based on water reactors, and these are not always appropriate for gas-cooled reactors. In addition, it is our view that their expertise in looking at gas-cooled reactors is limited.

A second area that General Atomics is interested in is bringing back technology from overseas. While we understand and have every anticipation that a reactor built in the U.S. will be built to U.S. codes and standards, there are a number of unknowns and may also bring back analysis and take credit for component testing and full prototyping that will be done overseas.

Finally, there are several regulations that are either outdated or need to be modified or adapted for advanced reactors in general, but the gas-cooled reactors in particular. Mention a few of these that can be a burden: anti-trust review requirements, 10 CFR 50 Part 33. One of the things General Atomics is concerned about is the ban on foreign ownership of U.S. nuclear power plants. In today's world where the industry is consolidating and international cooperation is becoming more common, this becomes more of a problem. Many of the industrial partnerships we have looked at for bringing a first plant into the U.S. would involve foreign partners.

The large emergency planning zone requirements, also in 10 CFR Part 50. When these were originally developed and specified, the thought was on large water-cooled reactors. I think there is a good deal of evidence that the definition of how large these emergency planning zones need to be may not be appropriate to a gas-cooled reactor, especially a modular reactor.

Finally, the per reactor basis for both annual fees, licensing fees for reactors and the per reactor basis for Price-Anderson. Price-Anderson we would like to see renewed, but the way these laws just blindly go on a per reactor basis without consideration for the megawatt rating of the reactor can be detrimental to small modular reactors. So we believe that it is important for increased use of nuclear energy in this country, to also think about advanced reactors, the introduction of these new reactors will, however, require a fresh look in a number of areas in regulation and licensing. Thank you.

[The prepared statement of Laurence L. Parme follows:]

PREPARED STATEMENT OF LAURENCE L. PARME, MANAGER: SAFETY AND LICENSING, GENERAL ATOMICS

Mr. Chairman and Members of the Subcommittee, my name is Larry Parme and I am the Manager of Nuclear Safety and Licensing for General Atomics. I appreciate the opportunity to speak before you today to present the views of General Atomics on legislative and other reforms necessary to facilitate the licensing of next generation nuclear power

As you may be aware, General Atomics is a leading developer and proponent of High Temperature Gas-Cooled Reactors and has been at the forefront of research on these technologies for over 40 years.

Today we and interested utilities are looking to bring to the U.S. market the Gas Turbine-Modular Helium Reactor (GT-MHR). (Attached to my testimony is a copy of a letter from the Chairman of our Utility Advisory Board to this Subcommittee). We believe this technology offers the promise of several desirable features including enhanced safety, a favorable environmental impact, and competitive economics. We have initiated pre-application discussions with the NRC to facilitate an anticipated application in the future. In addition, recognizing certain similarities in the technologies, we have been collaborating on generic issues with the Pebble Bed Modular Reactor (PBMR) project.

Background and Overview of Design

U.S. and European technologies provide the basis for the Gas Turbine-Modular Helium Reactor (GT-MHR). For more than 4 decades, High Temperature Gas-cooled Reactors (HTGRs) have been under development in several countries. Numerous prototypes and demonstration plants have been constructed and operated including Peach Bottom 1 and the Fort St. Vrain Nuclear Generating Station in the United States. At the time of these initial plants, the vision was one of scaling up the technology to large, steam cycle plants comparable to modern Light Water Reactors, thus benefiting from economy of scale.

However, in the early 1980s, both in the U.S. and abroad a shift in paradigm occurred and it was recognized that safety and modularization should be the primary drivers of our future nuclear plant design. Several features of the HTGR, particularly the unique coated particle fuel, lend themselves to the design of smaller, modular plants with significant simplification and safety advantages. Furthermore, this simplification when coupled with shortened construction schedules, and incremental capacity additions, promised improved economics. Hence, the Modular High Temperature Gas-Cooled Reactor (MHTGR) was the DOE sponsored, General Atomics developed, U.S. modular plant design submitted for pre-application review by NRC in the latter half of the 1980s. The GT-MHR represents a further refinement on this concept. Taking advantage of the high temperature capability of the gas-cooled reactor and an evolving technology base, the GT-MHR replaces the steam cycle with a closed loop gas turbine (Brayton) cycle. With the gas turbine, a net plant efficiency of nearly 50% (which is approximately 50% more efficient than existing reactors) can be realized, further improving the concept's economics.

The 285 MW (electric) GT-MHR is now being developed under a joint U.S./Russian Federation agreement aimed at the destruction of surplus weapons plutonium. In addition to the U.S. and Russia, Japan and France also sponsor the program. Conceptual design of this International GT-MHR program is completed and preliminary design is on schedule for completion in early CY 2002. Construction of the first module is currently scheduled to begin in 2006 with startup in 2009 and a 4-module plant to follow.

Commercialization in the U.S. involves the importation of the International design with a U.S. engineering effort to adopt the design for the U.S. and world markets. These would include ensuring compliance with U.S. codes and standards, a low enriched uranium core, and a 60-Hertz generator. I should point out that the development work on the International program is proceeding with this adaptation in mind. Finally, a licensing submittal would be prepared in the U.S. and submitted to NRC. The first U.S. module could be operating approximately 1 year after the first International module.

Challenges to Deployment

While the technical challenges facing the design teams now working to complete preliminary design are considerable, surmounting several legal and institutional hurdles will be at least as important if the GT-MHR is to play a part in the future U.S. energy mix. These hurdles may be summarized as falling into three general categories. These are;

1. Institutional inexperience with gas-cooled reactors and a predisposition to view them as variants of the more familiar (in the U.S.) water-cooled reactors.
2. Returning the GT-MHR technology to the U.S., and
3. Regulations enacted without a deregulated market or smaller, modular reactors foreseen.

Institutional inexperience: Just as the GT-MHR represents a shift in several of the paradigms in reactor design, its licensing requires a certain amount of fresh thinking. While on the surface 10CFR Part 50 and especially the combined license and certification offered by Part 52 are adequate to license advanced reactors, a substantial portion of the review criteria developed by the NRC to implement these regulations is based on experience with large, Light Water Reactor (LWR) plants.

Consequently, the GT-MHR licensing plan builds on General Atomics' experience of the mid-80s at which time we submitted for NRC review another gas-cooled modular reactor, the steam cycle MHTGR. Because of the unique design approach, especially with regards to safety, the licensing approach we proposed returns to the fundamental safety requirements of allowable dose and risk to the public. It was then used to derive risk-informed licensing bases similar to those in use by the NRC but appropriate to a gas-cooled modular reactor and directed at assuring compliance with these "top-level" safety requirements.

This type of review is required to realize the benefits of a simplified safety approach and to ensure that the licensing process addresses questions unique to gas-cooled reactor safety.

At this point I should add that the Pebble Bed Modular Reactor (PBMR) project, as it is being pursued in the U.S. by Exelon Generation, is also using the 1980s MHTGR licensing approach as the starting point for their interactions with NRC. We are currently cooperating with Exelon in establishing a licensing approach capable of effectively dealing with both of our concepts. We feel that this is not only in the best interests of both programs but that such cooperation will ultimately work to the taxpayers and ratepayers advantage.

Finally, the question has been previously raised before the Congress as to whether the NRC has the staff to handle on-going regulation of existing power plants, expected license renewals, plus applications for new plants. In addition to this, the technical expertise to adequately review the GT-MHR, or other gas-cooled reactor, in the NRC or in the national laboratories supporting the agency is limited.

Returning GT-MHR technology to the U.S.: I have previously alluded to the fact that while the GT-MHR was first conceptualized in the U.S., it is currently under development as part of an International program. Specifically, much of the engineering and developmental testing is being performed in the Russian Federation with significant technology transfer and review being made by Japan, France, and the U.S. as part of the program for dispositioning of surplus, weapons grade plutonium. To efficiently commercialize the GT-MHR in the U.S. we are attempting to gain maximum leverage from this International effort in a manner not altogether dissimilar from the development of the PBMR in South Africa.

Within the International program, every effort is being made to ensure that the GT-MHR will be marketable in the U.S. and elsewhere. We understand that components will need to be manufactured to U.S. consensus code and standards. Nonetheless, the path and degree to which foreign performed testing programs and analyses are usable in the U.S. remains somewhat uncertain.

Outdated Regulations: Several regulations that impact the owners and operators of plants could act as significant impediments. Specifically, the economic competitiveness and hence the ability to deploy a smaller, modular design would benefit from updating legislation enacted at a time when the assumptions about nuclear power and utilities operating them was different from today's realities. Regulations that we feel should be revisited and revised are;

- The antitrust review requirements of 10CFR Part 50.33a,
- The ban on foreign ownership of U.S. nuclear plants of 10CFR 50.38,
- The large emergency planning zone requirements in 10CFR Part 50.54, and
- The annual fees on a per reactor basis of 10CFR Part 171.

The NRC antitrust review requirements of 10CFR Part 50.33a is based on the assumption of regulated monopolies, electric utilities, owning and operating nuclear power plants. However, antitrust review of a competing commercial plant is an added cost to the user with little or no benefit apparent to consumers. Furthermore, the review is redundant with the reviews performed by other agencies.

The ban on foreign ownership of U.S. nuclear plants (10CFR 50.38) should be considered for elimination. Many of the power generation entities that could be either potential customers or part of a consortium to build the first U.S. modules have foreign participants. With the continuing consolidation of the industry the ban on foreign ownership is likely to become increasingly burdensome to new nuclear generation. The NRC has the authority to deny a license that would be inimical to the common defense and security of the U.S., and thus the blanket ban on foreign ownership is unnecessary.

The large emergency planning zone requirements in 10CFR Part 50.54 were developed based on an understanding of "worst case" accidents in large water reactors being placed in service at the time. However, the GT-MHR, from its inception, was designed to limit radiological releases during accident to very much lower levels. Furthermore, the time frame over which an accident would progress in these modular designs is fundamentally different. Rather than the potential for core damage in minutes, worse case accidents in the modular reactors progress over days. Consequently, the typical 10 mile Emergency Planning Zone in which preparations are in place for rapid off site actions in a large area surrounding the plant does not appear required nor appropriate for the modular gas reactors.

The annual fees specified in 10CFR Part 171 are currently assessed equally on all reactors. Such a fee structure is punitive on smaller sized reactors since for a given level of electric power production, more reactors are involved. With an output of approximately 285 Megawatts, 3 or more GT-MHR modules would be required to equal the output of a large Light Water Reactor. Under the current fee arrangement, 3 or more times the annual fee would be assessed an operator of the GT-MHRs. For operators of still smaller modules, the fee would become an even greater burden.

Summary

In summary, the GT-MHR offers an environmentally benign source of electric power that could be part of the answer to U.S. energy needs. It is rooted in decades of international HTGR technology development and builds on the mid-1980s MHTGR experience. The design features optimization of characteristics inherent to high temperature gas-cooled reactors to achieve high thermal efficiency, and easily understood, assured safety.

To realize the benefits of this technology, though, legal and institutional disincentives stemming from 1970's assumptions of what nuclear power plants looked like and the environment in which they would operate need to be reviewed and revised.

APPENDIX

Description of the GT-MHR

The GT-MHR design is centered around a 600 Megawatt graphite core comprised of 1020 fuel blocks essentially identical to those successfully used in the Fort St Vrain reactor in the 1970s and 80s. The system is contained in a 3 vessel, side-by-side arrangement. The reactor is located in one vessel, while a compact arrangement of the entire gas turbine based power conversion system, including the generator is located in a second parallel vessel. A small horizontal vessel provides coaxial ducting of gas between the reactor and power conversion system. The entire nuclear unit is located in a below grade silo with service areas above. The silo provides containment and protection of the reactor but is not designed to hold pressure. Naturally circulating water or air in panels around the reactor vessel carry off heat radiated from the uninsulated vessel and provides entirely passive reactor cooling.

Ceramic-coated fuel is the key to the GT-MHR's safety and economics. A kernel of Uranium oxycarbide (or UO2) is placed in a porus carbon buffer and then encapsulated in multiple layers of pyrolytic carbon and silicon carbide. These micro pressure vessels withstand internal pressures of up to 2,000 psi and temperatures of nearly 2,000 o C providing extremely resilient containment of fission products under both normal operating and accident conditions. The fuel particles are blended in carbon pitch, forming fuel rods, and then loaded into holes within large graphite fuel elements. Fuel elements are stacked to form the core.

Modular gas reactors and the GT-MHR represent a fundamental shift in reactor design and safety philosophy. Up through approximately 1980, HTGR development proceeded on a path of scaling up core size in the interests of economics. In the process of this scale-up, overall core power density was kept nearly constant while its surface to volume ratio decreased. At the time, this was believed necessary to achieve low capital cost. As a consequence of this thinking, the maximum predicted accident temperatures of these large cores increased well above the temperature capabilities of the fuel particles. This placed ever increasing reliance on engineered safety features to assure continued core cooling and to contain released fission products should this cooling be lost. The modular reactor represents a 180-degree turn around in design philosophy. From its inception, the modular design first addresses safety, sacrificing size and optimized nuclear geometry to ensure that regardless of cooling system operation or coolant boundary integrity, fuel temperatures will never exceed the point at which fission products would be released. Having first addressed safety with the inherent features available in the gas-cooled reactor, good economics are sought in the efficient Brayton cycle and plant simplification.

Fuel particle testing in Japan, Germany, and U.S. has repeatedly demonstrated the high temperature resilience of coated particle fuel to temperatures approaching 2,000°C. As a conservative design goal, GT-MHR has been sized to keep maximum fuel temperatures below 1,600°C during the limiting accident condition of lost coolant circulation, pressure, and all AC power. Like other reactor types, the GT-MHR has a negative temperature coefficient (i.e., the hotter the reactor becomes, the less able it is to support a fission chain reaction). But unique to reactors with an all refractory, high temperature core, there is several hundred degrees of temperature margin in the core design to make full use of this feedback mechanism.

Mr. LARGENT. Great. Thank you for your testimony.

Now, we recognize Dr. Allen Womack, president of BWX Technology, on behalf of the Energy Contractors Price Anderson Group, and you have 5 minutes to summarize your testimony.

STATEMENT OF E. ALLEN WOMACK

Mr. WOMACK. Thank you, Mr. Chairman. The Energy Contractors Group is an ad hoc organization made up of BWX Technologies, Battelle Memorial Institute, BNFL, Incorporated, Fluor Corporation, Johnson Controls, Nuclear Fuel Services and Washington Group International and USEC, Incorporated. This represents a significant cross-section of DOE contractors.

Each of these entities is covered by one or more nuclear hazard indemnity agreements with the U.S. Department of Energy under section 170(d) of the Price-Anderson Act. Collectively, we are here today to advocate an extension of the Price-Anderson Act. We support another extension sooner rather than later to ensure there is no break in this vital authority next year.

The protection of the public has been the principal purpose of the Price-Anderson Act since its adoption. Failure to extend the act would result in substantially less protection for the public in the event of a nuclear incident at a DOE site or in transporting materials from a DOE site. Absent Price-Anderson coverage, the Department of Energy would greatly be inhibited in attracting and hiring the kinds of contractors needed to tackle some of the tough work that lies before them. Without Price-Anderson protection, most private contractors and suppliers could not prudently take the financial risks associated with assisting DOE to perform its vital cleanup, national defense and other missions. Price-Anderson indemnification is simply the only viable substitute for the commercial insurance that prudent contractors doing work for the Federal Government would purchase, if they could, to protect themselves.

In 1999, the Department of Energy submitted a report to the Congress calling for a renewal of Price-Anderson, and we support that recommendation. Attached to their 1999 report to Congress was a letter from American Nuclear Insurers indicating that commercial insurers are not in a position to guarantee that any nuclear liability insurance would be written for DOE facilities. It further stated that even if it were, it could not replace the $9.4 billion of indemnity granted under the Price-Anderson Act, since ANI has been limited in their ability to write coverage beyond $200 million.

There would be a strong reluctance on the part of existing and potential contractors to do nuclear business with the Department if the authority to enter into Price-Anderson indemnity agreements were discontinued. The strong reluctance, if not inability, to do business would apply especially to contractors whose nuclear activities are a small percentage of their overall business. This would lessen competition and otherwise increase costs to the Government. the strong resistance would also extend to subcontractors and equipment suppliers, including many small businesses throughout the country who might be held liable for an accident but not have the financial resources to cover that liability or the legal defense costs associated with such litigation.

With regard to safety, Price-Anderson indemnification provides an incentive for safety. Not only are there existing criminal laws to punish egregious behavior, in the 1988 amendments to Price-Anderson, Congress added enhanced criminal and civil penalty provisions to further encourage DOE contractor accountability. These provisions are now being rigorously enforced. In addition, DOE can

and does hold contractors accountable by other actions, such as performance fee reductions, stop work orders, contract modification and contract revocation.

Reducing the number of potential contractors and suppliers to DOE would obviously have an adverse impact on the Department's costs and schedules. Of even greater concern would be the potential adverse impact on the overall quality and safety levels of DOE contract work, since the most qualified and most safety-conscious contractors and suppliers would probably be the first to abandon DOE work because of inadequate liability protection.

In conclusion, the Price-Anderson indemnity system should be continued in substantially its present form. After nearly 45 years of Price-Anderson Act indemnification, private industry has assumed, as Congress intended, a larger role in assisting the Federal Government in carrying its own nuclear activities safely and efficiently. In other words, Price-Anderson contractor indemnification is a system that has worked well in encouraging this private industry participation, and it should be promptly extended again.

Thank you for the opportunity to testify. I will be happy to answer questions.

[The prepared statement of E. Allen Womack follows:]

PREPARED STATEMENT OF E. ALLEN WOMACK, PRESIDENT, BWX TECHNOLOGIES, INC. ON BEHALF OF ENERGY CONTRACTORS PRICE-ANDERSON GROUP

Mr. Chairman and Members of the Subcommittee, my name is Allen Womack and I am President of BWX Technologies, Inc. I am here this morning representing fellow Department of Energy contractors through the Energy Contractors Price-Anderson Group.[1] I am accompanied by Omer F. Brown of Harmon, Wilmot & Brown, L.L.P., counsel to the Group. We appreciate this opportunity to testify before your Subcommittee and for the fact that you have scheduled this hearing about extension of the Price-Anderson Act ("Price-Anderson").

Price-Anderson Act authority of the Department of Energy provides indemnity protection for nuclear risks associated with DOE contracts and is to expire on August 1, 2002. We are here today to ask for its renewal. We support extension, sooner rather than later, to ensure there is not a break in this vital authority next year.

Protection of the public has been the principal purpose of Price-Anderson. Failure to extend Price-Anderson would result in substantially less protection for the public in the event of a nuclear incident at a DOE site or in transportation. Moreover it would greatly inhibit the Department of Energy in attracting and hiring the kinds of contractors needed to tackle some of the tough work that lies before them.

For almost 45 years, through Price-Anderson, the Congress has been able to ensure the availability of adequate funds to the public (now about $9.4 billion) in the unlikely event of a catastrophic nuclear accident. In addition, other benefits to the public include such provisions as emergency assistance payments, consolidation and prioritization of claims in one court, channeling of liability permitting a more unified and efficient approach to processing and settlement of claims, and waivers of certain legal defenses in the event of a large accident ("extraordinary nuclear occurrence").

The 1988 Price-Anderson Amendments Act required DOE and the Nuclear Regulatory Commission (NRC) to submit to Congress reports containing their recommendations for continuation, repeal or modification of the Price-Anderson Act. The DOE Report was submitted to Congress in March 1999 recommending an extension. NRC's Report, which also strongly recommended an extension (with relatively minor changes), was filed in October 1998.

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[1] The Energy Contractors Price-Anderson Group is an *ad hoc* group composed of Battelle Memorial Institute; BNFL, Inc.; BWX Technologies, Inc.; Fluor Corporation; Johnson Controls World Services Corporation; Nuclear Fuel Services, Inc.; Washington Group International Inc.; and, USEC Inc. Each of these entities now is covered by one or more nuclear hazards indemnity agreements with the U.S. Department of Energy (DOE) under Section 170d of the Price-Anderson Act.

The 1999 DOE Price-Anderson Report makes five basic recommendations, which we support:

(1) DOE indemnification of its contractors for nuclear risks should be continued without substantial change, because it is "essential to DOE's ability to fulfill its statutory mission." The Report further makes the point that DOE indemnification guarantees the availability of funds to ensure prompt and equitable compensation for the public, provides for consolidating claims in one federal court, and minimizes protracted litigation. DOE goes on to state that Price-Anderson indemnification is cost-effective, pointing out that DOE payments to date "have not been significant."
(2) The amount of DOE indemnification (about $9.4 billion) should not be decreased.
(3) DOE indemnification should continue to provide broad and mandatory coverage of activities conducted under contract for DOE.
(4) DOE should continue to have authority to impose civil penalties on for-profit contractors, subcontractors and suppliers for nuclear-safety violations.
(5) The 1997 International Atomic Energy Agency Convention on Supplementary Compensation for Nuclear Damage (CSC) should be ratified, and conforming amendments to the Price-Anderson Act should be adopted. (Technically, U.S. ratification of the CSC would have little impact on the portions of the Price-Anderson Act applicable to indemnification of DOE contractors. The CSC is of more relevance to commercial nuclear activities, which would enjoy substantial benefits from its ratification by the United States and other countries. For example, the CSC would provide a portion of the funds for a power plant accident in the United States through international contributions.)

This year, we have seen several comprehensive energy bills containing nearly identical Price-Anderson extension provisions introduced in the House of Representatives (H.R. 1679) and the Senate (S.388, S.472, and S.597). These are based on last year's bipartisan Senate bill, S.2162 (106th Congress), introduced by Senator Frank Murkowski (R-Alaska) and Senator Jeff Bingaman (D-New Mexico). We support extension of the DOE contractor provisions of these bills whose simplicity, similarity and bipartisan nature reflect a consensus on a simple extension of Price-Anderson. We further note that the President's National Energy Policy Report also supports extension of the Price Anderson Act.

Without Price-Anderson protection, most private contractors and suppliers could not prudently take the financial risks associated with assisting DOE to perform its vital cleanup, national defense, and other missions. Price-Anderson indemnification is not a "subsidy" to DOE contractors and suppliers. It simply is the only viable substitute for the commercial insurance that prudent contractors doing work for the Federal Government would purchase, *if they could,* to protect themselves, and the public.

Attached to the 1999 DOE Report to Congress is a letter from American Nuclear Insurers (ANI) indicating that commercial insurers are not in a position to guarantee that any nuclear liability insurance would be written for DOE facilities. It further states that even if it were, it could not replace the $9.4 billion of indemnity granted under the Price-Anderson Act, since ANI has been limited to nuclear liability limits of only $200 million.

In any case, ANI observed that it would be much easier for it to write nuclear liability insurance for new DOE facilities than for existing ones. The insurers said, for facilities which have, in some cases, operated for decades, ANI "would have obvious concerns about picking up liability for old exposures, which may well preclude insurability." Even if some limited private insurance were available for some DOE nuclear activities, it would not protect against all nuclear hazards, and would increase Government costs substantially, as the DOE Report to Congress observes. Few nuclear claims have ever been paid by the Government, so DOE has concluded it is cost-effective for the Government to continue to self-insure the nuclear risks associated with its own activities.

With regard to safety, Price-Anderson indemnification does not provide a disincentive to safety any more than the purchase of liability insurance by an individual or a corporation provides a disincentive to safety. There are existing criminal laws to punish egregious behavior. Furthermore, in the 1988 Amendments, Congress added enhanced criminal and civil penalty provisions to further encourage DOE "contractor accountability." These provisions, which now are being rigorously enforced, were added to enable DOE to impose civil fines of up to $110,000 per day and increased criminal penalties for violations of DOE nuclear safety rules. DOE also can hold contractors accountable by other actions, such as award-fee reductions, stop-work orders, contract modification, and contract revocation.

There would be strong reluctance on the part of existing and potential contractors to do nuclear business with the Department if authority to enter into Price-Ander-

son indemnity agreements were discontinued. The strong reluctance, if not refusal to do business, would apply especially to contractors whose nuclear activities are only a small percentage of their overall businesses. This would lessen competition and otherwise increase costs to the Government. The strong resistance also would extend to subcontractors and equipment suppliers, including many small businesses throughout the country, who might be held liable for an accident but not have the financial resources to cover that liability or the legal defense costs associated with such litigation.

Reducing the number of potential contractors and suppliers to DOE would obviously have an adverse impact on their costs. Of even greater concern would be the potential adverse impact upon the overall quality and safety levels of DOE contract work since the most qualified and most safety conscious contractors and suppliers would most probably be the first to abandon DOE work because of inadequate liability protection.

Contractor coverage prior to Price-Anderson often was inconsistent, subject to individual contract idiosyncrasies, inapplicable to subcontractors, and subject to the availability of appropriated funds. Subsection 170d was carefully designed to correct many of these deficiencies and to provide a uniform system of public protection. Without Price-Anderson, DOE would be faced with performing its missions with small, lightly capitalized contractors or Federal employees. In those situations, the public would not be as well protected. Contractors without assets could not pay claims. Use of Federal employees would mean that the Federal Tort Claims Act would apply, which would eliminate jury trials and the possibility of class actions, and require the submission of individual administrative claims.

The Price-Anderson system specifically was developed to provide assurance that significant sums of money would be available over an extended period of years to make prompt payment to victims in the remote case of a nuclear accident. The only fundamental change since the original adoption of Price-Anderson in 1957, has been the revolutionary change in the American tort system, most of which has occurred over the last twenty-year period. This change has increased greatly the unpredictability of the probable dollar damages resulting from any major accident, whether it is nuclear or non-nuclear in nature. This makes a system such as Price-Anderson only more essential for the period beyond 2002.

Unlike NRC-licensed nuclear power plants that are "grandfathered" under Price-Anderson (i.e., their coverage lasts for the duration of their license), DOE sites and facilities are not. Most DOE contracts expire in five years or less. Indemnity in DOE contracts signed or extended prior to the Act's expiration will remain in effect for the duration of the contract, but contracts entered into or extended after that date will have no indemnity. There are major DOE contracts that will be coming up for renewal as early as September 2002. Therefore, it is critical to the public to have Congress renew the Act before its 2002 expiration.

In conclusion, the Price-Anderson indemnity system should be continued in substantially its present form. It should also be clarified that the Act does apply to the new National Nuclear Security Administration. After nearly forty-five years of Price-Anderson Act indemnification, private industry has assumed, as Congress intended, a larger role in assisting the Federal Government in carrying out its own nuclear activities without any significant damage or injury to the public. In other words, Price-Anderson contractor indemnification is a system that has worked well. It should promptly be extended again.

Thank you again for this opportunity to testify before your Subcommittee.

Mr. LARGENT. Thank you, Dr. Womack. I am not even going to attempt to try to pronounce your name. Is it Quattrocchi?

Mr. QUATTROCCHI. Quattrocchi.

Mr. LARGENT. Quattrocchi. He is a senior vice president of Underwriting for the American Nuclear Insurers, and we welcome your testimony. You have 5 minutes to summarize it.

STATEMENT OF JOHN L. QUATTROCCHI

Mr. QUATTROCCHI. Thank you for the opportunity to address the subcommittee today, Mr. Chairman. Yes, the name is John Quattrocchi, although for obvious reasons most people refer to me as John Q. I am chief underwriting officer at the American Nuclear Insurers, which I will abbreviate today as ANI.

I am here today representing the member companies of ANI, which are some of the largest insurers in the United States. ANI, by way of background, is a joint underwriting association or a pool of insurance companies that were formed for the very special purpose of insuring the nuclear risk. We were created in 1956 in response to Congress' desire for the insurance industry to find a way to insure what was then a new technology. Now, we worked very closely with Congress in those early days to develop the Price-Anderson Act, which is essentially an insurance program.

The law had several purposes in mind. The first was to encourage private development. The second was to establish a framework for handling potential claims. The third was to provide a ready source of funds to compensate injured victims of an accident. My purpose then today is to let you know that from our perspective, as insurers, the act has served the American public well and should be renewed with little, if any, change.

Let me just quickly mention a couple of the key provisions of the act that have allowed us, as insurers, to provide this market for more than 40 years without interruption. First, the law requires reactor operators to maintain primary financial protection equal to the maximum amount of liability insurance available from private sources. That requirement is satisfied under nuclear liability policies that we write. Over the years, the primary insurance limit has increased from $60 million in 1957 to $200 million today. The primary limit was last increased in 1988, coincident with the last renewal.

Second point, in the event of loss that exceeds the primary limit, the law requires reactor licensees to participate in what is called a secondary financial protection program, which we at ANI administer. Under that program, each licensee is retrospectively assessable for any loss in excess of a primary limit up to a maximum assessment of roughly $88 million per reactor, per accident. So the second layer of protection is actually drawn from reactor operators' own funds. And with 106 reactors still in this secondary program, the level of financial protection available for the public is just over $9.5 billion.

Now, there are a number of other key provisions in the law critical to our interests as insurers and to the public. Those are outlined in my formal testimony, and I won't go through them now.

But just some other quick points. I mentioned earlier that our primary limit has not been increased since 1988, and obviously inflation has taken a toll. So assuming that the act is renewed essentially in tact, we will canvass our member insurance companies to see if we can increase that primary limit to something in the range of $300 million. We have also begun talking with industry representatives about their interest in a possible new coverage that would pay the retrospective assessment in the second layer for the reactor that has the accident. We think that in the unlikely event of an accident that requires assessments, the utility that actually suffers the accident will be under the most severe financial pressure. And this new coverage would shift that pressure to insurers, at least for one full retrospective assessment.

Now, I will just sum up by saying that the financial protection this law provides far surpasses any other system which we know

of. The act is clearly in the public interest. In its first true test in 1979, after the Three Mile Island accident, it served the public well. We, as insurers, responded under the act within 24 hours of the evacuation advisory. We made emergency assistance payments to some 3,100 families without requiring a liability waiver of any kind. I was part of that effort, and I am proud that we were able to help those people affected by the accident.

Now, there is a little amusing story, and a short story, I should add, that I shared with the Senate Energy Committee yesterday and I would like to share with you today. I think it illustrates the difficult time that was evident during that accident. The insurance team that I was with was staying in a motel that was roughly 10 miles from the accident site. And the motel was very nearly deserted. At breakfast one morning, I spotted a young family, a husband and wife, two children. The husband and wife were clearly distraught at what they thought would be serious consequences here to the children.

A waitress walked over to the table and she tried to console the family. She said to them, "Do you see those people seated over there? They are with the insurance company, and there is no way they would be here if we were in any real danger." And then she added, "But watch them very carefully, because when they leave we leave."

Now, I don't expect that to happen again, but if it does, the public needs the protection that this act provides. We, therefore, urge the members of the subcommittee and the full committee to support renewal of the act in its existing form.

I thank you for your time and the opportunity to express the views of insurers on this important issue. I would be happy to respond to questions, and I would ask that my full testimony be entered into the record. Thank you.

[The prepared statement of John L. Quattrocchi follows:]

PREPARED STATEMENT OF JOHN L. QUATTROCCHI, SENIOR VICE PRESIDENT, UNDERWRITING, AMERICAN NUCLEAR INSURERS

Mr. Chairman and distinguished members of the Subcommittee, I am John Quattrocchi, Senior Vice President, Underwriting at the American Nuclear Insurers—or ANI. Joining me today is Mr. Tim Peckinpaugh, Washington, D.C. Counsel to ANI. We appear today on behalf of the member insurance companies of ANI. The National Association of Independent Insurers also joins in our statement. We appreciate your invitation to present our views on the nuclear risk with a special focus on the financial protection requirements of the Price-Anderson Act.

ANI is a joint underwriting association that acts as managing agent for its member insurance companies. We are, in effect, a "pool" of insurance companies formed for the purpose of insuring a unique risk. Together with our reinsurance partners from around the world, we represent the worldwide insurance community.

We will not dwell on the advantages of nuclear power. We are not advocates for any particular energy source. However, as professional insurers and long-term observers of the energy scene, we believe nuclear power represents a safe, reliable and environmentally friendly part of our nation's energy mix. The nuclear industry has achieved an impressive safety record and, as insurers, we are proud of the role we've played in supporting their efforts.

ANI and its predecessor organizations were created in 1956 in response to Congress' urging that insurers find a way to insure what was then a fledgling technology. We worked closely with Congress and with the industry to develop the Price-Anderson law. The law is essentially an insurance program that had several purposes in mind.

- The first was to encourage the private development of nuclear power.

- The second was to establish a legal framework for handling potential liability claims.
- And the third was to provide a ready source of funds to compensate injured victims of a nuclear accident.

The Act represents a careful balancing of the interests of the public as private citizens and as participants in and beneficiaries of private business enterprise. We also believe the Act has been critical in enabling us to provide stable, high quality insurance capacity for nuclear risks in the face of normally overwhelming obstacles for insurers—those obstacles being catastrophic loss potential, the absence of credible predictability, a very small spread of risk and limited premium volume. This has been accomplished for more than four decades without interruption and without the "ups and downs" (or market cycles) that have affected nearly all other lines of insurance.

KEY PROVISIONS OF THE PRICE-ANDERSON ACT

Financial Protection[1] *. . . In Two Layers*

To assure a source of funding to compensate accident victims, the law requires reactor operators to maintain primary financial protection equal to the maximum amount of liability insurance available from private insurance sources at reasonable terms.[2] This provision has enabled insurers to develop and sustain secure, high quality insurance capacity from worldwide sources. Evidence of this lies in the stability of limits, price and coverage that insurers have provided in what is a very special line of business. Indeed, primary insurance limits actually increased after the Three Mile Island (TMI) accident in 1979 from $140 million to $160 million, and prices rose only modestly. The primary limit was last increased to $200 million in 1988 coincident with the last renewal of the Act. This limit is written by ANI at each operating power reactor site in the U.S., which satisfies the requirement for primary financial protection.

The Act also requires reactor operators to participate in an industry-wide retrospective rating program for loss that exceeds the primary insurance limit.[3] ANI writes a Secondary Financial Protection (SFP) Master Policy through which we administer the SFP program. Under this policy, each insured is retrospectively assessable for loss that exceeds the primary insurance limit up to a maximum retrospective assessment currently set at $88.095 million (adjusted every five years for inflation) per reactor, per incident. In other words, the second layer of protection is drawn from reactor operators' own funds. Insurers have a contingent liability to cover potential defaults of up to $30 million for one incident or up to $60 million for more than one incident. Under the terms of the contract, however, ANI would expect to be reimbursed with interest for any funds it advances under this program. With 106 reactors in the program, the total level of primary and secondary financial protection is just over $9.5 billion ($200 million in the primary layer + $88.095 million in the secondary layer X 106 reactor units participating).

Limitation on Aggregate Public Liability[4]

The Act limits the liability of reactor operators or others who might be liable for a nuclear accident to the combined total of primary and secondary financial protection, though Congress is committed to providing additional funds if financial protection is insufficient.[5] Knowing the extent of one's liability provides economic stability and incentives that would not exist without a limit.

Legal Costs Within the Limit[6]

The expenses of investigating and defending claims or suits are part of and not in addition to the limit of liability. The inclusion of these costs within the limit enables insurers to offer their maximum capacity commitments without fear of exceeding those commitments. This provision is absolutely essential if insurers are to maintain and hopefully increase the assets they place at risk.

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[1] Defined in Section 11.k. of the Atomic Energy Act of 1954, as amended.
[2] The Atomic Energy Act of 1954, as amended, Section 170.b.(1).
[3] *Ibid.*
[4] The Atomic Energy Act of 1954, as amended, Section 170.e. (1) (A) and Section 170.o. (1) (E).
[5] The Atomic Energy Act of 1954, as amended, Section 170.e. (2).
[6] The Atomic Energy Act of 1954, as amended, Section 170.e. (1) (A).

Economic Channeling of Liability [7]

The Act channels the financial responsibility and insurance obligation for public liability claims to the nuclear plant operator. This helps assure that injured parties will be able to establish with certainty liability for a nuclear accident that will be backed by solid financial resources to respond to those liabilities.

Waiver of Defenses [8]

In the event of what is called an Extraordinary Nuclear Occurrence (ENO),[9] insurers and insureds waive most standard legal defenses available to them under state law.[10] The effect of this provision is to create strict liability for a severe nuclear accident. Claimants in these circumstances need only show that the injury or damage sustained was caused by the release of nuclear material from the insured facility. Fault on the part of a particular defendant does not have to be established.

Federal Court Jurisdiction in Public Liability Actions [11]

Historically, state tort law principles have governed nuclear liability determinations. The Price-Anderson Act provides for a federal overlay to the application of state law. The Act confers jurisdiction over public liability actions on the Federal District Court in which the accident occurs. This removes the confusion and uncertainties of applicable law that would otherwise result when multiple claims and lawsuits are filed in multiple courts. The provision also reduces legal costs and speeds the compensation process.

Precautionary Evacuations [12]

The system anticipates that insurers will provide immediate financial assistance to people who are forced to evacuate their homes because of a nuclear accident or because of imminent danger of such an event.

The Act, and these provisions in particular, have stood the test of time and served the public well as demonstrated by the response at Three Mile Island.

THE ACCIDENT AT THREE MILE ISLAND

The accident at Three Mile Island occurred on March 28, 1979. Within twenty-four hours of the Pennsylvania Governor's advisory for pregnant women and preschool age children to evacuate a five-mile area around the site, we had people in the area making emergency assistance payments. Two days later, a fully functioning claims office staffed with some 30 people was open to the public. The claims staff grew to over 50 people within the next two weeks. All of the claims staff came from member insurance companies from around the country. I spent about 10 days at the claims office shortly after it opened to lend whatever support I could.

As the office was being set up, we placed ads on the radio, television and in the press informing the public of our operations and the location of the claims office. Those people affected by the evacuation advisory were advanced funds for their immediate out-of pocket living expenses, that is to say, expenses for food, clothing, shelter, transportation and emergency medical care. Approximately $1.3 million in emergency assistance payments were made to some 3,100 families without requiring a liability waiver of any kind.

We responded as quickly as we did because we had prepared for emergencies in advance. Emergency drills were conducted periodically, and an emergency claim response manual helped guide our response. Checks and other claim forms that had been pre-printed and stored for emergencies were immediately available to us. The insurance industry received high praise for its quick response at TMI. In responding as we did, we helped to alleviate some of the fear and dislocation of those affected by the accident.

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[7] The Atomic Energy Act of 1954, as amended, Section 11.t. and 170.c.

[8] The Atomic Energy Act of 1954, as amended, Section 170.n. (1).

[9] Defined in Section 11.j. of the Atomic Energy Act of 1954, as amended. Without citing all the specifics, the term refers to a significant nuclear incident that results in severe offsite consequences.

[10] The legal defenses waived in the policy include (i) any issue or defense as to the conduct of the claimant or the fault of the insured, (ii) any issue or defense as to charitable or governmental immunity, and (iii) any issue or defense based on any statute of limitations if suit is instituted within three years from the date on which the claimant first knew, or reasonably could have known, of his bodily injury or property damage and the cause thereof.

[11] The Atomic Energy Act of 1954, as amended, Section 170.n. (2).

[12] Defined in Section 11.gg. of the Atomic Energy Act of 1954, as amended.

POLICY COVERAGE AND CLAIMS EXPERIENCE

The nuclear liability policy written for nuclear site operators is designed to respond to an insured's liability for damages because of bodily injury or offsite property damage caused by a large, sudden catastrophic accident. However, it can also respond to allegations of injury from very small amounts of nuclear material. That bears repeating. In addition to providing coverage for catastrophic events, we are providing coverage for alleged offsite damages from normal plant operations.

All of our insured facilities release very small amounts of material within acceptable regulatory limits. But the public perception of what is "acceptable" and what constitutes "damage" is a moving target. Indeed, almost all of our claims allege injury or damage (or fear of future injury or damage) from little or no documented radiation exposure. And, with the exception of the accident at Three Mile Island, few of the claims from members of the offsite public are the result of a clearly identifiable event. Instead, our claims experience is more related to routine releases and the latent injury phenomenon now popular—at least in the U.S.—in the toxic torts arena. The alleged damages usually involve somatic, psychosomatic or genetic effects from exposure to radiation at de minimis levels.

From inception, ANI has handled some 205 reported claims or incident notifications. We've paid just under $187 million for indemnity and legal defense and have incurred losses of $463 million, all through March 1 of this year. The difference between the paid and incurred loss figures represents what is reserved for indemnity and defense on outstanding claims.

Radiation claims are costly to defend and there is often no relationship between the amount of radiation alleged and the expense necessary to defend the claim. While the judicial process is expensive, it does expose claims that have no basis in scientific fact. Given the finite resources available to compensate truly injured victims, it serves no one's interest for insurers to compensate claims without merit. The importance of the legal framework established in the Act, including the cost of defense within the system, cannot therefore be overstated.

NRC'S REPORT TO CONGRESS . . . PRIMARY LIABILITY LIMITS

In its 1998 Report to Congress on the status of the Act, the NRC strongly supported reauthorization of the Price-Anderson Act and offered eight recommendations. In the interest of time, and because the Subcommittee is, I'm sure, familiar with the report, I will focus particular attention on just one of the recommendations—specifically, that Congress discuss with insurers the potential for increasing the primary liability insurance limit. The NRC indicated in its report that an increase to roughly $350 million would at least keep pace with inflation since 1957.

As was noted earlier in my testimony, the Act requires power reactor licensees to maintain primary financial protection equal to the maximum amount of liability insurance available from private sources at reasonable terms. But for this provision, it is doubtful that limits at the levels written could have been sustained without interruption or fluctuation for more than forty years. To illustrate the point, when, in the mid-1980's, liability insurance became unavailable at almost any price for conventional lines of business, nuclear liability insurers continued to provide a stable market for their limited customer base—thanks, in part, to this provision.

Liability limits have been increased periodically from $60 million in 1957 to $200 million presently. The limit was last increased to its present level in 1988 coincident with the last renewal of the Act. The attached Table of Limits outlines the history of primary liability limits from 1957.

We believe an increase in the level of primary insurance coverage would benefit the system and enhance public protection for a number of reasons:

(1) The existing limit has not changed since 1988 and its value has, in fact, been eroded by inflation. When measured against the rate of inflation from 1988 to June 1998, the limit would have grown to roughly $275 million. When measured against inflation from 1957 to June 1998, the limit would have increased to about $350 million.

(2) An increase in the primary limit to reflect the impact of inflation is consistent with inflationary increases mandated by the Price-Anderson law in the second layer. Section 170.t. of the Act requires that the maximum retrospective premium in the second layer be adjusted at five-year intervals. The maximum retrospective premium in the second layer has, in fact, been increased twice since 1988 to reflect the impact of inflation.

(3) A higher primary limit would provide an added buffer between loss in the primary layer and retrospective assessments on utility operators in the second layer. Sound funding for the remote but nevertheless possible nuclear catastrophe calls for pre-funding a substantial portion of the costs of that accident.

The higher the potential retrospective liabilities on the nuclear industry in the second layer, the more desirable reasonable increases in the primary insurance layer become.

(4) The number of reactor licensees can be expected to decrease in the coming years as reactor units are sold to a relatively smaller number of buyers. The effect of this would be to substantially increase the maximum potential retrospective assessment on those remaining operators at a time of severe economic stress for nuclear utilities generally—that is to say, following a large-scale nuclear accident. In these circumstances, a higher primary liability limit would provide a better balance between pre- and post-funded layers of accident protection, in effect enhancing the protection to the public.

(5) Deregulation of the electric utility industry may hamper a utility's ability to pass on to ratepayers the cost of a retrospective assessment. A higher primary limit would reduce the chances of, or at least delay, an assessment in the second layer.

Consistent with the long-standing objective of Congress to provide the most financial protection possible to compensate the public, we will work with our members and reinsurers to develop higher primary insurance limits coincident with the renewal of the Act. This assumes the Act is renewed in essentially its existing form. Any effort on our part to increase the primary limit would also have to be balanced against the needs and desires of our customer base. If these needs can be balanced, our goal would be to develop only capacity that is financially secure and committed for the long term. While I cannot provide any commitments at this time, a reasonable goal might be a primary limit in the range of $300 million, again assuming a satisfactory renewal of the Act.

POSSIBLE NEW PROTECTION IN THE SECOND LAYER

As my testimony has indicated, in the unlikely event that retrospective premiums in the second layer need to be assessed because of a severe nuclear accident, those assessments will be levied at a time of great political and financial stress. The pressures on the utility that suffers the accident will, in all likelihood, be the most severe. For that reason, we have begun to discuss with the industry a potential new coverage under the existing Secondary Financial Protection (SFP) program that would pay up to one full retrospective premium (currently up to $88.095 million) on behalf of the utility at whose site the accident occurs. Payment of this retrospective premium would be made on a guaranteed cost basis—that is to say, we would not expect to be reimbursed. Since coverage would apply on a guaranteed cost basis, we would have to secure additional capacity over and above whatever additional capacity might be developed for the primary layer.

We envision that coverage would be added by endorsement to the existing SFP program for an additional per reactor premium. We would prefer that coverage be purchased on a voluntary basis and not made part of the financial protection requirements. For the coverage to be viable, at least half the number of reactor units in the SFP program would have to participate.

This coverage would shift to the insurance industry some of the strain that would undoubtedly be felt within the utility industry after a severe nuclear accident. If the potential new coverage is something the industry desires, we will try to implement it coincident with the renewal of the Act, or as soon thereafter as reasonably possible.

PRICE-ANDERSON AS A SUBSIDY?

Some have argued that Price-Anderson is a subsidy for the nuclear industry. For what it's worth from our perspective as independent insurers, that view is clearly inaccurate. We are not aware of any payments made by the Federal Government to private licensees under Price-Anderson. Indeed, the industry not only pays the cost of the insurance required by the Act, it has paid millions of dollars in indemnity fees and has assumed more than $9 billion in potential retrospective assessments to compensate injured accident victims—all of this at no cost to the government.

Some argue that the Act's limitation on liability is a subsidy for the industry in that it limits potential recoveries of accident victims. The fact is, however, that, in exchange for the limit on liability, the Act provides for a large, ready source of funds for accident victims that would not otherwise exist.

Insurers have a great deal of experience handling litigation that is "unfettered" by limitations on liability. No case stands out in my mind more than the Bhopal accident in India in 1984. As many as 4,000 people died and another 500,000 were injured. After years of litigation, Union Carbide settled with the Indian Government

for $470 million—or roughly $1,000 in compensation for each of those killed or injured.

The simple fact is that there is always a limit on liability—that limit equal to the assets of the company at fault. Those who helped shape the Price-Anderson Act understood that fact. It was their belief that those who share in the benefits of nuclear energy should also share in the risks through a system of solid financial protection provided by industry and by government.

Beyond serving the public interest, the limitation on liability enables insurers to quantify their potential liabilities. Without the limitation, suppliers and others who might incur potential nuclear liabilities would be forced to seek separate insurance protection for their own accounts, in turn, exposing insurers to unacceptable accumulations. In these circumstances, the level of available liability insurance might well diminish.

CONCLUSION

To the best of our knowledge, the financial protection that the Act provides the public far surpasses the performance of any other system in place in the United States. The essential fact is that the public is far better off with this system of financial protection than without it. For us as insurers, its provisions make an otherwise difficult risk insurable. We therefore urge the members of this Subcommittee to support expeditious renewal of the Act with little if any change as recommended by the NRC report to Congress and the Administration's National Energy Policy released last month. In terms of the legislation pending before this Subcommittee, we support in general the Price-Anderson reauthorization provisions of H.R. 1679, the Electricity Supply Assurance Act of 2001 (Subtitle A of Title I).

We are grateful to the Committee for the opportunity to express the views of insurers on this important issue.

Table of Limits

History of Maximum Nuclear Liability Insurance Available from 1957 to Present

Year	Liability Limits ($ in Million)	% Increase
1957	60	-----
1966 *	74	23.3
1969	82	10.8
1972	95	15.8
1974	110	15.8
1975 *	125	13.6
1977	140	12.0
1979	160	14.3
1988 *	200	25.0

* Coincident with the renewal of the Price-Anderson Act.

Mr. LARGENT. So ordered, and we thank you, Mr. Quattrocchi.

And now we recognize Ms. Aurilio, who is the legislative director with U.S. Public Interest Research Group. You have 5 minutes. Thank you.

STATEMENT OF ANNA AURILIO

Ms. AURILIO. Thank you. Good afternoon. My name is Anna Aurilio, and I am the legislative director with U.S. PIRG. We are the national lobbying office for the State public interest research groups. We are non-profit, non-partisan consumer, environmental and good government organizations active across the country. I have also submitted this testimony on behalf of Friends of the Earth.

We have a long history of working for clean, affordable energy future. We actually have a web site now called newenergyfuture.com to talk about our vision. Our goal is to shift away from polluting dangerous sources of energy, such as nuclear and fossil energy, and

to increase energy efficiency, which saves consumers money, and clean renewable energy sources.

Nuclear power is not part of our vision for the future. It is unsafe, unreliable, uneconomic, and generates dangerous wastes for which there is no safe solution. We believe it should be phased out as soon as possible and should not be encouraged as a future energy source. We also believe that the President's energy plan is very misguided in this regard. He believes that we would need to build 1,300—at least 1,300 new power plants to meet future electricity demand.

In fact, both the Department of Energy's clean energy future report and the Union of Concerned Scientists report show that we can meet the vast majority of future electricity demand by increasing energy efficiency, shifting to renewable energy sources. This would all occur at consumer savings of tens or hundreds of billions of dollars. And that at least half of the 1,300 power plants that are proposed by the President are actually already in the pipeline. Whether anybody likes them or agrees with them or not, they are already in the pipeline, according to the Energy Information Administration. So we actually don't need to build any dirty, new power plants.

Nuclear power wouldn't exist today if it weren't for massive Government subsidies and other unfair policies. In fact, I have even quoted Jerry Taylor of the Cato Institute who says, "The nuclear industry is purely a creature of Government. The administration needs to practice the free market rhetoric that it preaches and put away its nuclear pom-poms."

The Price-Anderson Act represents just one of the unwarranted subsidies enjoyed by the nuclear industry. Others include the lion's share, or at least 60 percent, of Federal research and development money, a Federal nuclear waste disposal program and more than $100 billion in ratepayer bailouts dues to State deregulation programs.

The Price-Anderson Act, which is what I am going to focus the rest of my testimony on, guarantees protection for the nuclear industry while the public would have to beg before Congress for compensation if there were a large catastrophic nuclear accident. It does not guarantee full compensation for victims of a nuclear accident; it perpetuates a long history of subsidies and unfair policies, which reward the industry at public expense; and it exempts contractors from liability for public damages, as Congressman Markey pointed out, even if they were reckless or wilfully negligent.

The Price-Anderson Act was first passed in 1957. It was supposed to be a temporary measure for a fledgling industry. Today, the industry has grown enormously, and it has reaped enormous profits. It has reaped substantial benefits from Price-Anderson coverage, from the Nuclear Waste Program, from ratepayer bailouts at the State level. Meanwhile, victims of a major nuclear accident would still not be guaranteed compensation in case of an accident. This is not good government. The Price-Anderson Act should not be renewed and should either be radically reformed or replaced by legislation that truly protects the public and truly provides incentives for safe conduct.

I want to highlight some of our concerns with nuclear safety. First of all, the nuclear fleet today is aging, and we are extremely concerned about some of the aging related problems that seem to be ignored by the industry and the regulators. In particular, over the last year, according to the Union of Concerned Scientists, there have been at least nine reactor shutdowns due to aging related problems. Rather than provide incentives or changing safety rules to make it easier for the nuclear industry to extend its licenses, I would hope that this committee actually would look a little bit more closely at aging related problems. I think this is a serious problem.

Going back to the Price-Anderson Act with regard to new reactors, the gas-cooled reactor designs, which actually Congress, wisely, in 1995, killed funding for one of the gas-cooled reactor designs, in part, because two National Academy of Sciences studies said that it wasn't warranted, and in part because it was going to cost an enormous amount of money for taxpayers, these designs lack conventional containment. And, again, as one of the congressmen pointed out, the Price-Anderson Act actually shields builders and designers of nuclear power plants for liability, and yet the folks who are promoting these new designs that would lack conventional containment want to pay less, not more, in case of a nuclear accident. That doesn't make sense, and I have a solution for those who worry about smaller nuclear reactors not wanting to pay as much as the——

Mr. BARTON. Could you give us your solution in the next 15 seconds?

Ms. AURILIO. Absolutely. I am sorry. I didn't have one of those lights in front of me.

Mr. BARTON. I know. I have given you an extra minute, so we are trying to be gracious.

Ms. AURILIO. I will wrap up by saying for those folks who worry about having to pay into the fund, new nuclear reactors just shouldn't be covered by Price-Anderson, and you should go to the private industry and get your own coverage. Thank you.

[The prepared statement of Anna Aurilio follows:]

PREPARED STATEMENT OF ANNA AURILIO, LEGISLATIVE DIRECTOR, U.S. PUBLIC INTEREST RESEARCH GROUP ON BEHALF OF THE U.S. PUBLIC INTEREST RESEARCH GROUP AND FRIENDS OF THE EARTH

Good morning, my name is Anna Aurilio and I'm the Legislative Director of the U.S. Public Interest Research Group, or U.S. PIRG. U.S. PIRG is the national office for the State PIRGs, which are environmental, good government and consumer advocacy groups active around the country. Thank you for the opportunity to speak today.

The state PIRGs have a long history of working for a clean affordable energy future. Our goal is to shift from polluting and dangerous sources of energy such as nuclear and fossil energy to increased energy efficiency and clean renewable energy sources.

Nuclear power is unsafe, unreliable, uneconomic and generates long-lived radioactive wastes for which there is no safe solution. We believe it should be phased out as soon as possible and should not be encouraged as a future energy source.

Nuclear power would not exist today if it weren't for massive government subsidies and other unfair policies. Jerry Taylor of the Cato Institute agrees.

In the final analysis, the nuclear industry is purely a creature of government. The administration needs to practice the free-market rhetoric that it preaches and put away its nuclear pompoms.[1]

The Price Anderson Act represents just one of the unwarranted subsidies enjoyed by the industry. Others include: the lion's share, or 60%, of federal research and development dollars since 1948[2]; a federal nuclear waste disposal program[3], and more than $100 billion in ratepayer bailouts from state utility deregulation plans.[4]

During reauthorization of the Price-Anderson Act in the 1980's, the PIRGs, the Environmental Policy Institute (the predecessor to Friends of the Earth) and other environmental, consumer and taxpayer groups advocated for reforms of the Price Anderson Act. Our policy then, as it is now, is that the American public deserves a sound and responsible nuclear accident policy. Such a policy would accomplish three fundamental goals:

- Assure full compensation of any nuclear accident victims,
- Protect taxpayers from subsidizing nuclear industry negligence, and
- Increase safety incentives and require high standards of industry accountability.

Unfortunately, the Price Anderson Act as (amended in 1988) does not accomplish these goals. Instead, this Act does not guarantee full compensation for victims of a nuclear accident, perpetuates a long history of federal subsidies and policies which reward the nuclear industry at public expense, and exempts contractors from liability for public damages even if they were reckless or willfully negligent.

BACKGROUND

Enacted in 1957, the Price Anderson Act was intended to be a temporary solution to a temporary problem—the refusal of insurers to underwrite nuclear risks. According to a 1957 Senate report, it was expected that after the Act expired in ten years, "...the problem of reactor safety will be to a great extent solved and the insurance people will have had an experience on which to base a sound program of their own."[5]

Forty-four years later, few of these expectations have been realized. Many of the problems of reactor safety continue to be unsolved. In addition certain reactor components such as reactor pressure vessels and steam generator tubes have exhibited unanticipated aging-related problems. The nuclear industry continues to be unwilling to assume the risks of its activities.

In its current form, the Price-Anderson limits liability for damages to the public in the case of a nuclear accident. The Act expires on August 1, 2002. Existing reactors will continue to operate under the current system if it is not extended.

Price Anderson currently requires owners of licensed commercial reactors to carry $200 million of liability insurance. If claims following an accident exceed that amount, all commercial reactor operators must contribute up to $83.9 million per reactor. With 106 reactors currently covered by Price-Anderson, the total pool of funds is approximately $9.09 billion for public compensation.[6] The public has no legal right to compensation for damages exceeding the limit. Price-Anderson leaves this question to Congress.[7] Companies that build, design, and supply parts for nuclear power plants are completely exempt from public liability.[8]

DOE contractors are indemnified up to a total of $9.43 billion. This means taxpayers could pay $9.43 billion in case of an accident cause by a DOE contractor regardless of the contractor's conduct. While the 1988 amendments allow DOE to assess civil fines and penalties against its contractors, it specifically exempts seven non-profit institutions. These institutions plus their for-profit subcontractors are exempt from civil penalties.

The seven institutions listed in the Price Anderson Act are: The University of Chicago for activities at Argonne National Laboratory; The University of California for activities at Los Alamos; Lawrence Livermore, and Lawrence Berkeley National Laboratories; American Telephone and Telegraph and its subsidiaries for activities at Sandia National Laboratory (now operated by Lockheed Martin which is subject

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[1] Taylor, J., "Nuclear Power Play", Washington Post, 5/18/01.
[2] Congressional Research Service
[3] http://www.greenscissors.org/energy/nuclearwastefundfee.htm
[4] http://www.safeenergy.org/ratepayer.htm
[5] Berkovitz, Dan "Price-Anderson Act: Model Compensation Legislation?—The Sixty-Three Million Dollar Question, Harvard Environmental Law Review, 1989.
[6] Holt M. and Behrens C., "Nuclear Energy Policy", Congressional Research Service IB88090, 3/22/01, p.14.
[7] 42 U.S.C. 2210(e).
[8] Berkovitz, Dan "Price-Anderson Act: Model Compensation Legislation?—The Sixty-Three Million Dollar Question, Harvard Environmental Law Review, 1989.

to civil penalties); Universities Research Association for activities at FERMI National Laboratory; Princeton University for activities at the Princeton Plasma Physics Laboratory; the Associated Universities Inc for activities at Brookhaven National Laboratory (now operated by Brookhaven Science Associates which is subject to civil penalties) and Battelle Memorial Institute for activities associated with the Pacific Northwest Laboratory.[9]

THE PRICE ANDERSON ACT IS AN UNWARRANTED SUBSIDY TO THE NUCLEAR INDUSTRY

Because reactor operator liability is limited, the Price Anderson Act denies accident victims full compensation and will inevitably result in either taxpayers or victims footing the bill for catastrophic nuclear accidents. Because DOE contractors are not held responsible for any public damages in nuclear accidents they cause, the taxpayer will foot the bill for commercial nuclear waste transport accidents, accidents at research reactors and weapons site cleanups. Taxpayers will foot the bill for DOE contractor accidents even if they resulted from recklessness, gross negligence, or intentional disregard for public health and safety. The companies that design, build and supply parts for nuclear power plants are totally exempt from any liability for damages to the public. These commercial nuclear contractors are not responsible for damages to the public even if they were reckless, grossly negligent, or intentionally disregarded public health and safety.

Estimates of the value of this subsidy to nuclear power plant owners range from $3.45 million[10] to $33 million[11] (2001 dollars) per reactor per year. With 106 reactors covered, is a total annual subsidy to the nuclear industry of $366 million to $3.5 billion.

The nuclear industry and its cheerleaders keep touting the safety of nuclear power and its cost-effectiveness. Yet, they are here today, asking that they not be held fully responsible for the public consequences of designing, building and operating these "safe" reactors and transporting the lethal waste generated from these activities.

Even the Vice President admits that the industry needs continued subsidies. If the Price Anderson Act is not renewed, Vice President Cheney said, "Nobody's going to invest in nuclear power plants."[12]

The industry cannot have it both ways. If nuclear power is cost-effective and safe, then the nuclear industry should bear full liability for the costs of a nuclear accident. Insurance for these risks should be internalized as a cost of doing business, just as it is for every other industry. The Act should not be re-authorized in its current form. Either Congress should radically reform the Price Anderson Act or it should enact separate legislation, which will provide fair and full compensation to the public in the event of a nuclear accident.

THE PRICE ANDERSON ACT PROTECTS THE NUCLEAR INDUSTRY BUT NOT THE PUBLIC

Under Price Anderson, nuclear reactor operators get a guarantee of limited liability for public damages in the event of a nuclear accident. The designers, builders and suppliers of the reactors are exempt from all liability for damage to the public. DOE contractors are fully indemnified by the government. In contrast, the public gets no guarantee of full compensation.

All players in the last Price Anderson debates, including the Nuclear Regulatory Commission (NRC), the Department of Energy, and the nuclear utilities testified in favor of full compensation for victims. Because liability is limited to a little more than $9 billion, no one is legally obligated to pay damages over the limit and no one has a right to recover for those damages. The current system puts much of the risk of a catastrophic nuclear accident on the shoulders of its victims. Victims would have to plead their case before Congress.[13]

The question of who should pay when damages exceed the limit has never been fully resolved. If there is an accident, the money will have to come from somewhere, and we see only three choices. It will come from the victim's pockets, from the taxpayers' pockets, or the industry's pockets. We believe it should come from the indus-

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[9] U.S. DOE, "Report to Congress on the Price Anderson Act," March 1999, p. 23.

[10] Heyes, A, and Liston-Heyes, C. "Liability Capping and Financial Subsidy in North American Nuclear Power; Some Financial Results based on Insurance Data," Department of Economics, University of London, England.

[11] Dubin, J.A. and Rothwell, G.S. "Subsidy to Nuclear Power Through Price Anderson Liability Limit," Contemporary Policy Issues, Vol III, July, 1990.

[12] "Cheney Says Push Needed to Boost Nuclear Power," Reuters News Service, 5/15/01.

[13] Magavern, W., Testimony to the Presidential Commission on Catastrophic Nuclear Accidents, 10/25/89.

try. However, under the current law, it seems inevitable that taxpayers would foot the bill or victims would go uncompensated.

The Price Anderson Act calls for Congressional action to "provide full and prompt compensation to the public for all public liability claims resulting from a disaster of such magnitude."[14] On July 29, 1987, during the floor debate on amendments to the house bill (H.R. 1414) that was ultimately enacted into law, Representative Morris Udall described compensation for damages above the limit as the "third level."

The third layer is the disaster layer. Let us say the Indian Point Nuclear Plant in New York has a meltdown or some very serious matter affecting whole cities and regions. We could not decide whether that ought to be $20 billion or $50 billion or $100 billion or what, so we decided that the third layer will be determined by a commission appointed by the President and given two years to come up and say how we should handle claims above the $7 billion or $8 billion. Obviously, you would have to have a large amount of money, and it should not be the ratepayers of the nuclear utilities who paid for the first two levels. We believe, and so wrote the bill that the third level will come from ratepayers everywhere and taxpayers everywhere and the commission will tell us in advance how we ought to finance this and set it up and distribute the available money.[15]

In 1990, as authorized by the Act, the Presidential Commission on Catastrophic Nuclear Accidents issued a report on "the means of fully compensating victims of catastrophic nuclear accident that exceeds the amount of aggregate public liability."[16] While the report affirmed that victims be fully compensated, it ducked the question of who should pay.[17] It should be no surprise that the Presidential Commission refused to lay the ultimate responsibility for public damages from a catastrophic nuclear accident on the shoulders of the responsible industry. For from being "representative of a broad range of interests" as required by the Price Anderson Act, it consisted entirely of men with ties to the nuclear industry.[18]

We support a mechanism similar to that recommended in a report authored by the NRC in 1983[19]. This would provide a legal guarantee of full compensation for victims. I would also retain the industry's protections against the full liability that it would have if there were no Price-Anderson scheme at all.

Basically, in order to shield both victims and taxpayers from unwarranted risk, the NRC unanimously recommended a system that would subject reactor licensees to annual assessments. Unlike current law which caps total retrospective premiums at $83.9 million, the 1983 NRC reported recommend these premiums be paid until all public liability has been satisfied. The NRC concluded that this approach represents the best alternative for minimizing the potential for both uncompensated losses by the victims of an accident and additional contributions by the taxpayers to meet public liability claims.

According to the NRC report, the key to any fair and effective compensation scheme is the assurance that all valid claims will be paid. The current cap on total liability completely undermines that principle. Victims should not have to plead their case before Congress or go uncompensated. Federal taxpayers should not foot the bill, either.

The nuclear industry that profited from the activities creating the risk of an accident should be obligated to pay all damages through these retrospective premiums. If that became overly burdensome, the industry could always go to Congress to get relief. That way, the burden is on the industry, not the victims or taxpayers.

Currently, if there is an accident above $200 million, each nuclear operator contributes up to $10 million per reactor per year in "retrospective premiums" until the current cap of $83.9 million is reached.[20] In contrast, the 1983 NRC report recommended annual payments of $10 million per plant for as many years as necessary to compensate all public damages. Unfortunately, under pressure from the nuclear industry, all but one of the commissioners reversed their stance by the time Representative Markey chaired a hearing on the issue in July 1986. Commissioner James Asseltstine continued to support the original recommendation of no cap on total liability to protect taxpayers.

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[14] 42 U.S.C. 2210(e).

[15] Report to the Congress on Catastrophic Nuclear Accidents, August, 1990, p.15.

[16] U.S.C. 42 Section 2210 (i).

[17] Washington Post, "Nuclear Claims Envisioned: Panel's Calls for Catastrophic Compensation Omits Source of Funds," 9/21/90.

[18] Testimony of Bill Magavern, Staff Attorney, U.S. PIRG to the Energy and Environmental Subcommittee of the House Interior Committee.9/26/90.

[19] NUREG -0957

[20] Holt M. and Behrens C., "Nuclear Energy Policy", Congressional Research Service IB88090, 3/22/01,

> Having provided by law that the industry's liability would be fixed at a specific dollar level and with new indemnity contracts in effect which reflect this limited liability, I think it will be difficult for the Congress to obtain additional funding from the industry after an accident has occurred. Thus, it is likely that additional funding to pay liability claims, funding which could run into the billions of dollars, would have to come from the federal Treasury.[21]

PIRG and others supported lifting the total liability cap and replacing it with an annual cap during the debate over the 1988 amendments. We believe that this would be a fair way to ensure that victims were compensated and the industry would have an affordable and predictable way to assure this.

NRC recently recommended raising the retrospective premium to $20 million per reactor per year (still capped at $83.9 million). NRC justified this increase that would "... substantially increase the amount of funds available shortly after a nuclear accident to pay public liability claims but should not jeopardize the financial viability of the participating utilities."[22] Provisions to increase this premium are also contained in several bills introduced by members of this committee. Strangely, the NRC has now reversed its earlier recommendation.[23]

As part of a more equitable nuclear accident compensation package, Congress should consider mechanisms to fully compensate victims of a catastrophic accident. One way would be to lift the total liability cap and implement the original 1983 NRC concept of an annual retrospective premium for as many years as necessary to compensate all public damages. Since NRC has more recently stated that the industry could afford a $20 million annual premium and that a higher premium would help victims get compensated faster, Congress should ensure that annual premiums be no lower than $20 million per reactor per year.

THE INDUSTRY CAN AFFORD TO PAY THE FULL COSTS OF AN ACCIDENT:

The nuclear industry opposes paying its own way. Yet this industry has benefited greatly from unjustified federal and state subsidies. With deregulation of many state's electricity industry came billions in bailouts for the industry (and blackouts for hapless Californians!). These bailouts (also known as "stranded costs") have increased the profitability of nuclear power plants according to Lehman Brothers Managing Director and former NRC Commissioner James Asselstine.[24]

According to a report released in 1998 with the Safe Energy Communication Council entitled "Ratepayer Robbery" we estimated these bailouts could total more than $132 billion for just eleven states. Surely an industry that is receiving billions of dollars in public bailouts could afford $20 million per year per reactor to compensate the public in case of an accident. Along with unjustified bailouts, state deregulation bills have left consumers at the mercy of large, unregulated power generators. Several large nuclear operators are enjoying the high prices for electricity generated.

For example, Southern Company, which operates six reactors reported net income for 2000 of $1.313 billion—a record profit for that company. In case of an accident, the $20 million retrospective premium represents less than 9% of their profits.

Entergy, which touts itself as "the fastest growing nuclear operator in the nation."[25]is proposing to build new reactors and currently operates eight reactors, reported $160.9 million in net income for the first quarter of 2001, a nearly 50% increase from the same time last year. A $20 million retrospective premium for all its reactors is less than the profits for one quarter. This is a company that should be embarrassed to ask for a penny of taxpayer assistance.

Exelon Corporation touts itself as the "largest nuclear generation operator in the country with approximately 20% of the nation's nuclear generation capacity."[26]which is proposing to build a risky new reactor that would cut costs by not including conventional containment, reported $586 million in net income last year. This company has testified that the public should fund the work of the government agencies responsible for certifying the safety of these new designs.

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[21] Testimony of James K. Asselstine, before the House Committee on Energy and Commerce, 7/17/86.

[22] NUREG/CR-6617 p. 131.

[23] "NRC Drops Recommendation to Double Some Coverage in Price-Anderson," Platt's Inside NRC, Vol 23, No 11, 5/21/01.

[24] Testimony of James K. Asselstine, Managing Director, Lehmann Brother, Inc. Before the Senate Energy and Natural Resources Committee, 5/3/01.

[25] Testimony of C. Randy Hutchinson, Senior Vice President, Entergy, before the Energy and Air Quality Subcommittee of the House Energy and Commerce Committee, 3/27/01.

[26] Testimony of Edward F. Sproat III, Vice President, Exelon Generation Company, before the Energy and Air Quality Subcommittee of the House Energy and Commerce Committee, 3/27/01.

Duke Energy reported $1.776 billion in net income last year. Duke Power operates 7 reactors. A $20 million retrospective premium represents less than 8% of their profits.

CONCLUSION

The Price Anderson Act was supposed to be a temporary measure for a fledgling industry. Today that industry has grown enormously and has reaped substantial benefit from this and other taxpayer subsidies. Meanwhile, victims of a major nuclear accident would be left to plead their case before Congress. This is not good government. The Price Anderson Act should not be renewed and should be either radically reformed or replaced by legislation that truly protects the public.

Mr. BARTON. Thank you. The Chair would recognize himself for the first 5 minutes of questions.

Mr. Skolds, you indicated that your company had provided a number of White Papers to the Nuclear Regulatory Commission on the proposed design, the Pebble Bed Reactor design, and also some of the issues associated with its licensing. If those aren't proprietary, we would like to have them at the subcommittee.

Mr. SKOLDS. They will be provided.

Mr. BARTON. Okay.

Second question to you, Mr. Skolds, Mr. Strickland is not here, but he has pointed out that we are in the process of shutting down the uranium enrichment plant in this country that is licensed to enrich to 10 percent. My understanding is that the Pebble Bed Reactor that is under review by your company, if it were to be licensed, would require 9 percent enrichment fuel source. Is that correct?

Mr. SKOLDS. Approximately.

Mr. BARTON. How do we get 9 percent fuel when right now the best we could do under current conditions was enrich to 5 percent?

Mr. SKOLDS. Well, regardless of where it comes from, we are in favor of multiple sources and competition in that industry. I don't have a solution for you right now to say this is how we can fix it, but what we are interested in is getting multiple sources of fuel suppliers.

Mr. BARTON. Would they be private sector sources or would they be government sources from overseas or both?

Mr. SKOLDS. I think it would be both.

Mr. BARTON. Okay. And, Mr. Davis, you mentioned your group is about to submit, maybe has submitted, a new reactor design called the AP1000. If in fact a utility were to order that and if in fact it were to be licensed and permitted, once you got through the permitting process, how long would it actually take to build that reactor?

Mr. DAVIS. Once permitted, we are talking about 3 years from the time that the first concrete is in place until the plant loads fuel. If you include the site preparation time and then the startup testing, the total period is 5 years from the time that you complete the licensing until it goes into operation.

Mr. BARTON. But the construction process, you hope, would be 3 years.

Mr. DAVIS. It would be 3 years.

Mr. BARTON. What would the construction process of the Pebble Bed Reactor be, Mr. Skolds?

Mr. SKOLDS. We are studying that right now, but we are looking for 24 months, 18 months to 24 months.

Mr. BARTON. Two years. Okay. Mr. Markey is not here, but when he was here earlier this morning he asked the Chairman of the Nuclear Regulatory Commission a worse-case scenario about a total core meltdown, breach of containment, just the absolute worst imaginable civilian reactor nuclear accident that we could have. My question to you, Mr. Fertel, what is the likelihood—assuming we had a total core meltdown, I can envision that. I cannot envision the containment building failing. What would it take for the containment building to fail in the event we had the worse-case core meltdown?

Mr. FERTEL. It is really hard, Mr. Chairman, to come up with a scenario that would do that. I mean I heard Mr. Markey's question to Chairman Meserve, and you can hypothetically come up with scenarios that can't happen or that have the probability that is so low that it is more likely you are going to hit by an astroid rather than that happening. So I am not sure I can answer that with any accuracy.

Mr. BARTON. Now, I have been told——

Mr. FERTEL. The answer would be it is beyond the realm.

Mr. BARTON. [continuing] that the current containment structures in this country that the operating reactors are encased in could sustain a direct nuclear bomb attack. Is that true?

Mr. FERTEL. It could sustain aircraft flying into them and other types of things but not a nuclear explosion.

Mr. BARTON. So if we were—if they were to be targeted by one of the Russian large thermonuclear warheads——

Mr. FERTEL. You would lose the plant.

Mr. BARTON. The whole plant.

Mr. FERTEL. But then no one would care.

Mr. BARTON. But I mean is that the level at which you have to go to see something——

Mr. FERTEL. Pretty significant.

Mr. BARTON. If there were an earthquake, these things are designed to withstand——

Mr. FERTEL. Yes, sir.

Mr. BARTON. [continuing] 9.0——

Mr. FERTEL. Earthquakes, tornados, all kinds of horrendous types of external events, not nuclear attacks. I think to Mr. Markey's question and even to what Ms. Aurilio said, we firmly believe Price-Anderson actually does a wonderful job of protecting the public, and I am not quite sure how the public gets protected if you don't have it. What has been said is that you only have $9.5 billion worth of protection. So, "it is not unlimited." Well, one, you have set up a process—and I think Congress did a good job in policy space—they took a law that in 1957 did subsidize the industry. In the 1957, you could only get $60 million worth of insurance from firms like ANI. And Congress put $500 million of taxpayer money in and said, "Here is a $560 million protection for third-party liability. And if it goes beyond that, we, Congress, will think about it." But 500 came from taxpayers. Today, there is $9.5 billion; there is zero from taxpayers—zero in the $9.5 billion. If you had an accident that went beyond the $9.5 billion, you could decide where it comes from. You could say industry should pay more, you could say that it should be taxpayer dollars or whatever. It is hard to fathom

an accident. Your comment on Three Mile Island was appropriate. Over 45 years, there has been $190 million paid in aggregate, for everything. So it is hard to fathom.

The thing that Price-Anderson does that I think is very important from a policy space is it doesn't hold Exelon responsible for $9.5 billion; it holds a whole industry responsible. It creates a pool of shared liability. If you have unlimited liability, your liability is very limited; you declare bankruptcy. So it is really, I think, a very sound public policy, and I think, as John Quattrocchi said, it is probably the best third-party liability program in the world.

Mr. BARTON. Last question, Mr. Quattrocchi, and then I will give you a chance to comment on that. Assume that—well, let us assume that Hoover Dam collapses or Grand Cooley Dam or pick any dam. Who pays for the liability if one of these major hydro dams were to collapse and there would be a flood as a consequence of that?

Mr. QUATTROCCHI. Well, to the extent that there is insurance available for that kind of an accident, insurance would pay.

Mr. BARTON. But the owner of the dam doesn't pay, do they? There is not a comparable Price-Anderson—there is no requirement that the owner of the dam pays. If a property owner had private insurance, that private insurer would pay that property damage, but the owner of the dam is not liable, like in the case if there were a nuclear accident. Is that correct?

Mr. QUATTROCCHI. Well, potentially, the owner of the dam could be liable, assuming that there was some sort of negligence on the part of the owner of the dam. The fact is, though, that in terms of level of insurance——

Mr. BARTON. That is just telling us we have to go vote.

Mr. QUATTROCCHI. [continuing] I don't think there is any. The insurance that the Price-Anderson system provides far surpasses any other insurance that is available for the accidents you mentioned. In my testimony, I mention the fact that in the case of Bhopal in 1984, there were 4,000 people killed in that accident. And what happened——

Mr. BARTON. It is just telling us we have three recorded votes instead of one.

Mr. QUATTROCCHI. In the case of Bhopal, there was no limitation on liability, but the fact is that Union Carbide, after years of litigation, sought bankruptcy protection and ultimately settled for $470 million. That is roughly $1,000 for every person killed and injured. Here is a system that provides more than $9 billion of financial protection.

I have heard a lot today about subsidies. I am not sure what subsidies are being provided here. The fact is that in return for limitation on liability there is a large, ready source of funds available to compensate the public. In our minds, as insurers, there is nothing like this system. The public has no greater protection under any other system that we are aware of and we are aware of most of the liability systems in the world.

Mr. BARTON. Okay. The gentleman from Pennsylvania is recognized for 5 minutes.

Mr. DOYLE. Thank you, Mr. Chairman. Ms. Aurilio, you state that the goal of the Public Interest Research Group is to shift away

from dangerous and polluting energies, and I think everybody shares the goal of having energy that is safe and doesn't pollute. Yet when we look at realistically how we are going to meet the energy needs of the country, fossil fuels for at least the next 20-some years, at the very least, are going to continue to supply 80 percent of our power needs. When we had the discussion about greenhouse gases and the Kyoto Protocol and we look at the Europeans and their ability to meet the protocol because they have largely gone to nuclear, which doesn't emit any greenhouse gases.

So you have two technologies that we look at outside of natural gas, coal and nuclear, and the thrust of the Federal Government, in partnership with the private sector and academia, has been to develop ways in which we can burn coal more efficiently and cleaner and to develop nuclear power in such a way that it is safe and reliable. And it seems to me that we have made great strides in both those areas.

So you have one energy source, nuclear, that is clean, doesn't emit any greenhouse gases, would help us deal with the global warming issues that confront the world. And for the past 40 years, I mean I don't know of any incident where we have lost a single life as a result of failure of a nuclear power plant. And we, through the Nuclear Regulatory Commission and the work that has been done in the Congress, continue to look for ways to pre-certify these plants so that they are safe and affordable. With our Clean Coal Technology Program and other things that we have funded in fossil energy R&D, we continue to look for ways to take this abundant natural resource we have, coal, and learn how to build it cleaner and cheaper.

I guess I just have a hard time understanding where your group is coming from, where you see the country meeting its energy needs for the next 20, 30 years if you don't want to use coal and you don't want to use nuclear. How does it get done?

Ms. AURILIO. Thanks for the question. First of all, you mentioned Europe, and last week, there was a great op ed, actually, by a gentleman from Deutsche Bank, certainly not a green environmentalists or radical person, talking about how the Europeans are actually 40 percent more efficient than the U.S. So, certainly, we have not at all maximized our ability to use energy efficiently, and therefore we are wasting money, which is bad for the economy, it is bad for the consumers, and it is bad for the environment. So I think we can go a lot further in terms of energy efficiency.

Second, with regard to clean coal, as you know, we don't support subsidies for coal. We don't think coal can ever be truly clean, and we would be happy to provide you with testimony that we had before. And today is a code red day in Washington, DC in part because of our dependence on fossil energy.

With regard to nuclear energy, I just have to say we don't believe it is safe or clean, and if it is——

Mr. DOYLE. Based on what, though? I mean you say it is not safe. What do you base this on? What facts can you point to?

Ms. AURILIO. We are basing it on the fact that the nuclear industry is here today saying that they cannot get insurance to fully cover their liability in case of an accident. And, therefore, it must be unsafe. And that they will not build new nuclear power plants

unless they can get a limit on their liability. So either it is safe and they can get the insurance or it is not.

Mr. DOYLE. So you think coal can never be clean, nuclear can never be safe, and that by being more efficient, like the Europeans, that we can just meet the energy needs for the next 20 years. Do you really believe that?

Ms. AURILIO. As I pointed out in my testimony, DOE's five lab studies and the Union of Concerned Scientists show how can we meet 60 to 70 percent of future electricity needs through energy efficiency and shifting to clean renewable energy. I don't think this is all going to happen tomorrow, but, certainly, it is time to start shifting and leveling the playing field for truly clean energy sources and stop the enormous subsidies and unfair practices that have benefited the nuclear industry.

Mr. DOYLE. I will tell you, I do agree with you that we need to put more money into energy efficiency and conservation. I have watched—every budget year, we have this tremendous fight where we rob from Peter to pay Paul. We steal money from EE or EC to fund FE or vice versa, and I think that is a process that has to stop, that we need to fund all of these categories to their sufficient levels.

I am curious, with Price-Anderson, I happen to be—I worked in the State capitol for 16 years and was in Harrisburg the day they evacuated that place for Three Mile Island. And tell me, you didn't mention Three Mile Island in your remarks, and I am just curious your concerns about Price-Anderson as it relates directly to Three Mile Island. I mean it seems to me that that was a pretty good example of a program that worked very well for the residents around Three Mile Island, and I think they will all tell you that. And why don't—it seems to me this is a very consumer-friendly program, one that guaranteed that these families got assistance and got it immediately. I would shutter to think what that would have looked like under a different scenario where they were fighting in court and battling companies back and forth. What are your concerns about that, and how do you see this as a subsidy?

Mr. BARTON. It is going to have to be your last question, because we are about to go vote.

Ms. AURILIO. Really quickly, we have no problem with strict liability for nuclear operators in case of an accident, and we have no problem with making sure that funds are readily available; in fact, we would argue that according to NRC's previous recommendations, the retrospective payment should be $20 million not $10 million. What we do have a problem with is capping liability, and in the event of a major accident, citizens would not be allowed to sue for compensation if there were a major accident above $9 billion. That is what we have a problem with.

In terms of the subsidy, I quote two economist studies in my testimony who estimate that the value of this, of capping the liability to the nuclear industry, and remember that contractors are completely indemnified so the subsidy there is $9.43 billion or whatever you want to call it in terms of what taxpayers might have to pick up. In terms of——

Mr. BARTON. I hate to cut you off, but we have got to vote in about 7 minutes. I have got one more questioner, and then you all

get to go. Okay? There is an incentive here for short answers and short questions. I don't want to cut you off, if you want to wrap that up, but then I am going to——

Ms. AURILIO. Just real quick, you can look at my testimony as far as what the economists estimate as the subsidy.

Mr. DOYLE. Thank you, Ms. Aurilio.

Mr. BARTON. I am going to recognize Mr. Largent, the vice chairman, leave him in charge. When he is finished, he can recess the hearing until 1:45. This panel is free to go. When we come back, the Chairman of the FERC should be here, and we will take his testimony.

Mr. LARGENT. Thank you, Mr. Chairman. I just have one question for Mr. Quattrocchi. In your statement, you mention that the amount of maximum available liability has not been increased since 1988. As we look at reauthorizing Price-Anderson, would it be appropriate to look at increasing that $200 million level?

Mr. QUATTROCCHI. Yes. And as I mentioned both in my verbal testimony and in my written testimony, we think that increasing the primary limit, if only to reflect the impact of inflation since 1998, makes sense. It would also be consistent with a current provision in the act, section 170(t) to be exact, which mandates inflationary increases in the second layer. Those are put into place at 5-year intervals. So therefore we think an increase in the primary layer would be consistent both with that and with trying to offset some of the erosionary effects of inflation. And as I said, assuming that Price-Anderson is renewed essentially in tact, we intend to canvass our members to do just that, to increase the primary limit.

Mr. LARGENT. Okay. And I think it may have been Mr. Parme who mentioned about having a predictable regulatory structure. Somebody in the panel said that. Was it Mr. Skolds? Would part of that predictability be us reauthorizing Price-Anderson this year versus putting it off until next year or something?

Mr. SKOLDS. For Exelon, yes.

Mr. LARGENT. Thank you. We will dismiss this panel and recall the rest of the witnesses at 1:45. Thank you.

[Brief recess.]

Mr. BARTON. The subcommittee will come to order. We want to reconvene our hearing on hydro nuclear power, and we have now before us the distinguished Chairman of the Federal Energy Regulatory Commission, the Honorable Curt Hébert, Jr. He is accompanied by Mr. Mark Robinson, who is the Director of the Office of Energy Projects at FERC, and Ms. Kristina Nygaard, who is the Associate Counsel for Energy Projects in the Office of the General Counsel.

Chairman Hébert, you have been before the subcommittee before. You are always welcome. Your written testimony is in the record in its entirety. I would ask that you summarize it in 7 minutes. And then if either of your associates wishes to say something, and they will be recognized, and then we will have some questions for you.

STATEMENT OF HON. CURT L. HÉBERT, JR., CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION; ACCOMPANIED BY J. MARK ROBINSON, DIRECTOR, OFFICE OF ENERGY PROJECTS AND KRISTINA NYGAARD, ASSOCIATE COUNSEL FOR ENERGY PROJECTS, OFFICE OF GENERAL COUNSEL

Mr. HÉBERT. Thank you, Mr. Chairman. Glad to be before you again. Always glad to come and share with you. I would like to, in my opening statement, provide the opportunity for Mark Robinson and Kris Nygaard, as well, to join me, if there are answers that they would like to add. Since they are experts in leading our agency in the right direction hydro power licensing, I would certainly invite both of them to add to anything that I may say, for your benefit.

The Commission currently regulates over 1,600 hydropower projects at over 2,000 dams, pursuant to Part 1 of the Federal Power Act. These projects represent more than half of the Nation's approximately 100 gigawatts of hydropower capacity and over 5 percent of all electric power generated in the United States. Hydropower is an essential part of the Nation's energy mix and offers the benefits of an emission-free renewable energy resource.

The Commission's responsibility in issuing hydropower licensing under the Federal Power Act is to strike an appropriate balance among the many competing power and non-power interests, as required by the public interest standards of sections 4(e) and 10(a) of the Federal Power Act. However, various statutory requirements, as interpreted by the courts, give other agencies a powerful role in licensing cases and significantly affect the Commission's ability to control the timing and content of licenses.

The Commission currently uses two different processes in relicensing: the traditional process and the alternative process. Experience to date demonstrates that the alternative procedures can reduce the length, cost and contentiousness of relicensing proceedings. The Commission is driven within the constraints of the Federal Power Act to make the hydropower licensing process less time-consuming and costly.

Energy shortfalls in the West and especially in California have given impetus to the need for further improving the licensing process. Pursuant to section 603 of the Energy Act of 2000, the Commission staff, on May 8, 2001, submitted to the Congress a report on the cost and the time to obtain a license, including recommendations, which I endorse, for legislative, procedural and policy changes to reduce those costs and time.

The legislative recommendations include, one, establish a one-stop shop at the Commission for all Federal authorizations. Federal agencies with mandatory conditioning authority would retain that authority subject to a statutory reservation of Commission authority to reject or modify the conditions, based on inconsistency with the Commission's overall public interest determination.

If this recommendation is not adopted, then, second, require agencies to better support their conditions. This would require resource agencies to consider the full panoply of public interest and support their conditions on the record and provide a clear administrative appeal process.

Third, focus Clean Water Act authority. Limit water quality certification to physical and chemical water quality parameters related to the hydropower facility. Provide a statutory definition of fishway. The proposed definition recently issued by Interior and Commerce is overbroad and would allow these agencies to dictate virtually all aspects of a project. Remit annual charges for other Federal agency Federal Power Act Part 1 costs directly to agencies, specifying that they are to be used for implementing Part 1.

The procedural and policy recommendations include, first, require license applicants to submit during pre-filing consultation a status report focusing on study requests to enable staff to determine if pre-filing involvement is warranted because of significant cost and time delay. Is there need to agree upon and perform additional environmental resource studies? Allow agencies to revise their recommendations and conditions only with Commission concurrence and in a reasonable period after the first or only environmental document. The last filed recommendations and conditions are a source of delay.

Require applicants to conduct pre-filing consultation with the public and non-governmental organizations, as well as agencies and tribes. Allow applicants to maintain public information electronically rather than in hard copy at a specific location. Continue to promote alternative licensing processes and settlements through more staff outreach and involvement. Issue both a draft and final environmental assessment on a more limited basis. Issue one NEPA scoping document and accommodate any comments on the scoping document and the environmental analysis document. And increase the standard new license term to 50 years, in most cases, in recognition of adaptive management.

Mr. Chairman, members of the subcommittee, those are my recommendations. That is the direction that I believe the FERC and the United States should move in. I look forward to your questions and your comments.

[The prepared statement of Hon. Curt Hébert, Jr. follows:]

PREPARED STATEMENT OF CURT HÉBERT, JR., CHAIRMAN, FEDERAL ENERGY REGULATORY COMMISSION

Mr. Chairman and Members of the Subcommittee: My name is Curt Hébert, Jr., and I am Chairman of the Federal Energy Regulatory Commission. I appreciate the opportunity to appear before you to discuss the Commission's hydropower licensing program.

My testimony today will provide a brief overview of the hydropower licensing program, and some of the challenges it faces. I will then focus on the recommendations for improving the hydroelectric licensing process made by Commission staff in a report submitted to Congress on May 8, 2001, as required by Section 603 of the Energy Act of 2000 (the 603 Report). I fully endorse staff's recommendations.

1. The Commission's Licensing Program

The Commission currently regulates over 1,600 hydropower projects at over 2,000 dams pursuant to Part I of the Federal Power Act (FPA). Non-federal hydropower projects are required to obtain Commission authorization if they are on lands or waters subject to Congress' authority. Those projects represent more than half of the Nation's approximately 100 gigawatts of hydroelectric capacity and over 5 percent of all electric power generated in the United States. Hydropower is an essential part of the Nation's energy mix and offers the benefits of an emission-free, renewable energy source.

The Commission's hydropower work generally falls into three categories of activities. First, the Commission licenses and relicenses projects. Relicensing involves projects that originally were licensed 30 to 50 years ago. The Commission's second

role is to manage hydropower projects during their license term. This post-licensing workload has grown in significance as new licenses are issued and as environmental standards become more demanding. Finally, the Commission oversees the safety of licensed hydropower dams. This program is widely recognized for its leadership in dam safety.

The Commission is in the second year of a 10-year period (CY2000 to CY2010) during which 218 applications for hydropower relicenses are due to be filed. The Commission has already received 84 of these relicense applications. This group of projects has a combined capacity of approximately 22,000 megawatts (MW), or 20 percent of the Nation's installed hydroelectric capacity. Approximately forty percent of these 218 projects will have filed their relicense applications by the beginning of 2002.

Over the last three decades, the enactment of numerous environmental, land use, and other laws, and new interpretations of certain provisions of the FPA, have significantly affected the Commission's ability to control the timing of licensing and the conditions of a license. Under the standards of the FPA, projects can be authorized if, in the Commission's judgment, they are "best adapted to a comprehensive plan" for improving or developing a waterway for beneficial public purposes, including power generation, irrigation, flood control, navigation, fish and wildlife, municipal water supply, and recreation. The Electric Consumers Protection Act of 1986 (ECPA) amended the FPA to require the Commission to give "equal consideration" to developmental and non-developmental values.

While the Commission's responsibility under the FPA is to strike an appropriate balance among the many competing power and non-power interests, various statutory requirements give other agencies a powerful role in the licensing process. Among others, those requirements include:

- Section 4(e) of the FPA, which authorizes federal resource agencies such as the Departments of Agriculture and the Interior to impose mandatory conditions on projects located on Federal reservations they supervise.
- Section 18 of the FPA, which authorizes the Departments of Commerce and the Interior to impose mandatory fishway prescriptions.
- Section 10(j) of the FPA, which in essence establishes a presumption for inclusion of Federal and State fish and wildlife agencies' recommendations to protect fish and wildlife.
- Section 401 of the Clean Water Act, which authorizes States to impose mandatory conditions as part of the State water quality certification process.
- The Coastal Zone Management Act, which requires that projects affecting coastal resources be consistent with State management programs.
- The Endangered Species Act, which directs the Departments of the Interior and Commerce to propose measures to protect threatened and endangered species.
- The National Historic Preservation Act, which requires Commission consultation with Federal and State authorities to protect historic sites.

There have been three important court decisions concerning the roles of the Commission and the resource agencies under these statutes.

- In *PUD No. 1 of Jefferson County v. Washington Department of Ecology,* 511 U.S. 700 (1994) (*Jefferson County*), the Supreme Court held that a State acting under the CWA could regulate not only water quality (such as the physical and chemical composition of the water), but water quantity (that is, the amount of water released by a project), as well as State-designated water uses (fishing, boating, etc.). It is important to note that the Court specifically acknowledged that its decision did not address the interaction of the CWA and the FPA, since no license had been issued for the project in question. Its decision therefore did not discuss which regulatory scheme would prevail in the event of a direct and critical conflict.
- In *American Rivers [I] v. FERC,* 129 F.3d 99 (2nd Cir. 1997), the Court held that the Commission lacked authority to determine whether conditions submitted by State agencies pursuant to Section 401 of the Clean Water Act were beyond the scope of that section. The court held that challenges to such conditions were to be resolved instead by the courts.
- Finally, in *American Rivers [II] v. FERC,* 187 F.3d 1007 (9th Cir 1999), the Court ruled that the Commission lacked authority in individual cases to determine whether prescriptions submitted under color of Section 18 of the FPA were in fact fishways. As in the Second Circuit case, the Court held that challenges to a fishway prescription were to be resolved by the courts, not the Commission. (On December 22, 2000, the Departments of the Interior and Commerce issued a joint Notice of Proposed Interagency Policy on the Prescription of Fishways. The Commission staff filed comments noting that the unilaterally-developed pol-

icy would define the term "fishway" in an extremely broad manner that in staff's view is inconsistent with the definition of that term enacted by Congress in the Energy Policy Act of 1992).

As a result of these judicial rulings, if the Commission were to conclude that one or more mandatory conditions would render a project inconsistent with the public interest, its only recourse would be to deny the license application. Not only is this a blunt instrument, but in most relicense proceedings denial is not a viable alternative.

2. The Commission's Licensing Process

The Commission currently uses two different processes in licensing: the "traditional" process and the "alternative" process. Under the alternative process, pre-filing consultation and environmental review can be integrated and proceed concurrently, in a collaborative manner, thereby dramatically shortening the processing time for an application.

Although the Commission staff invests substantial time and effort on alternative licensing processes during the pre-filing stage, it is clear that the effort produces savings in processing time and efficiency once applications are filed with the Commission. After an application is filed, the median time for the Commission to process the application and issue a new license order is about 16 months. An example is the Upper Menominee River Basin Projects, eight existing hydroelectric developments located in Michigan and Wisconsin. New license were issued January 12, 2001, about 15 months after the applications were filed.

Based on discussions Commission staff has had with the industry, we expect that about one-third of the next wave of relicense applicants will pursue the alternative process route.

The Commission has worked to improve the licensing process by making its regulations more clear and specific, enhancing opportunities for stakeholder participation, and providing flexibility to license applicants and others to design collaborative efforts that meet the needs of all participants. In addition, Commission staff routinely holds "outreach" meetings throughout the country to inform all stakeholders about the licensing process, and has taken an active role in facilitating settlements and introducing alternative dispute resolution procedures. The staff has also participated in Interagency training on hydropower licensing, and in the Electric Power Research Institute's National Review Group, which shares "lessons learned" in the hydropower licensing process. The details of these efforts are described in Commission staff's 603 Report.

3. Costs and Times for Obtaining a License

The following discussion is based on information contained in the 603 Report. The staff found that, using the traditional process, it takes about 32 months in pre-filing consultation and study in addition to 47 months in post-filing processing to license a project. In the alternative licensing process, prefiling consultation and study is more intense and takes about 40 months, but the post-filing process takes only about 16 months. Thus, on average the total time spent on an application is 23 months shorter with the alternative licensing process than with the traditional process.

For the traditional process, the average cost of application preparation is $109/kW, and the cost for protection, mitigation, and enhancement measures is $264/kW. In contrast, for the alternative licensing process, the average costs for application preparation and protection, mitigation and enhancement measures are $39/kW and $58/kW, respectively—substantially lower than for the traditional process.

4. Recommendations to Reduce the Cost and Time of Licensing

My colleagues and I are aware of the need to complete the relicensing process as expeditiously as possible while also protecting the environment. Many have said that the licensing process takes too long and costs too much. Much of time and resources spent are unavoidable. But the recent energy shortfalls in the West and especially in California, have given more impetus to the need not just to pursue marginal efficiencies but for a fundamental restructuring of the licensing process.

The 603 Report identified the primary sources of cost and delay in the licensing process and proposed time-saving changes to certain Commission policies and procedures, but also identified, as Congress requested, legislative changes needed to effectuate any significant reduction in the time and cost of relicensing.

In the 603 Report, the staff made the following recommendations, which I endorse:

A. LEGISLATIVE RECOMMENDATIONS

1. Establish one-stop shopping at the Commission for all federal authorizations.

Federal agencies with mandatory conditioning authority would retain that authority, subject to a statutory reservation of Commission authority to reject or modify the conditions based on inconsistency with the Commission's overall public interest determination.

The license would also be the only federal authorization required to operate the project, *e.g.,* special use authorizations for projects on Forest Service lands and similar authorizations would be eliminated. A single administrative process would be established by the Commission to address all Federal agency issues in a licensing case, with schedules and deadlines established by the Commission, and with one administrative record compiled by the Commission in consultation with the other Federal agencies. The Commission would prepare a single NEPA document. The Federal agencies would not be required to adopt the Commission's conclusions, but would have to provide for the record their own analysis and conclusions based on the evidentiary record. The agencies' analyses and conclusions would be included in the record of the Commission's order acting on the application, and judicial review would be obtained by seeking rehearing of the Commission's order.

If this recommendation is not enacted, then the following recommendation might reduce some of the high costs resulting from mandatory conditions:

2. Require agencies to better support their conditions (alternative to A.1).

If the Commission is not given authority to balance all the developmental and environmental values and make a decision in the public interest, and, if agencies with conditioning authority conduct separate proceedings, an alternative would be to require resource agencies to consider the full panoply of public interest values, support their conditions on the record, and provide a clear administrative appeal process. Supporting Findings for A1. And A.2

The 603 Report showed that the costs for protection, mitigation, and enhancement measures for traditional licenses containing Section 4(e) and 18 mandatory conditions ($590/kW) were 2.7 times the cost for licenses not containing those conditions ($218/kW). The Commission staff does not routinely highlight disagreements with mandatory conditions; however, in the 12 percent of cases where staff did so, staff found that those conditions were substantially more expensive than conditions that staff thought adequate to protect environmental resources. Alternative Recommendation A.2. might reduce the cost of some mandatory conditions.

3. Focus Clean Water Act authority.

At least for hydropower projects, limit water quality certification to physical and chemical water quality parameters.

Supporting Findings

Water quality certification requirements can be costly and the time to obtain certification is a substantial source of delay. There has clearly been an increase in the number and variety of certification conditions since the *Jefferson County* and *American Rivers I* decisions. For comparison, staff reviewed licenses issued in 1992, before these decisions were issued, and in 1999, two years after *American Rivers.*

Staff reviewed the number and kinds of water quality certification conditions in each license. These were categorized as pertaining to the physical characteristics of the water (temperature, dissolved oxygen, clarity, etc.), designated uses of the water body (e.g., fishing or swimming, and therefore fish passage and instream flows), or administrative (state approvals, reopener clauses, etc.). The 603 Report documented a substantial increase in the number of certification conditions and a more than doubling of the number of conditions related to designated uses. Of equal concern, of 129 currently pending licensing cases, 52 (25 percent) are currently held up by certification issues. Clearly, water quality certification is a substantial source of cost and delay.

4. Provide a statutory definition of fishway.

Supporting Findings

Since the *American Rivers II* case (1999), the Commission lacks authority to decide if a prescription is a "fishway." If the Commission concludes that a fishway prescription is drafted so broadly as to render the project inconsistent with the public interest, its only recourse is to deny the license.

5. Remit annual charges for other federal agency FPA Part I costs directly to agencies, specifying that it is to be used for implementing Part I.

Supporting Findings

Numerous agency, tribe, and non-governmental organizations supported amending the FPA to permit the Commission to remit directly to other Federal agencies with FPA Part I responsibilities the portion of administrative annual charges attributable to their costs, and to specify that such remittances be used for FPA Part I purposes. By ensuring that Federal agencies recover appropriated funds spent for the licensing process, such legislation would support the federal agencies' participation in that process.

B. REGULATORY AND POLICY CHANGES

1. Require license applicants to submit during prefiling consultation a status report focusing on study requests, to enable Staff to determine if pre-filing involvement is warranted.

Supporting Findings

The median time from filing to issuance of the notice that a license application is ready for environmental assessment is 17.4 months for the traditional process, and only 2.1 months for the alternative licensing process. The difference can be attributed to the high number of additional study requests under the traditional process. Resolving study disputes pre-filing would save about 15.3 months in total processing time. About 25 percent of application preparation costs are incurred post-filing. These costs largely involve study needs that were not resolved pre-filing.

2. Agencies would be allowed to revise their recommendations and conditions only with the agreement of the Commission, and in a reasonable period after the first (or only) environmental document. Eliminate the option for Federal agencies to file by the deadline only preliminary terms and conditions and a schedule for filing final conditions.

Supporting Findings

In many of the cases pending over five years as of 1997, delays in processing are caused by agencies filing their 10(j), Section 18, and 4(e) conditions filed late in the process (average one to six months delay on initial conditions, and up to 17 months for final conditions).

3. Applicants would be required to conduct pre-filing consultation with the public and non-governmental organizations. Currently, applicants are required to consult only with agencies and tribes.

Supporting Findings

Staff expects that greater involvement of interested entities up-front would result in fewer delays from new issues, and resultant new study requests.

4. Allow applicants to maintain public information electronically rather than in hard copy.

Supporting Findings

The Commission's rules currently require applicants for new licenses to maintain on file and available for public inspection certain data regarding the existing project facilities and operation. Licensees, who maintain that little use is made of physical libraries, propose instead that the Commission give them the option to put the data on a web site, with hard copy on request at no cost.

5. Continue to promote alternative licensing processes and settlements, through more staff outreach and involvement.

Supporting Findings

The alternative licensing process results in a median process time that is 23 months less than traditional license process times. Average costs of application preparation and protection, mitigation and enhancement measures are significantly less for the alternative licensing process as compared to the traditional license process. Substantially more settlements and substantially less rehearings result from the alternative licensing process as compared to the traditional license process.

6. Issue a draft Environmental Assessment (EA) before preparing the final EA only if necessary. Comments on the final EA would be handled in the merits order. Staff would retain discretion to do a draft or supplemental EA.

Supporting Findings

Staff conservatively estimated that about one-third of the average time between the Draft EA and the Final EA—that is, about two months—would be saved if no Draft EA were prepared, and that the Commission would save about $24,000 for the traditional licensing process and $8,000 for the alternative licensing process.

7. Issue a single NEPA scoping document, and instead would accommodate any comments on the scoping document in its preparation of the NEPA document.

Supporting Findings

Staff conservatively estimated that about one-third of the time for preparing a second NEPA scoping document—that is, about two months—would be saved, and that the Commission would save about $7,500.

8. Increase the standard new license term to 50 years, absent compelling reasons to do otherwise. This is consistent with the "living license" approach and expanded use of the Commission's reserved authority to amend the license to address new issues.Summary Findings

A relatively high portion of licensing costs, $85/kW, is for application preparation costs, as compared to $212 for protection, mitigation, and enhancement measures. For small projects, application costs are about half of total licensing costs. This proposal would reduce licensee costs by decreasing the frequency of the application preparation costs and by providing more time to amortize the costs of protection, mitigation, and enhancement measures.

5. Conclusion

The Commission is well aware of the importance of hydropower, and of the significant role we play in licensing and overseeing crucial hydropower projects. We also recognize that the hydropower licensing process is often too long and too costly. The Commission and its staff will do everything we can to improve that process. At the same time, we are prepared to work with Congress and other agencies to craft legislative solutions. Together, we can develop the efficient, comprehensive licensing process that our Nation's energy needs demand.

Thank you. I will be pleased to answer any questions you may have.

Mr. BARTON. Do either of your associates wish to say anything verbally? Okay. The Chair would recognize himself for the first 5 minute question rounds.

Mr. Chairman, you talk in your written testimony, and you spoke to it somewhat in your verbal statement, about a one-stop shop. Does that mean, in your mind, that the FERC would be the shop where it all stops or would it be another agency? Could you elaborate on that a little bit?

Mr. HÉBERT. I do think that FERC provides a great opportunity to be the one-stop shop, and the reason for that is that we do have to balance and maintain the public interest. So many and the resource agencies don't have to balance. They can be single-source type agencies and single-interest agencies that are not required to balance, and we are. So, therefore, I think that is a reason that FERC would naturally be the one-stop shop.

Mr. BARTON. Okay. We have to get the clock set. Put me on about 4 minutes. I don't think he talked for 2 minutes. I don't want to cheat my own self here. There you go. All right.

Your testimony is silent on the potential for future hydro sites. Does your agency have any information about future potential, either large or small, hydro sites in this country where we might get additional hydroelectric power?

Mr. HÉBERT. Mr. Chairman, I would certainly invite the experts to my right and left to comment on that. I would tell you specifically I am not aware of any substantial projects in the United States of America. It would be my thought, based on what I know now, that if there is development as far as increasing hydro capacity through new structures, most of that, if in North America, would be somewhere in Canada and not in the United States.

Mr. BARTON. Well, I have got information—it is dated; it is over a year old—that there are at least 2,000 potential small hydro sites. Would Mr. Robinson or Ms. Nygaard——

Mr. HÉBERT. There are some small ones, I know.

Mr. BARTON. Do either one of you wish to comment on that?

Mr. ROBINSON. Certainly. There are at least that number of sites that are available. However, we haven't seen interest in new hydropower since about 1987 or 1988. A number of congressionally authorized sites expired around that time, but since then, we have been basically in the business of relicensing existing projects.

Mr. BARTON. Right. But if we could do an interconnection standard and some of the distributed generation issues in a larger electric restructuring bill, there is some thought that small hydro would really conceivably play a noticeable part in new generation. Small is 5 megawatts or less, perhaps 10 megawatts or less.

Mr. ROBINSON. I think, certainly, as the economics change, those projects would become viable, and we might see a rebirth of small hydropower project and applications come into the Commission.

Mr. BARTON. Okay. This is off the subject, but I want to ask—I don't get the Chairman before me publicly that often. Later this afternoon on the floor, we are going to have a Congressman Kucinich of Ohio amendment that would restrict any funding to the FERC for setting market-based wholesale electric rates. If you had the opportunity to go to the floor and debate that, Chairman, would you oppose or support the Kucinich amendment? And, hopefully, you will say you will oppose it, and you would give me one or two good bullet points why I should oppose it.

Mr. HÉBERT. May I start out by saying we do that for free.

Mr. BARTON. Okay.

Mr. HÉBERT. But if that is not good enough, I certainly don't know and understand the intent behind the legislation. I would like to know more about that to give you a better answer. But I would tell you I think that the Commission needs the full range of its entire tool shed in dealing with competition in making certain that Americans have choice and that that choice develops along with adequate supply and adequate infrastructure. And that is best provided, I believe, by incentives. What are those incentives, and what are those opportunities? Part of it is market-based rates.

The FERC is now exhibiting, I believe, a strong ability to be able to bring markets in that seem dysfunctional. We have done that, we are continuing to do that. I don't see the alarm that there was perhaps four and 5 months ago in dealing with these issues. And I do think the market-based rate authority is one of the tools that is necessary for FERC to have.

Mr. BARTON. Okay. Let me ask one last hydro question, and then I will yield to Mr. Dingell for questions. Is there any interagency

working group right in the Bush Administration that is looking at hydroelectric reform as an option?

Mr. HÉBERT. Yes. The IHC is a follow-up to the ITF.

Mr. BARTON. What is IHC?

Mr. HÉBERT. Mark Robinson can tell you more about it, but that is the only development I am aware of.

Mr. BARTON. Okay.

Mr. ROBINSON. The interagency administrative group that existed up until December 31, 2000 was the Interagency Task Force, the ITF. One of the recommendation of the ITF was that a follow-up group be formed, the Interagency Hydropower Committee, the IHC. That is just now kicking off. We are trying to have our first meeting of that group during July.

Mr. BARTON. And do you know, off the top of your head, which cabinet agencies are involved in that?

Mr. ROBINSON. Yes. They are the Department of Commerce, the Department of Agriculture, the Department of the Interior and ourselves as the four primary agencies that would conduct this follow-up group.

Mr. BARTON. Okay. And do you know—is one agency the lead agency in coordinating the group?

Mr. ROBINSON. Well, we are taking the initiative to try to get it started.

Mr. BARTON. We being the FERC.

Mr. ROBINSON. Yes, the FERC. But the idea behind this is that each of those agencies would chair a session each quarter. So we would meet four times a year, approximately.

Mr. BARTON. Well, we are going to draft a hydro reform title to a bill next week. So if you could encourage your working group, even though it hasn't met yet, to prepare its conclusions and get them to us at the staff level next week so we could review them for incorporation into our bill, we would—whatever input you can give us at the staff level or even at the member level, if we need to do that, by telephone, when we come back week after next, we hope to mark up a bill that will include a hydro title.

Mr. ROBINSON. Certainly.

Mr. BARTON. Okay. The Chair would recognize Mr. Dingell. Mr. Dingell wishes to recognize Mr. Boucher. Mr. Boucher is then recognized for 5 minutes.

Mr. BOUCHER. Well, thank you very much, Mr. Chairman. And Commissioner Hébert, welcome. We are delighted to have you here this afternoon.

I have several questions concerning the recent report that was issued through the Federal Energy Regulatory Commission. Section 603 of the Energy Act of 2001 states, and I will quote this, "That the Commission shall, in consultation with other appropriate agencies, immediately undertake a comprehensive review of policies, procedures and regulations for the licensing of hydroelectric projects."

The report that the Commission issued, pursuant to that direction in May of 2000, is characterized as a staff report. And so my first question to you is this: Is that report a product of the staff or is this really the Commission's report?

Mr. HÉBERT. It is certainly a staff report. It is what came from the staff level and worked its way up to the Commission. It is something that I endorse as what the position of the Commission should be.

Mr. BOUCHER. Did the other members of the Commission have an opportunity to review that report?

Mr. HÉBERT. Yes. The report has been provided to all Commissioners, so I am assuming it has been reviewed. As you know now, we have two new Commissioners. I would doubt that they have had the opportunity to go through it yet. I certainly don't want to speak for them. The other two Commissioners that have been there the same time I have been, Commissioner Breathitt, Commissioner Massey have had an opportunity to look at it. I can tell you, and certainly in their testimony, they make it clear that they have differences of opinions in which direction we should go.

Mr. BOUCHER. And so it is fair to say that the other two members of the Commission who were members of the Commission at the time that this report was issued do have some differences of opinion with respect to certain of the recommendations; is that correct?

Mr. HÉBERT. That is correct.

Mr. BOUCHER. Has there been an opportunity for those other Commissioners, in some formal mechanism, to express their disagreements and to indicate what those disagreements are?

Mr. HÉBERT. They have not yet. They are being briefed now. As you know, there have been many issues before the Commission to which we have paid great attention. This report has not been placed on the back burner, but there have been other things that have been more pressing. But the new Commissioners, certainly, are going to be briefed on it quickly.

Mr. BOUCHER. Well, I would be happy to know that the new Commissioners are going to be briefed, but my question relates to the numbers of the Commission who were there at the time this report was issued. So Commissioner Massey and Commissioner Breathitt and I believe you answer was that they do have some differences with these recommendations; is that correct?

Mr. HÉBERT. That is correct.

Mr. BOUCHER. And has there any been mechanism for the two of them to express in a formal way what their differences with these recommendations are?

Mr. HÉBERT. They have their testimony that they provided to you today. We certainly continue to have conversations. As you know, we are prohibited from getting together as a quorum, but we can get together on a basis of one to one, and we continue to do that. But as for any formal document from my office to them requesting that they share with me any differences, that has not been done.

Mr. BOUCHER. All right. And this report was not actually adopted by the Commission; is that correct?

Mr. HÉBERT. That is correct.

Mr. BOUCHER. It does bear your endorsement, but it does not bear the endorsement of the Federal Energy Regulatory Commission; is that correct?

Mr. HÉBERT. That is accurate.

Mr. BOUCHER. Now, do you believe that the process you undertook to submit this report conforms with the statutory requirement that the Commission issue a report?

Mr. HÉBERT. Do I believe that it conforms to that?

Mr. BOUCHER. Yes. Do you believe it conforms with the statutory requirement that the Commission issue the report?

Mr. HÉBERT. Well, it is the Commission's report through the staff. I guess if you are asking me has it been voted up or down by the Commission, no, it has not. If you believe that is the intent of the act, then I will certainly look at that.

Mr. BOUCHER. Okay. Well, let me move on to another matter. The statute also requires consultation with other appropriate agencies. That was certainly the intent of Congress. That was made clear at the time this provision was adopted. And my second question to you second question to you is, what consultation did the Commission undertake with other Federal agencies as these recommendations were adopted?

Mr. HÉBERT. The Commission, through its staff, communicated on a pretty regular basis with the other agencies. Let me allow either Mr. Robinson or Ms. Nygaard to tell you exactly what they did to give you a better answer.

Mr. BOUCHER. Just tell me which agencies you consulted with.

Mr. ROBINSON. Just about every agency that we could think of. Departments of the Interior, Agriculture, Commerce——

Mr. BOUCHER. Agencies with environmental responsibilities?

Mr. ROBINSON. I'm sorry?

Mr. BOUCHER. Agencies with environmental responsibilities?

Mr. ROBINSON. Absolutely.

Mr. BOUCHER. All right.

Mr. ROBINSON. And we started this process by calling all of those agencies with environmental responsibilities together to talk about how we were going to launch this effort and what studies we were going to do and how we were going to do them.

Mr. BOUCHER. Did those agencies have an opportunity to take part in the drafting of these recommendations?

Mr. ROBINSON. No, they did not.

Mr. BOUCHER. Did they have an opportunity to comment on the recommendations after you had drafted them?

Mr. ROBINSON. There was no opportunity to comment on the draft document, and thus no opportunity——

Mr. BOUCHER. All right. It doesn't sound like very comprehensive consultation to me. Well, thank you, gentlemen. Mr. Chairman, my time has expired, and I yield back.

Mr. BARTON. Thank you. Does Mr. Dingell wish to be recognized now or does he wish to recognize Ms. McCarthy?

Mr. DINGELL. Thank you, Mr. Chairman. I appreciate that courtesy. Mr. Chairman Hébert, in appearing before the committee last year, your predecessor announced that the Commission had succeeded in implementing environmental improvements while maintaining the viability of the hydropower industry, and cited a number of successful administrative efforts to expedite the relicensing process and even to give examples of success stories.

Many of the proposed changes you have suggested, in my view, would harm the environment without necessarily contributing

much to the continued viability of the hydropower industry. Commissioner Breathitt seems to allude to this in her written testimony where she rejects the idea of putting FERC in charge of all aspects of relicensing, including environmental protection, under the concept of one-stop shopping.

You noted in response to questions from Mr. Boucher that you have had consultations but have not gotten approval or assent or further communications or comment from any of the agencies with whom you had consulted; is that correct?

Mr. HÉBERT. That is correct.

Mr. DINGELL. Now, how many licenses have been surrendered since FERC began the relicensing in the projects class of 1993? Have any been surrendered at all?

Mr. HÉBERT. Surrendered?

Mr. DINGELL. Have any licenses been surrendered since FERC began relicensing projects in the class of 1993?

Mr. HÉBERT. Yes.

Mr. DINGELL. How many?

Mr. HÉBERT. I can provide that. A handful, anyway.

Mr. DINGELL. Please submit a list of the projects where the licenses have been surrendered, what they were, and why they were surrendered.

Mr. HÉBERT. Glad to.

[The response appears at the end of the hearing.]

Mr. DINGELL. Now, under current law, a project whose license expires before a new one is issued is allowed to continue to operate under an annual license; is that not correct?

Mr. HÉBERT. That is correct.

Mr. DINGELL. Are State and Federal resource agencies and other stakeholders consulted or provided with official period for comment on these annual licenses, yes or no?

Mr. HÉBERT. No, they are not.

Mr. DINGELL. Does FERC apply conditions to these annual licenses which will provide interim resource protections until a new license is issued, yes or no?

Mr. HÉBERT. By law, they have to be identical to the existing license.

Mr. DINGELL. But that means that you apply no conditions for the protection of environmental or fish and wildlife values, even if the law has been changed since the original license was written; is that correct? So you just relicense—you just extend the license when you get an application that you can't act upon, the result of which is that the relicensing simply extends the original terms of the license and that no conditions are imposed, either for protection of fish or wildlife or for concern about environmental matters; is that right?

Mr. HÉBERT. I would respectfully phrase it differently.

Mr. DINGELL. Well, how would you phrase it? I think I have phrased it simply enough that it doesn't need much change.

Mr. HÉBERT. No, sir. I was not speaking to the simplification of it. I was just suggesting that in fact it is the goal of our agency, the FERC, to issue licenses that will produce the maximum amount of power at the cheapest possible cost. But at the same

time, we are fully protecting the environment, and we are the only agency, the FERC, that is directed to provide such a balance.

Mr. DINGELL. Well, do you apply the Northwest Power Act or any of the provisions with regard to fish and wildlife protection or endangered protection in the relicensing of these projects on which you give just a 1-year extension?

Mr. HÉBERT. I am going to let Ms. Nygaard go into that further for you, if you don't mind.

Mr. DINGELL. The answer should be a simple yes or no.

Mr. HÉBERT. But what I would love to share with you——

Mr. DINGELL. You do or you don't. Which is the case.

Mr. HÉBERT. We do look at the Clean Water Act and consider it, the Endangered Species Act, the National Historical Preservation Act.

Mr. DINGELL. What conditions do you impose upon a relicensing? You told me you simply duplicate the preexisting license for a period of 1 year.

Mr. BARTON. Let us let Ms. Nygaard. I think she actually wants to be informative to Mr. Dingell. Did you want to——

Ms. NYGAARD. Thank you.

Mr. DINGELL. I just want a yes or no answer.

Ms. NYGAARD. No, because the Federal Power Act requires the issuance of an annual license on the identical terms as the prior license.

Mr. DINGELL. So you impose then no——

Ms. NYGAARD. Therefore, if the prior license has reserved authority, we have it to invoke; if it doesn't, we don't.

Mr. DINGELL. You are talking about a license that was originally issued probably 50 years ago on which there have been a number of changes by the Congress in laws relative to the protection of fish and wildlife; is that not so?

Ms. NYGAARD. Yes, but we consider——

Mr. DINGELL. And do you apply any of those——

Mr. BARTON. Mr. Dingell, we ought to let the witness have a chance——

Mr. DINGELL. Mr. Chairman, I believe I am proceeding on my own time. I want the witness to be clear as to the question so that the witness, either of them or any of them, can respond properly to the question.

Mr. BARTON. But I also know the chairman, the former chairman, wants the whole truth in the record. You consistently tell me that every time we have a conversation.

Mr. DINGELL. I am consistently telling you that, and I am fully capable of asking my questions——

Mr. BARTON. I understand. Nobody disparages your question.

Mr. DINGELL. [continuing] and seeking the proper answers thereof. So I gather that you are reissuing a license that is 50 years old that is identical to the original license. It reflects none of the changes that have been made in the Federal law with regard to protection of fish and wildlife value or the environment; is that correct?

Ms. NYGAARD. That is correct as to annual licenses.

Mr. DINGELL. Thank you. Thank you. There is a great deal of difficulty getting that answer. I want to thank you for your assistance, Mr. Chairman, but I really didn't need it.

Mr. BARTON. I don't think the gentleman has ever had difficulty asking a question.

Mr. DINGELL. Now, do you deny that this gives strong incentive then for licensees to stonewall and to fail to provide the necessary information they are supposed to provide knowing that they will continue to operate without having to adhere to modern environmental laws, such as NEPA, the Clean Water Act or any of the fishery protection acts that have been imposed in the last 20 years?

Ms. NYGAARD. I can't speak to what is an incentive for them.

Mr. ROBINSON. That hasn't been what has been the——

Mr. DINGELL. Pardon?

Mr. ROBINSON. That has not been the case in my experience in dealing with licensing projects for the past 24 years.

Mr. DINGELL. You are telling me it is not an incentive to get out from under what might conceivably be an onerous burden, such as the——

Mr. ROBINSON. Typically, our licensees are seeking certainty in the operation of their project, and that certainty comes from receiving the new license. They are interested as anyone in receiving that.

Mr. DINGELL. Let us look at this. You are intelligent people down there in the well. There are a bunch of requirements. Some of the fishery acts require, for example, when the new license is issued, that steps be taken for the protection of salmon runs, fishways up and down. By getting one of your 1-year extensions, they don't have to put in a fishway. Other mitigation features for the protection of spawning and things of that kind are not required by the simple 1-year extension. So the people keep extending it. They don't have to spend a $0.5 million or $1 million or $2 million for a fishway. They don't have to put in spawning. They don't have to do anything about moving the fish around the dam by barge or by truck, and they save lots of money; isn't that right?

Mr. ROBINSON. I don't agree with that.

Mr. DINGELL. You don't.

Mr. ROBINSON. No, I don't.

Mr. DINGELL. What is the truth then? While you are busy disagreeing with me, tell me what the truth is.

Mr. ROBINSON. My experience has been that our licensees are as interested as anyone in trying to move the process along so that they have the certainty of the new license, so they can make business decisions about what they want to do with that project. Staying in limbo in the annual license State is not in their best interest either.

Mr. DINGELL. But by having the annual license, they get out of any of these onerous burdens, do they not?

Mr. ROBINSON. Most of our licenses include reopen provisions. Even during the annual license period, if we have to make a change in that project, we can use those reopeners to make those changes, including requiring fish ladders.

Mr. DINGELL. How many times—I want you to submit for the record how many times the Commission has during its activities

taken the necessary steps to reopen an existing license to assure that——

Mr. ROBINSON. Be happy to.

Mr. DINGELL. [continuing] fish and wildlife protection activities were taken by the licensee during the pendency of that 1-year extension. And I would like to have every one that you can name, giving the name and identification of the particular facility, the licensing, the time and the dates.

[The response appears at the end of the hearing.]

Mr. DINGELL. And, Mr. Chairman, I would ask that that stay open—that the record stay open. I thank you for your courtesy. I think my time has expired. I have some other fine questions.

Mr. ROBINSON. I would be glad to provide that information.

Mr. BARTON. Well, we are going to let Congresswoman McCarthy ask her questions. And then if the gentleman from Michigan wishes to ask additional questions, he will be given that opportunity. Congresswoman McCarthy for 5 minutes.

Ms. MCCARTHY. Thank you, Mr. Chairman, and I thank the distinguished experts here with us today. In listening to the prior questioning of my colleagues, I thought I might follow up with a concern that I have listening to the responses. And that is with regard to relicensing, I really think based, at least on the experience out in Missouri where I am, that we have a terrific union electric dam that created the Lake of the Ozarks that has brought all kinds of beauty and commerce and good things, including energy, to that area of the Ozarks.

But at the time it was originally licensed, a lot of thought wasn't given to environmental concerns, for example. In the process of relicensing, I would expect that environmental quality concerns might be brought into play. And so I guess what I want to pursue is reforming the process of relicensing is a good thing, and it can indeed result in significant improvements to environmental quality, and putting a strong process in place would be both good to expedite as well as improve.

Would you reflect for me, Mr. Chairman, on how FERC has the knowledge of all of these issues and can do so without consultation with other groups like the U.S. Fish and Wildlife Service and the National Marine Fisheries Service? Because when Mr. Boucher was visiting with you, you mentioned that they hadn't been consulted in this report of May 2. Is it those agencies that are slowing down the process that you don't want to consult with them so you can speed up the process? And if so, does your staff have the expertise they have so the same considerations will in fact be brought to the table and become part of an improved process of licensing? Does that make sense?

Mr. HÉBERT. It makes great sense, and let clear up in the very beginning that I don't believe the FERC can adequately attempt to speed up the process while at the same time protecting the environment without consultation with those resource agencies. I don't want you to think that at all. I do not believe that. I understand Congressman Boucher's concern about consultation after we came out with the 603 report and the staff recommendations, but I will assure you, as has been done by Mr. Robinson, that there was much consultation with the resource agencies that went into the

process before the 603 report came out. Now, was there consultation after the report was made, no, and I do want to make it clear there was not. But we can——

Ms. MCCARTHY. Was that because of a time factor?

Mr. HÉBERT. Yes. We were trying to get the report out. We had a period that we had to get it out in 6 months, and we did get it in under the wire. But we did do the consultation on the front end, and I genuinely feel good about that. We are certainly always willing to take more comments and learn as we go down the road, but I don't want you to think that we are trying to maneuver around resource agencies.

We certainly need their input, and if you ask about resources at the FERC, I can tell you that 70 percent of our people have previously worked at resource agencies. So we get talent from them, and we have got their people in our agency. So, certainly, we are continuing to work with those resource agencies. In fact, we have got 80 environmental specialists at the FERC right now, and 24 of those are fish biologists. So we draw from those resource agencies.

Ms. MCCARTHY. I think the issue that is before us is wanting to help you improve the process.

Mr. HÉBERT. Right.

Ms. MCCARTHY. But in so doing, we genuinely want a collaborative effort that takes a look at issues that might not have been considered before this plant was initially licensed or even during a relicensing, depending on its age, because environmental concerns are very real today on any number of levels——

Mr. HÉBERT. Sure.

Ms. MCCARTHY. [continuing] in all forms of energy. That is why we are looking—and hydro has obviously been a very important component for States like my own. But I think that is what you are hearing from these various members today is the concern that for the sake of speeding it up so we have more energy, we don't want to lose what we have gained as far as issues like environmental quality and a balanced approach where all voices weigh in and we try to do what is best for the community, the State and the Nation.

Mr. HÉBERT. I totally agree with you, and that is why if you see the direction that FERC has gone this year, even through our price mitigation plan that we have done for the West, we have certainly made it very important to look at efficiency to try to get the older, dirtier systems off, to get the cleaner units on. We certainly understand at FERC the best way to have a clean environment, be it clean water, clean air or anything else, is to never make it dirty in the first place. So we are committed to doing that. And I want you to understand we are committed to working with those resource agencies. I would never want to exclude them. They have plenty of valuable information that we would not necessarily have.

Ms. MCCARTHY. I appreciate that very much. I just know that my own plant in Missouri is up now for relicensing, and I certainly hope that consideration is being given in that process to some of the issues that weren't addressed prior to this and that hopefully the process will prove that we can make those changes, if necessary, if recommended, as part of the relicensing and improve the process. Thank you very much. Thank you, Mr. Chairman.

Mr. BARTON. Thank you. The gentleman from California, Mr. Radanovich, is recognized for 5 minutes.

Mr. RADANOVICH. Thank you, Mr. Chairman, and welcome, Mr. Hébert; it is good to see you again. I have got a couple of questions, but one kind of revolves around an article in the Wall Street Journal about Richard Meserve and the NRC's relicensing process for nuclear facilities. And in that article was mentioned a nuclear power generating plant that during the past year had costs of $200 million to operate while producing about $1.6 billion worth of electricity. And I believe it was a municipality or something that is—it is not under FERC jurisdiction. And the gap between the cost of production and what they were getting is quite large. In much the same way are the companies that are under your jurisdiction are being charged, as far as high prices.

And I am wondering, given that, that because 30 percent of the alleged overcharge is for electricity in California from non-FERC jurisdiction power sellers, to what extent are these power sellers participating in the current settlement conference that you are dealing with? And what is FERC doing to make sure that prices charged by all the power sellers are treated equally, given that you don't have the jurisdiction over almost 60 percent, even in California?

Mr. HÉBERT. Actually, what we did to subject everyone to our price mitigation plan, is we said that, in fact, if you were using the ISO, if you were using the tariffs, a wire subject to FERC's jurisdiction, that you would be roped into that process. So that was our way to, as we lawyers say, to bootstrap them in so we can get them under the price mitigation.

Now, when it comes to the refund authority, that is very tricky and somewhat different. As we set up the settlement process for California, we are learning that the parties are coming to the table. Everyone has always got a different negotiation strategy of what they come forth with. We did issue a clarification on the order Friday, which would include the parties to the Northwest so we can hopefully get one settlement that comes forward. I think that moves us in a proper direction.

What comes out of it, I don't know, but I will tell you even though I am extrinsic right now to the settlement process because we have sent the refund case to a settlement judge, ethically and legally I am prohibited from being involved, and we are hoping our settlement judge will bring us some recommendation after the 15-day period, and then 7 additional days after that to make a recommendation if they don't meet settlement. But it has been shared with me by my chief of staff earlier that BPA is in the room—I am sorry? WPA is in the room. So we have some of the non-jurisdictional facilities in there.

Mr. RADANOVICH. Okay, great. I appreciate that.

Mr. HÉBERT. LADWP I do know is in there as well.

Mr. RADANOVICH. Is that right? Okay. And also being from California, I am real interested in California getting its act together in the power generating business here as soon as possible. And in that scenario, I really don't think things are going to be back to normal until we get the Governor out of the energy purchasing business and somehow make the utilities creditworthy again. And

then get them a sizable portion of their purchases off the spot market.

Given that, I am kind of surprised that FERC is in this area of negotiation in order to settle the past problems that we have experienced in California, although I welcome and I am glad that everybody is at the table working this thing out. I guess my question is, is it possible for FERC to get involved in any way in making sure that our utilities are creditworthy again?

Mr. HÉBERT. We have done that through our price mitigation plan. I, certainly, personally thought it was important understanding that if you are in the energy industry the business climate is somewhat undesirable right now because of non-payment in California. That is why we had the 10 percent adder on to the costs that we are looking at through the price mitigation plan. It is something that we are continuing to work through, but I think it is vitally important that we do everything we can to keep California moving forward.

As to that, I will tell you a utility being in bankruptcy, talks about another one declaring certainly doesn't help us. When we talk about generation, as we all know, we have got to add capacity, we have got to add supply. When we have press releases which say there are going to be 5,000 megawatts added by August of this year and then another press release some 3 or 4 months later is issued saying, "Well, we are going to have 2,300."

Mr. RADANOVICH. Yes, if that.

Mr. HÉBERT. If some are saying 1,200 megawatts now, I will be frank with you, I don't think that is not enough to get it done, and there have to be some real tough decisions made by some leaders in California. Let me say this while I am before this committee, the debate that was brought forth by this committee I believe got information in front of FERC and other people that allowed us to make good decisions.

Mr. RADANOVICH. Okay. Then I would just express my gratification for the fact that FERC is going through this arbitrage, I guess, if you want to call it. And if the efforts of that, whatever refunds there are, can be directed toward making our utilities creditworthy again and getting them back in business would just go a long way to solving California's energy problems.

Mr. HÉBERT. My intent as Chairman of FERC and why I like the settlement process right now is to put the problems behind us and move forward. And then we can completely focus on getting the supply in and building the infrastructure. But right now we are still dealing with some past debts, and we really need to put that behind us.

Mr. RADANOVICH. Yes, I agree with you 100 percent, and appreciate your efforts in that area.

Mr. HÉBERT. Thank you.

Mr. BARTON. The gentleman from Oregon is recognized for 5 minutes. And would remind members the subject of the hearing is supposed to be hydro relicensing and nuclear. The FERC Chairman is here specifically for hydro licensing, although he is obviously knowledgeable on electricity issues in general.

Mr. HÉBERT. We did, as a part of our mitigation plan, remove obstacles and impediments to help squeeze out every megawatt, in-

cluding out of hydropower, and make it available, if that helps, for the record, Mr. Chairman.

Mr. BARTON. It does help. Thank you.

Mr. WALDEN. Mr. Chairman, thank you for the time. Chairman Hébert, I am delighted you are here. I was sort of hoping that Mr. Massey would be here as well, because it would be one of the rare times that his testimony and yours would actually be in concert on an issue, and I was looking forward to celebrating that.

I would commend you for the action that the Commission took in several instances to make changes in the way some of these projects were operated to provide more power during critical times. And I would specifically note one involving Idaho Power, where involving Twin Falls you allowed more power to be produced simply by reducing the water going over the falls that had been there for aesthetic purposes so you can see a falls, except on State and Federal holidays. Then we can flow the water. So that added, I think, 6,300 or 9.700 megawatt hours—15 to 17 percent increase.

And I don't need to tell you that in the Northwest where upwards of 70 percent of our power comes from hydro, we are both concerned about the relicensing process, how to fully maximize use of existing hydro. And then on a side note, it would be splendid, I think, to look at existing hydro projects where additional capacity could be achieved. There are all kind of reports out there where that is a possibility.

What disturbs me, though, are reports of a range of 1.6 to 8 percent reduction with relicensing. And yet we see that and it is almost dismissed by some as necessary. On the other hand, I go to the floor today, and we are going to debate another sort of price cap issue, because we are concerned about price. Price and supply are connected.

Mr. HÉBERT. They are.

Mr. WALDEN. And that brings us, I guess, to the relicensing process. And I have read through GAO's report. I have tried to wade through FERC's rather lengthy document as well. And I guess I am concerned about whether you view the ability of FERC to be able to really balance the need for an effective hydro system where these mandatory requirements of these other agencies. Is that possible to do or do those mandatory requirements actually trump your ability run a hydro system?

Mr. HÉBERT. You really put your finger on the crux of the problem. However, you mentioned Idaho Power, and that is a great example of how FERC can work with other agencies and can get things done in a very positive manner. We are trying to squeeze out every megawatt for the West so we can keep the lights on and keep prices at a reasonable level.

But, when we start looking at mandatory requirements, one of the problems that slows the process down, that adds cost and, in the end, probably means that we lose some very valuable megawatts that, quite frankly, we desperately need in the West right now, is that the resource agencies are not required to balance the mandatory requirements with power interests and other needs. FERC is the only agency that is statutorily bound to provide balance and therefore that is where the trump comes in.

Mr. RADANOVICH. So those agencies then really are able to define the operations of the projects—operation of a project in a way that they see fit, irrespective of the power generation issue. Is that accurate?

Mr. HÉBERT. Correct.

Mr. RADANOVICH. So, basically, what they tell you, you have to take and use, right?

Mr. HÉBERT. Pretty much, yes.

Mr. RADANOVICH. Now, it seems like, and I believe it is you alternative licensing process, sort of the up-front process, very collaborative involving all the stakeholders. That seems to result in a much rapid and reliable licensing process. Are there improvements from there that you see being able to be applied elsewhere?

Mr. HÉBERT. Let me tell you, we are learning from the collaborative process. It is something certainly we have seen work very well in the gas pipeline industry. When we get groups together, we choose the correct route in the first place. So we don't have a second route, we cut our processing time. So we don't miss the construction seasons. We get the infrastructure there quickly.

Our belief, and certainly my belief, is that that the same styled collaborative process with some adjustments down the road will aid and benefit Americans.

Mr. RADANOVICH. Let me ask you one final question, if I may. There has been some discussion about FERC's inability or lack of activity in reopening some of these projects for environmental issues as they have arisen. And yet aren't there are at least two examples in the Northwest and PGE and Idaho Power where those cases have been reopened for environmental reasons? My understanding.

Mr. HÉBERT. Let me get Mr. Robinson to answer that real quick.

Mr. ROBINSON. From the references you make, I am not familiar with the specific cases, but we have reopening type proceedings going on at all times, including projects for Idaho Power and PG&E. Most of those, and I think it speaks to the licensees trying to live within that community in which their projects exist and keep everything moving smoothly, include changes initiated by the licensees themselves coming and seeking amendments to their project to satisfy environmental concerns without us having to reopen those proceedings.

Mr. RADANOVICH. But you have the statutory authority to reopen, correct?

Mr. ROBINSON. In those licenses which include that provision, which I think since about 1975 or so is just about all the licenses we have issued since then and a good number before then.

Mr. RADANOVICH. Thank you, Mr. Chairman.

Mr. BARTON. Thank you. Does the gentleman from Michigan have additional questions? The gentleman is recognized for 5 additional minutes.

Mr. DINGELL. I thank you. Mr. Chairman, please tell us how many dams the Federal Energy Regulatory Commission has licensed new since 1978 on a year-by-year basis. You don't have to do that now, but please submit it for the record.

[The response appears at the end of the hearing.]

Mr. DINGELL. I would ask, though, how many new dams, large dams, have been licensed by FERC since 1990?

Mr. HÉBERT. Large?

Mr. DINGELL. Large.

Mr. HÉBERT. None.

Mr. DINGELL. None. How many between 1980 and 1990?

Mr. HÉBERT. I would like to look at the record, but my guess would be none. But I will provide that information.

Mr. DINGELL. I would appreciate that.

[The response appears at the end of the hearing.]

Mr. DINGELL. The reason I ask this question, Mr. Chairman, is your complaints about the different environmental statutes that you confront in licensing are not much of a problem because you simply issue—if the initial application is not properly perfected, you simply then issue a year extension to them and disregard the requirements of law that are so onerous to the applicants; is that not so?

Mr. HÉBERT. We do extend from time to time, but I would not say that we disregard the law; no, sir.

Mr. DINGELL. Well, your complaint, though, lies about relicensing; isn't that right?

Mr. HÉBERT. That is correct.

Mr. DINGELL. And so on relicensing if they are not ready to go forward on relicensing, you just give them a year extension; isn't that right?

Mr. HÉBERT. That has been done, yes.

Mr. DINGELL. So what is the delay that stems from these environmental requirements and these fish and wildlife protection requirements?

Mr. HÉBERT. Well, the delay is that if we don't have the relicensing provision that is finally completed, there continues to be costs that are borne by the ratepayers.

Mr. DINGELL. But not significantly, because you issue the renewal automatically; isn't that right?

Mr. HÉBERT. I would say significantly probably depends on if you live in Oregon, California or New York.

Mr. DINGELL. Well, if you live in Oregon, California or New York, you get your relicensing issued by an automatic renewal issued by the Commission. How much time and money does that cost?

Mr. ROBINSON. If I could add, relicensing process itself costs money. It takes——

Mr. DINGELL. How much?

Mr. ROBINSON. [continuing] effort and time.

Mr. DINGELL. How much?

Mr. ROBINSON. We calculated that the overall cost of supporting the application was around $85 per kilowatt of installed capacity. But that varies tremendously by the length of the licensing process. Fully 25 percent of the cost of relicensing occurs after the application is filed.

Mr. DINGELL. How long does it take—if I was to walk in to get a relicensing and you were just to issue me an automatic renewal, how long would it take me to get it and get out of there?

Mr. ROBINSON. The automatic renewal, if you came in——

Mr. DINGELL. How long would it take, and how many papers would I have to submit?

Mr. ROBINSON. You have to submit a significant amount of paper. In fact, most of our applicants now are asking if they can come in on CD-Rom, because the paper requirements are so large.

Mr. HÉBERT. I would love to provide the committee a matrix, basically, of what you are required to do. And I assure you, sir, it is uninviting.

Mr. DINGELL. All right. Now, how much delay then comes from the Clean Water Act about which you complain, Mr. Chairman? You told us this was a significant problem. The only thing that you have to do is show that they are in compliance with the Clean Water Act and that the placing of the dam or the renewal of the license is not going to create any additional pollution in the stream. The only pollutions I can think of that could flow from a dam would be the cooling of the water. What other situations would afflict the State agency and would affect adversely the water quality standards which would be fixed by the agency under Clean Water Act?

Mr. HÉBERT. Congressman Dingell, we have found that close to 40, I think it is 39, percent of the delay is caused by 401 Clean Water. And I will tell you I think that is a great point to make, because I think when Americans think of clean water, they think about preventing pollution. But, the 401 is used to establish many other things other than to make certain that we have clean water. I will go anywhere with you to ensure that we have clean water and we don't have pollution. I guarantee you that. But when there are costs that are borne by ratepayers because docks and camping facilities are included to meet Clean Water Act requirements.

Mr. DINGELL. Mr. Chairman, I don't mean to be discourteous, but I am limited on time.

Mr. HÉBERT. I am just trying to give you a full answer.

Mr. DINGELL. But I am trying to find out what you are compelled to enforce of the Clean Water Act in the relicensing process. The only change in water quality that comes from the issuance of that license is temperature. You don't increase salinity, you don't increase turbidity, you don't add salinity or anything else to the water. And there is no pollution, which is increased, which cannot be addressed by the State agency under its other powers against the polluter through other activities.

Mr. HÉBERT. Chairman Dingell, on pollution, I totally agree that we need to do everything we can. But, sir, the problem is that we don't get to define it. It is defined within the States, and the States throw a list of things in there, which don't have, quite frankly, anything to do with pollution or clean water.

Mr. DINGELL. Well, but that is not then a Clean Water Act problem; that is a different problem.

Mr. HÉBERT. It is the mandatory requirements of those resource agencies that they are able to use through 401.

Mr. DINGELL. Well, what are you supposed to do with those mandatory requirements?

Mr. HÉBERT. Well, we include them.

Mr. DINGELL. You include them?

Mr. HÉBERT. Absolutely; we are forced to.

Mr. DINGELL. Unless you issue an automatic renewal.

Mr. HÉBERT. For a year.

Mr. DINGELL. For a year.

Mr. HÉBERT. Which gets us nowhere, sir. I am trying to make good decisions that will give American's decisions they can rely on for more than 365 days at a time.

Mr. DINGELL. I hope you are not offended, but what it tells me is that it gets them and you to the point where you issue another one of these automatic renewals at the end of the year. And then at the end of that year, another automatic renewal, and the end of that year, another automatic renewal.

Mr. HÉBERT. Well, let me sum it up by saying this: With all due respect, I will do whatever you think is important to ensure that we have clean water and that pollution is prevented. But, sir, with all due respect, looking at something from year to year is exactly the type of mentality that got us to California with the lack of supply and the lights going on and energy costs high.

Mr. DINGELL. My concern here is that you were complaining about the burden of enforcing the State water quality standards. I don't think there are any State water quality standards I find here that would cause you any significant trouble since the dam contributes nothing to the level of pollution in the river, with the possible exception of a change of the thermal temperature of the river. I yield to my friend, the chairman.

Mr. BARTON. Well, I am just saying the gentleman's time expired about 3 minutes ago.

Mr. DINGELL. Can I get an answer to the question, Mr. Chairman?

Mr. BARTON. I think he has answered it three or four times in somewhat slightly different variations. If you ask the question again three or four times——

Mr. DINGELL. It would comfort me if I could get an answer.

Mr. BARTON. Well, we want you comforted, so——

Mr. DINGELL. Otherwise, I will be sad.

Mr. HÉBERT. Can I do it this way: Congressman Dingell is absolutely right. Would that help?

Mr. BARTON. It is okay by me. If that satisfies him. I am not sure that would satisfy him.

He may think he has asked the question wrong if you say he is totally right.

Mr. DINGELL. I was sort of afraid that you would come to that conclusion, Mr. Chairman, but I am comfortable with it.

Mr. BARTON. All right. Before I go to Mr.——

Mr. HÉBERT. I respect your opinion, Congressman Dingell.

Mr. BARTON. We are going to recognize Hydro Man Shadegg here, but under your chairmanship on the issue that Mr. Dingell was talking about, has the FERC Commission in the time you have been either a commissioner or Chairman of it operated any differently on these automatic renewals? In other words, have you continued the existing practices in place when you came on the Commission? Or have you changed any procedures in the issues that Mr. Dingell was asking about?

Mr. HÉBERT. We are hopeful that through our 603 report we will make changes, but they have not been made at this point, no. And

the renewals that Congressman Dingell is speaking about I don't have the ability to grant or not; they are automatic.

Mr. BARTON. But that is not a practice that you established as Chairman. It was a practice that was in place when you came on to the Commission and then became Chairman.

Mr. HÉBERT. That is correct and required by law. And I am trying to get out of the year to year. I am trying to either grant a license or deny a license and move forward.

Mr. BARTON. Okay. The gentleman from Arizona is recognized for 5 minutes.

Mr. SHADEGG. Thank you, gentlemen, and I want to thank our witnesses, particularly Commissioner Hébert, for being here. I appreciate the work he is doing in a difficult climate as the country faces an energy crisis, and we in the west coast in particular face one. And I think the Commission is attempting to respond to the various pressures and demands on it, which are intense.

This hearing is devoted to, in part, nuclear energy but also, in part, hydropower. I am, as the chairman has indicated by his quip, Hydro Man. I am a strong proponent of hydropower, because I believe it holds the potential to provide very clean energy at a very low cost. It is uniquely suited to dealing with peaking problems, which is the problem we face in California and other places. And it can do so in an environmentally neutral fashion.

And, therefore, I think it is something we ought to be looking at? I believe, Mr. Chairman, you may know that I am responsible for proposing legislation that would allow the addition of new turbines to existing dams which have no turbines and the addition of more efficient turbines as a substitute for inefficient turbines current in dams. We are not talking about building new dams; we are talking about generating more electricity at the dams that we already have.

In that regard, I want to ask you a question about the relative cost of preparing a license application and implementing the environmentally based mandatory condition measures between smaller hydro projects and the projects which are naturally gas-fueled, as most of them are. The information I have suggests that the total cost for a small hydropower project is about $1,900 per kilowatt hour versus as little as $500 per kilowatt hour at a gas-fired generating plant.

It seems to me to make no sense to take a plant that uses natural gas, of which we have a finite supply and which does in fact pollute to some degree, even though it probably pollutes less than any other we have besides nuclear and hydro, and make the regulatory cost much less for that source than it is for a clean source like hydro. And if you could address that, I would appreciate it.

Mr. HÉBERT. Well, what we are committed to doing is to try to lessen the cost of regulation, be it on hydro or gas or anything else. But, certainly, it is important right now during this time of needed supply with questionable reliability to have any and all energy. You talk about gas, you talk about hydro, you talk about nuclear. The one that you are consistently talking about is fuel.

And when you look at the opportunities for fuel, you look at nuclear, you look to hydro. You have to believe, as I know you do believe, that those are available resources that are clean when it

comes to air quality, and we need to be looking for every available opportunity that is out there. But at the same time, we must be committed to speeding up that process and therefore cutting the costs. Because, as you know, the cost is always picked up by the ratepayers; it gets to them.

Mr. SHADEGG. It seems to me, and I still didn't—maybe I am not unlike former Chairman Dingell in this regard. I am not certain I heard an answer. Let me ask you point blank, does it make sense for us to have a regulatory structure where it costs almost four times as much to license a hydropower plant as it costs to license a new natural gas-fired plant?

Mr. HÉBERT. It does not make economic sense. I will tell you that there are burdens within the regulatory scheme, when you look at hydro, that are not there, when it comes to simple cycle or combined cycle natural gas. Specifically, we are talking about recreation. We are talking about fish. So there are added environmental aspects that we must protect that are important as well.

Mr. SHADEGG. It seems to me that we ought to be looking at policies which say that if it is a small hydro plant with very little environmental implication, we ought to be what we can to reduce those licensing costs. And right now I think there is a lower licensing burden for extremely small hydro plants, but we ought to be looking at whether or not that is set at an appropriate level.

The other question I want to ask you is that between 1982 and 1992 there was a median processing time for relicensing cases of 30 months. Now, in the decade or in the time span between 1993 and 2000, that median processing time has grown to 43 months. It seems to me, if the Nation faces an energy crisis, as I believe it does, we need to be going in the opposite direction on that time span, and I would like to give you a chance to address that issue.

Mr. HÉBERT. That one is easy: I agree with you 100 percent. We need to squeeze every megawatt that is available out there, and we need to get available capacity and supply quickly. That not only means hydro capacity; it also means natural gas, it means clean coal technologies, it means nuclear. It also means intrastate capacity on pipes within States. We have seen problems in California where they can't deliver to it once we get it to them in the border. We also need better interstate capacity on pipes.

Several years ago, I testified right here where they talked about 30 TCF marketplace by the year 2010. If we do what is in the queue now of natural gas, there was a projection from Wall Street about a month or 2 ago that said we would be at 30 TCF by the year 2004. We certainly do not have the infrastructure to supply that.

Mr. SHADEGG. My last question may seem like a trick question, but it is not. I don't know—I know the legislation I have sponsored would both allow the installation of generating turbines in dams that don't have turbines but water comes through those dams, so we could capture that fuel. You called it a fuel. I brought a hydrologic cycle in here from a fourth grade textbook in 1999 and pointed out that with hydro it really isn't fuel; it is kind of a continuing process of nature, and we went through a little lesson on hydrology.

Mr. HÉBERT. Since you are the expert, I would say that is right.

Mr. SHADEGG. That is right. Well, fourth graders learn it. But I guess the second part of my bill says we ought to encourage the installation of more efficient newer turbines in existing dams. Now, I can concede that there might be an environmental implication for putting a turbine into a dam that does not now have a dam, though it is not the building of a new dam, about which there are great environmental concerns.

But I guess my question of you is, are you aware of any environmental implication by pulling an inefficient turbine out of an existing dam and putting a more efficient turbine into that dam?

Mr. HÉBERT. Well, FERC has taken a strong position on efficiency as a very good thing, and we should move in that direction. At this point, no, I am not aware of any, and I would think if you are going to put in new turbines, you could improve upon the environmental benefits of that turbine.

Mr. SHADEGG. Precisely. Thank you, Mr. Chairman. I yield back the balance of my time.

Mr. BARTON. Does the gentleman from Massachusetts wish to ask questions? Okay.

Mr. HÉBERT. I was hoping for a song.

Mr. BARTON. Do not encourage the gentleman from Massachusetts now.

Mr. HÉBERT. He wanted to talk about windmills last night.

Mr. BARTON. He is being cooperative. We do not want you to bait him, okay?

Mr. HÉBERT. We had a discussion on Cervantes.

Mr. BARTON. We are going to hold the witness in contempt of the Chair here.

Mr. HÉBERT. I am sorry.

Mr. BARTON. We do thank you——

Mr. HÉBERT. Thank you.

Mr. BARTON. [continuing] Chairman and the associates from FERC. We will have written questions for the record. Any ideas on legislation in this area you need to get to us at the member staff level in the next week, because we want to mark this up the week we come back after July 4.

Mr. HÉBERT. I will. And once again, Mr. Chairman, if I may close with saying I really appreciate all members of this committee. I certainly appreciate your leadership in helping us get the debate out there to move California in the right direction.

Mr. BARTON. Well, we do think that now that you are at a five-member commission, you are doing excellent work, and you, as Chairman, are to be commended. Many of the things that you and I talked about on the record last summer have come to pass in a negative sense in terms of the environment. But on the positive side, many of the solutions that we have both supported, somewhat grudgingly, in cases are beginning to be implemented, and we are seeing an improved situation. You are to be commended for that. You don't get too much public commendation, and I want to commend you.

Mr. HÉBERT. Thank you. I would commend the FERC staff, and I appreciate you saying that.

Mr. SHADEGG. Mr. Chairman? Mr. Chairman?

Mr. BARTON. Yes.

Mr. SHADEGG. Thank you. I missed Chairman Dingell's questioning, but I just wanted to ask Mr. Hébert if he had an opportunity—if he needed to clarify the water quality certification process and the burden on States, in light of the questioning that occurred before?

Mr. HÉBERT. I would be more than happy, and it would help me to be able to provide additional testimony on that to the committee.

Mr. SHADEGG. That would be very helpful.

[The response appears at the end of the hearing.]

Mr. BARTON. We are going to excuse this panel and call forth our last panel of the day. We have Barry Hill, who is director of the Natural Resources and Environment Department of the Government Accounting Office, and he is accompanied by Mr. Charles Cotton. We should have Mr. John Prescott, the vice president of Generation for Idaho Power. We should have Ms. Elizabeth Birnbaum, who is the director of Government Affairs for the American Rivers Association. And we should have Mr. Ronald Shems, who is appearing on behalf of the Vermont Agency of Natural Resources.

If we could shut the door there at the back of the hearing room, if one of the folks could shut that door.

Well, welcome. It has been a long day. We appreciate you agreeing to testify. We are going to start with Mr. Hill, then we will go to Ms. Barlow, Mr. Prescott and Ms. Birnbaum, and last but not least Mr. Shems. Your testimony is in the record in its entirety, so we will recognize each of you for 5 minutes to verbally summarize it.

Welcome, Mr. Hill.

STATEMENTS OF BARRY T. HILL, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT; ACCOMPANIED BY CHARLES S. COTTON, ASSISTANT DIRECTOR AND ERIN BARLOW, SENIOR ANALYST, NATURAL RESOURCES AND ENVIRONMENT, GENERAL ACCOUNTING OFFICE; JOHN PRESCOTT, VICE PRESIDENT OF GENERATION, IDAHO POWER COMPANY; S. ELIZABETH BIRNBAUM, DIRECTOR, GOVERNMENT AFFAIRS, AMERICAN RIVERS; AND RONALD SHEMS, ATTORNEY, SHEMS, DUNKIEL, PLLC, ON BEHALF OF VERMONT AGENCY OF NATURAL RESOURCES

Mr. HILL. Thank you, Mr. Chairman. I am pleased to be here today to discuss the process that FERC uses to issue licenses for constructing and operating non-Federal hydropower projects.

In recent years, some licensees and other participants in FERC's licensing process have expressed concern that obtaining a license now takes too long and costs too much. Responding to these concerns, FERC established an alternative licensing process, and other Federal agencies have introduced reforms intended to make the licensing process more efficient and less costly. However, these reforms did not quell the concerns. As a result, in November 2000, the Congress directed FERC to conduct a comprehensive review of the policies, procedures and regulations relating to the licensing of non-Federal hydropower projects to determine how to reduce the time and cost associated with obtaining a license.

Prior to the enactment of this statute, the chairman of the House Appropriations Subcommittee on Interior and Related Agencies

asked GAO identify and assess significant issues related to the process. We reported our findings on May 2 of this year, and FERC reported its findings on May 8. Both reports observed that Federal and State land and resource agencies, licensees, environmental groups, and other participants in the licensing process, acknowledge that the process to obtain a license is far more complex, time-consuming and costly today than it was 30 to 50 years when FERC issued original licenses to own and operate about 1,000 non-Federal hydropower projects.

Today, FERC faces a formidable challenge in issuing a license that is legally defensible, scientifically credible and likely to produce and enhance fish and wildlife and other resources while still preserving hydropower as an economically viable energy source.

Both FERC and we also found that participants in the licensing process do not agree on the effectiveness of recent reforms to the process or on the need for further reforms to shorten the process and make it less costly. Some within and among the diverse parties believe that the time and money spent on licensing a project reflect the level of complexity of the issues involved. And that recent reforms will likely reduce the time and cost needed to obtain a license. Conversely, others believe that recent reforms will do little to reduce time and costs. However, they cannot agree on what further reforms are needed to shorten the process and make it less costly.

FERC and we do not agree, however, on the better time and cost data to reach informed decisions about process reforms. To resolve the disagreement among process participants and to reach informed decisions on the effectiveness of recent reforms and the need for further administrative reforms or legislative changes, we believe that FERC needs to work with other process participants to develop a system to collect and share complete and accurate data on process related time and costs by participant, project and process step, and develop the ability to link the data to projects displaying similar characteristics in order to identify those projects, process and outcome characteristics that increase the time and cost to obtain a license.

Conversely, FERC believes that available data, coupled with its years of experience with the licensing process are adequate to reach informed decisions on the effectiveness of recent reforms to the licensing process, as well as the need for further reforms to the process.

Mr. Chairman, if FERC Federal and State land and resource agencies, licensees, environmental groups, and other participants in the licensing process agreed on whether further reforms are needed to reduce process related time and costs, then the importance of good data to reach good decisions would be diminished. However as FERC states in its May report, the areas of agreement tend to be overshadowed by disagreements among process participants. As a result, the recommendations in FERC's report reflect only the views of its staff on how to make the process more efficient.

We believe that both the Commission and the Congress need to carefully consider the recommendations made by the FERC staff.

Some of the recommendations appear to be based on inadequate or inappropriate data, and more importantly, some, such as making FERC the sole Federal decisional authority for licensing conditions and processes, may cause changes and unintended consequences to the outcomes of the process.

Mr. Chairman, this concludes my statement. I would be happy to answer any questions you may have.

[The prepared statement of Barry T. Hill follows:]

PREPARED STATEMENT OF BARRY T. HILL, DIRECTOR, NATURAL RESOURCES AND ENVIRONMENT, UNITED STATES GENERAL ACCOUNTING OFFICE

Mr. Chairman and Members of the Subcommittee: We are pleased to be here today to (1) discuss our May 2, 2001, report on the process used by the Federal Energy Regulatory Commission (FERC) to issue licenses to construct and to operate nonfederal hydroelectric power (hydropower) projects [1] and (2) provide our preliminary views on FERC's congressionally mandated May 8, 2001, report on hydroelectric licensing policies, procedures, and regulations.[2]

In summary:

- FERC, federal and state land and resource agencies, licensees, environmental groups, and other participants in the licensing process acknowledge that the process to obtain a license is far more complex, time-consuming, and costly today than it was 30 to 50 years ago when FERC issued original licenses to own and operate about 1,000 nonfederal hydropower projects. Today, FERC faces a formidable challenge in issuing a license that is legally defensible, scientifically credible, and likely to protect and enhance fish, wildlife, and other resources while still preserving hydropower as an economically viable energy source.
- Both FERC and we have reported that participants in the licensing process do not agree on the effectiveness of recent reforms to the process or on the need for further reforms to shorten the process or make it less costly. Some within and among the diverse parties believe that the time and money spent on licensing a project reflect the level of complexity of the issues involved and that recent reforms will likely reduce the time and costs needed to obtain a license. Conversely, others believe that recent reforms will do little to reduce time and costs. However, they cannot agree on what further reforms are needed to shorten the process and make it less costly.
- FERC and we do not agree, however, on the need for better time and cost data to reach informed decisions about process reforms. To resolve the disagreement among process participants and to reach informed decisions on the effectiveness of recent reforms and the need for further administrative reforms or legislative changes, we believe that FERC needs to work with other process participants to develop (1) a system to collect and share complete and accurate data on process-related time and costs by participant, project, and process step and (2) the ability to link the data to projects displaying similar characteristics in order to identify those project, process, and outcome characteristics that can increase the time and costs to obtain a license. Conversely, FERC believes that available data coupled with its "years of experience" with the licensing process are adequate to reach informed decisions on the effectiveness of recent reforms to the licensing process as well as the need for further reforms to the process.
- After reviewing FERC's May 8, 2001, report, we continue to believe that good data are needed to reach good decisions. Moreover, we believe that both FERC's five-member Commission and the Congress need to carefully consider the recommendations made by FERC staff. Some of the recommendations appear to be based on inadequate or inappropriate data and some may change the outcomes of the process.

Background

About 10 percent of all electricity production in the United States is generated by hydropower projects. Federally owned and operated hydropower projects generate approximately half of this amount, while about 1,000 nonfederally owned and oper-

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[1] *Licensing Hydropower Projects: Better Time and Cost Data Needed to Reach Informed Decisions About Process Reforms* (GAO-01-499, May 2, 2001).

[2] *Report on Hydroelectric Licensing Policies, Procedures, and Regulations: Comprehensive Review and Recommendations Pursuant to Section 603 of the Energy Act of 2000,* prepared by FERC staff (May 8, 2001).

ated hydropower projects, which are licensed by the federal government, generate nearly all of the rest.[3] Hydropower projects can include dams, reservoirs, stream diversion structures, powerhouses containing water-driven turbines, and transmission lines.

Hydropower is an important part of the nation's energy mix. It offers the benefits of a comparatively inexpensive, emission-free, renewable energy source, the quantity of which can be increased quickly in periods of peak demand. In addition, the reservoirs behind hydropower dams often provide other benefits, including recreation, flood control, irrigation, and a municipal water supply. However, hydropower projects can also have adverse effects on ecosystems and resources, including fish and wildlife. They can change the fundamental chemical, physical, and biological processes of river ecosystems by (1) fluctuating river levels and altering the timing of flows, (2) blocking the downstream flow of nutrients and sediments, (3) changing water temperatures and oxygen levels, (4) impeding fish from migrating up and down streams or killing them as they pass through turbines used to generate power, and (5) drying out sections of streams.

The Federal Power Act (FPA) authorizes FERC to issue licenses to construct and to operate nonfederal hydropower projects. FERC—an independent five-member commission appointed by the President and confirmed by the Senate—issues licenses valid for periods up to 50 years, after which the projects must be relicensed in order to continue operations.

FERC issued original licenses for most of the about 1,000 nonfederal hydropower projects decades ago. It now issues few licenses to construct and operate new hydropower projects. Therefore, most of FERC's licensing activities relate to the relicensing of projects with licenses currently nearing their expiration dates.

Between January 1, 1993, and December 31, 2000, the licenses for 395 of these projects expired. Many of these were small projects that do not generate much power. According to FERC, over the next 15 years, the licenses for another 238 projects will expire. The 238 projects, many of which are large, combine to generate over half of the nation's nonfederal hydropower.

In recent years, some licensees and other participants in the licensing process have expressed concern that obtaining a license now takes too long and costs too much. Responding to these concerns, FERC established an alternative licensing process, and other federal agencies have introduced reforms intended to make the licensing process more efficient and less costly. However, these reforms did not quell the concerns. As a result, in November 2000, the Congress directed FERC to conduct a comprehensive review of the policies, procedures, and regulations relating to the licensing of nonfederal hydropower projects to determine how to reduce the time and costs associated with obtaining a license. FERC reported its findings on May 8, 2001.

The Licensing Process Is More Complex, Lengthy, and Costly Than It Was 30 to 50 Years Ago

FERC and other participants in the licensing process acknowledge that the process is far more complex, time-consuming, and costly today than it was when FERC issued the approximately 1,000 original hydropower licenses 30 to 50 years ago. Since 1986, the Commission has been required to give "equal consideration" to, and make tradeoffs among, hydropower generation and other competing resource needs, including protecting and enhancing fish and wildlife.

Moreover, FPA authorizes federal and state agencies other than FERC to influence license terms and conditions, and in some instances, precludes FERC from altering license conditions imposed by other agencies. Environmental and land management laws—enacted primarily during the 1960s and 1970s—have placed additional requirements on these agencies to address specific resource needs, including protecting endangered species, achieving clean water, and preserving wild and scenic rivers.

In addition, section 401 of the Clean Water Act—added in 1972—requires anyone seeking a license or permit for a project that may affect water quality to seek approval from the relevant state water quality agency. States have begun to use section 401 to influence license terms and conditions.

The regulations adopted by FERC under FPA also require FERC to involve the public in the licensing process. Public values toward hydropower have changed and now reflect a growing concern about the environmental impacts of hydropower projects.

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[3] About 600 additional small generating capacity hydropower projects are exempted from the federal licensing requirement. "Projects" in this testimony refers to the large, licensed hydropower projects.

Changing public values, coupled with requirements to give equal or greater consideration to environmental concerns than to hydropower generation, have resulted in new license conditions intended to protect and enhance fish, wildlife, and other resources. For example, in an effort to reduce the risk to fish resources, new licenses may include conditions that require licensees to change minimum streamflows, construct fish-passage facilities, install screens and other devices to prevent fish from being injured or killed, limit the amount or timing of reservoir drawdowns, or purchase or restore lands affected by a project.

Attempts to balance and make tradeoffs among competing economic and environmental interests and to improve the environmental performance of projects, while preserving hydropower as an economically viable energy source, have lengthened the process and made it more costly.

Participants Cannot Agree on the Need for, and Type of, Reforms to the Licensing Process

FERC, federal and state land and resource agencies, licensees, environmental groups, and other participants in the licensing process do not agree on whether further reforms are needed to reduce process-related time and costs.

Some participants believe that the time and money spent on project licensing reflect the level of complexity of the issues involved. They consider the process to be worthwhile as long as it results in a new license that is legally defensible, scientifically credible, and more likely to protect and enhance resources over the term of the license. Some of these participants also believe that recent reforms will likely reduce the time and costs associated with obtaining a new license and that additional reforms may not be necessary. For example, they believe that, when compared with projects using the traditional licensing process, projects using FERC's relatively new alternative licensing process are more likely to obtain licenses before their old ones expire and less likely to have their license decisions delayed as a result of administrative and judicial reviews.

Other participants in the licensing process believe that recent reforms will do little to reduce the time and costs to obtain a new license. For example, they believe that licensees and other participants will not use FERC's alternative licensing process for projects that involve contentious issues or when participants have conflicting values and concerns. They also believe that, while the alternative licensing process may shorten the time required to obtain a new license, it may also be more costly than the traditional licensing process. However, these participants cannot agree on what further administrative reforms or legislative changes are needed to shorten the process and make it less costly.

FERC Needs Better time and Cost Data to Reach Informed Decisions on the Effectiveness of Recent Reforms and the Need for Further Reforms to the Licensing Process

To reach informed decisions on the effectiveness of recent reforms to the licensing process as well as the need for further reforms to the process, FERC must accomplish two tasks.

First, it needs complete and accurate data on process-related time and costs by participant, project, and process step. Currently, FERC does not systematically collect much of these data. For example, because it has not provided clear guidance to the other agencies on what costs they should report, FERC cannot identify other federal agencies' actual costs to participate in the licensing process.[4] In addition, FERC does not request, and states generally do not report, their process-related licensing costs. Similarly, although some licensees have voluntarily reported their process-related licensing costs to FERC, FERC does not request licensees to report these costs.

Second, FERC needs to identify (1) why certain projects or groups of projects displaying similar characteristics take longer and cost more to license than others do and (2) why the time and costs to complete certain process steps vary by project or group of similar projects. Similar characteristics may be project-related, such as whether the project is on federal land; process-related, such as whether FERC had to resolve a dispute during the process between the licensee and a federal or state agency; or outcome-related, such as whether the terms and conditions of a new license compromise the project's economic viability or environmental performance.

Our May 2, 2001, report contained recommendations that, if implemented, would allow informed decisions on the effectiveness of recent reforms to the licensing process as well as the need for further reforms to the process. In its written comments

[4] *Hydropower Relicensing: Federal Costs Are Not Being Recovered* (GAO/RCED00107, June 30, 2000).

on a draft of our report, FERC agreed that it does not systematically collect complete and accurate data on process-related time and costs by participant, project, and process step. However, it believed that it did not need these data to make recommendations on further reforms to the licensing process. Rather, its May 8, 2001, report is based on the limited data that were available as well as FERC's "years of experience" with the licensing process.

Observations on FERC's may 2001 Report and Recommendations

Mr. Chairman, if FERC, federal and state land and resource agencies, licensees, environmental groups, and other participants in the licensing process agreed on whether further reforms are needed to reduce process-related time and costs, then the importance of good data to reach good decisions would be diminished. However, as FERC states in its May report, "the areas of agreement tend to be overshadowed by disagreements" among process participants. As a result, the recommendations in FERC's report reflect only the views of its staff on how to make the process more efficient.

We believe that both the Commission and the Congress need to carefully consider the recommendations made by FERC staff. Some of the recommendations appear to be based on inadequate or inappropriate data and some may change the outcomes of the process. For example:

- The report states that the "most effective way to reduce the cost and time of obtaining a hydropower license would be for Congress to make legislative changes necessary to restore the Commission's position as the sole federal decisional authority for licensing conditions and processes." However, FERC and its independent predecessor (the Federal Power Commission) have never had the "sole federal decisional authority for licensing."[5] Thus, FERC staff are asking the Congress to restore an authority that the Commission has never had.
- The report states that changes to regulations and policies "are not an adequate substitute for legislative reform." However, the report notes that a 1993 FERC policy to issue draft environmental analyses for comment added about 6 months to the relicensing process. Thus, it appears that there are opportunities to reduce time and costs within the existing legislative framework.
- FERC's report states that it "focuses on relicensing of existing hydropower projects, as relicenses comprise the great majority of licensing proceedings currently and for the foreseeable future." However, 14 of the 16 projects that it uses to "illustrate vividly how the dispersal of decisional authority can work to paralyze a licensing proceeding" are for original licenses to construct new projects, not to relicense existing ones.
- The scope of FERC's review was limited to reducing process-related time and costs. However, its recommendation to establish "one-stop shopping" at FERC could affect the emphasis given to protecting and enhancing fish, wildlife, and other resources. Thus, any potential gains in efficiency from establishing "one-stop shopping" at FERC would need to be weighed against the policy reasons that led to separating the responsibility for licensing hydropower projects from the responsibility for ensuring regulatory compliance with environmental and other laws.

Mr. Chairman, this concludes my formal statement. I will be pleased to respond to any questions that you or other Members of the Subcommittee may have.

Mr. WALDEN [presiding]. Thank you, Mr. Hill.

Now, let us go to Mr. Prescott. I would like to welcome you to present your testimony, and thanks for being here.

STATEMENT OF JOHN PRESCOTT

Mr. PRESCOTT. Okay. Mr. Walden, members of the subcommittee, thank you very much for giving me the opportunity to appear before you to discuss the important role that hydropower has played and must continue to play in our Nation's energy policy.

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[5] Prior to 1930, the Commission (then known as the Federal Power Commission) was comprised of three Cabinet officials, the Secretaries of Agriculture, the Interior, and War. 42 Stat. 1063 (1920). In 1930, the Commission was reorganized as a five-person body independent of the Secretaries. 46 Stat. 797 (1930). Throughout its history, the Commission's licensing authority has been subject to the mandatory condition provisions of what are now sections 4(e) and 18 of the Federal Power Act. *See* 42 Stat. 1065, 1073 (1920). Accordingly, FERC and its independent predecessor have never had the "sole federal decisional authority for licensing."

I appear before you in two capacities: As vice president of Generation for Idaho Power Company and as a representative of the hydropower industry. As a board member of the National Hydro Association, my testimony today reflects the sentiments of a thorough cross-section of the industry.

The benefits of hydropower and its importance to our Nation's environmental and energy policy objectives are well documented. Hydropower is not only our largest renewable energy resource; it is low cost and efficient, and it provides Americans with abundant recreational opportunities, as well as flood control and irrigation benefits. It is also emissions-free, which in a time of ongoing concern over greenhouse gases cannot be overlooked.

As California and the West grapple with an energy supply insufficient to meet growing demand, it is another of hydro's attributes that has taken on increased importance: reliability. The management of the Nation's electric grid depends upon fast, flexible generation sources like hydro to meet peak power demands and to restore service after a blackout. Hydro's ability to go from zero power to maximum output quickly makes it exceptionally good at meeting changing loads and providing ancillary services.

Despite these many benefits, we are in danger of losing hydropower capacity and operational flexibility at a time when it is most needed. As we face rising energy prices, energy shortages, reliability and pollution concerns, now is the time for policymakers to better incorporate hydropower into the Nation's energy strategy. To that end, I applaud Chairman Barton for holding this hearing.

As lawmakers devise an energy strategy, I offer the following thoughts on how best to address the decline of hydropower and to encourage development of additional hydro capacity at existing sites, steps that would allow the country to increase its use of renewable, emissions-free generation in an environmentally compatible manner.

Most importantly, the hydropower relicensing process needs to be fixed. Over the next 15 years, 240 projects in 38 States, nearly 29,000 megawatts of power, must undergo the FERC relicensing process. Idaho Power alone must relicense nearly 1,500 megawatts before the year 2010.

As has been well documented in congressional hearings over the past few years, the process suffers from dispersed decisionmaking authority and an inability to balance competing values. The bottom line is that costs, delays and conflicting mandates inherent in the process threaten generation capacity and operational flexibility. As we lose megawatts and flexibility, we must rely on less efficient generation sources that both cost more and produce greenhouse gas and other emissions.

While many studies and reports have found varying levels of generation loss due to relicensing, we should not be haggling over figures. The point is that in today's tight energy climate, any loss in electrical generation, especially from such a clean, cost-efficient source, is too much.

How did we get to this point? Why such a dysfunctional process? Most of it can be boiled down to one unfortunate reality: The process fails to properly balance the environmental impact of hydro

projects with the crucial energy and non-energy values of the resource.

Under Federal law, FERC has the responsibility and authority to strike a balance between power and environmental values. The courts, however, have interpreted the Federal Power Act so as to prevent any balancing from taking place. The courts have given Federal resource agencies the authority to set mandatory conditions on FERC relicenses, conditions that cannot be altered or changed by FERC. FERC has no opportunity to balance the license in the broadest public interest. The net result is that no one has the authority to look at the big picture.

Some have suggested that the problems with the licensing process can be solved solely through administrative means. I disagree. Properly developed and implemented administrative remedies can help on a number of fronts and should be encouraged. But taken alone, administrative reforms can not fully address the fundamental and substantive problems with the process.

Legislative fixes are necessary if we are to truly fix the hydroelectric licensing process. The issue of licensing improvement transcends partisanship. In addition to the Towns bill's bipartisan roster of cosponsors, both Senate energy packages contain hydro licensing language. The FERC 603 report echoes the call for legislative reform, and the Bush Administration's national energy plan declares licensing improvement to be a top energy policy priority. We are encouraged by the emerging consensus on this issue and look forward to continuing to work with Chairman Barton, Congressman Boucher and the entire subcommittee on enacting balanced, bipartisan licensing improvement measures this year.

In closing, the hydropower industry strongly believes that healthy rivers and hydropower can coexist. As we look to self-sustaining energy strategies, now is the time to better incorporate hydro into the Nation's energy mix. Reforming the license process and providing incentives for hydro development at existing sites can benefit hydro producers, the environment and consumers and is a goal that all Americans should support. Thank you.

[The prepared statement of John Prescott follows:]

PREPARED STATEMENT OF JOHN PRESCOTT, VICE PRESIDENT OF GENERATION, IDAHO POWER COMPANY

Chairman Barton, members of the Subcommittee, thank you very much for giving me the opportunity to appear before you today to discuss the important role that hydropower has played and must continue to play in our nation's energy policy.

I appear before you today in two capacities. First and foremost, as Vice President of Generation for Idaho Power Company. Hydroelectric power plays an integral role in our company's generation base. In an average water year, Idaho Power Company's 17 hydroelectric plants provide approximately 60% of our generation. Perhaps equally important, hydroelectric power's unique ability to follow customer load allows us to use this resource in an efficient and comparatively low-cost manner. These are the paramount reasons that Idaho Power Company has been rated as one of the nation's lowest cost providers of electric energy, and in 1998, we were rated as the most efficient electricity provider by *Public Utilities Fortnightly.*

I am also here representing the hydropower industry. As a board member of the National Hydropower Association for the past year, I have participated in numerous discussions with industry colleagues and non-industry stakeholders as to the challenges and opportunities facing hydropower in the 21st century. In addition, Idaho Power Company is an active member of the Hydroelectric Licensing Reform Task Force, a coalition of public and investor-owned hydropower generators drawn from the memberships of the American Public Power Association, the Edison Electric In-

stitute, and the National Hydropower Association. As such, my testimony today reflects the sentiments of a thorough cross-section of the hydropower industry. We are also members of *WaterPower: The Clean Energy Coalition,* a group of over 660 consumer, labor, environmental, farming and other organizations that recognize the need to improve the hydro licensing process.

Hydropower accounts for about ten percent of the nation's electricity and over 80 percent of its renewable energy. The benefits of hydropower, and its continued importance to our nation's environmental and energy policy objectives are well documented. Hydropower is not only our largest, renewable energy resource; it is low cost and efficient; it is a purely domestic resource; and it provides Americans with abundant recreational opportunities, as well as many flood control and irrigation benefits. It is also an emissions-free resource, which in a time of ongoing concern over greenhouse gases cannot be overlooked. In 1999, hydro displaced the emissions of 77 million metric tons of carbon; that is the equivalent of removing 62.2 million passenger cars, nearly 50% of the current fleet, from our nation's roadways. In addition, emissions-free hydropower generation helps us avoid significant amounts of Nitrogen Oxide (NO_X) and Sulfur Dioxide (SO_X), which are major contributors to decreased air quality.

As California and the West continue to grapple with an energy supply insufficient to meet growing consumer and industrial demand—and as this crisis now threatens to expand throughout the rest of the nation this summer—it is another of hydropower's attributes that has taken on increased importance: its reliability. The management of the nation's electric grid depends upon fast, flexible generation sources like hydropower to meet peak power demands and to restore service after a blackout. Hydropower's ability to go from zero power to maximum output quickly and predictably makes it exceptionally good at meeting changing loads and providing ancillary electrical services.

Despite these varied benefits, supply of hydropower is waning and America is in danger of losing significant hydropower capacity and operational flexibility at a time when it is most needed. As we face rising energy prices, increased levels of pollution, energy shortages and reliability concerns, now is the time for policymakers at the federal level to better incorporate hydropower into the nation's long-term energy strategy. To that end, I applaud Chairman Barton for holding this hearing.

As lawmakers devise a long-term energy strategy, I offer the following thoughts on how best to address the decline of hydropower as well as to encourage development of additional hydropower capacity at existing sites; steps that would allow the country to increase its use of renewable, emissions-free generation in an environmentally compatible manner and to strengthen the reliability of the transmission system.

Hydropower Relicensing Reform

First and foremost, the hydropower relicensing process needs to be fixed. Over the next 15 years, two-thirds of all non-federal hydroelectric capacity—nearly 29,000 MW of power (enough to serve 29 million homes)—must undergo the Federal Energy Regulatory Commission's (FERC) relicensing process. This includes 240 projects in 38 states, much of it in western states where power supply is a major concern. Idaho Power alone is in the process of relicensing 1,485 megawatts before 2010, including the 1,167 megawatt Hells Canyon Complex.

As has been well documented in Congressional hearings over the previous few years, and most recently by FERC in its Section 603 Report issued this past May, the licensing process suffers from dispersed decision-making authority and an inability to balance competing values. The bottom line is that costs, delays, and conflicting mandates inherent in the process threaten generation capacity and operational flexibility throughout the nation. As we lose megawatts and operational flexibility, we must rely on less efficient generation sources that both cost more and produce greenhouse gas and other emissions.

One note on generation loss. FERC, in its 603 Report, reviewed all relicense proceedings since October, 1986 and found an average annual generation loss of 4.23%; discounting one project which it claims to be "unrepresentative," the percentage drops to a 1.59% loss. Other studies have found an average generation loss of nearly 8%. I don't think we should be haggling over figures. The point is that in today's tight energy supply climate, *any* loss in electrical generation—especially from such a clean, cost-efficient source—is too much.

How did we get to this point? Why such a dysfunctional process? While there is no shortage of explanations, most of it can be boiled down to one unfortunate reality: the licensing process fails to properly balance the environmental impact of hydro projects with the crucial energy and non-energy values of the resource.

Since 1986, FERC has been required, under the Federal Power Act, to give "equal consideration" to a variety of factors when issuing hydro project licenses and relicenses. This balancing authority requires FERC not only to consider the power, economic, and development benefits of a particular hydro project, but also to consider energy conservation and the protection, mitigation of damage to, and enhancement of fish and wildlife. In other words, under Federal law, FERC has the responsibility and authority to strike a balance between power and environmental values.

The courts, however, have interpreted the Federal Power Act so as to prevent any balancing from taking place. The courts, in effect, have given Federal resource agencies the authority to set "mandatory" conditions on FERC relicenses—conditions that are automatically attached to a final license. This means that FERC has no opportunity to question the basis of mandatory conditions set by the agencies.

This would not be a problem if federal resource agencies, when imposing a mandatory condition, considered the various factors that FERC is required to examine pursuant to the Federal Power Act. However, this is simply not done. The net result is that *no one* is balancing. *No one* has the authority to look at the big picture of how hydro fits into our national energy policy. I go back to my earlier observation: in today's supply-thirsty climate, where every megawatt counts, this is a situation that must be remedied, and remedied soon.

As mentioned, in an average water year hydropower accounts for 60% of Idaho Power's generation, with the three-dam Hells Canyon Complex project accounting for 75% of our total hydropower generation. Within this complex, the nearly 1 million-acre feet Brownlee Reservoir and hydropower site is the primary facility we have to follow our daily and seasonal peak loads. If balancing is not achieved, we run the risk of not only losing valuable energy, but also crucial load-following benefits of the resource. Additionally, our customers may lose the project's economic value and reservoir users a highly popular fishery. While we have not yet seen the mandatory condition proposals from the federal resource agencies—we will see them over the coming year—recent history suggests that a final Hell's Canyon relicense will not reflect a balanced consideration of the public interest values of the project.

Attached to my written testimony is a compilation of relicensing anecdotes, reflecting the recent experiences of many of our hydropower colleagues who have witnessed first hand the problems associated with the current licensing process. For example, the National Marine Fisheries Service last year imposed a fish passage requirement on the Enloe Dam project license in Washington that was contrary to the wishes of a Congressionally authorized regional collaborative planning council. Look at PacifiCorp's North Umpqua project in Oregon where the relicensing process took over 10 years; even though a settlement—was recently reached in this proceeding, licensing process—improvements could have resulted in smoother settlement negotiations, at far less cost and resulted in investments being made in environmental improvements rather than in study upon study upon study.

Some have suggested that the problems with the FERC licensing process can be solved solely through administrative, rather than legislative means. I disagree. Properly developed and implemented administrative remedies can certainly help on a number of fronts and should be encouraged. But taken alone, administrative reforms can not fully address the fundamental and substantive problems with the process. Earlier this year, the six industry representatives to the Federal Advisory Committee (FACA) that worked with the Interagency Task Force towards administrative improvements to the hydro licensing process wrote members of this Subcommittee expressing the following assessment of the ITF's work product:

> "While the [ITF] reports themselves are helpful, they do not resolve the fundamental conflict inherent in the existing system of government oversight of hydropower projects, nor will they assure maintenance of this reliable and low-cost source of electricity . . . The reforms necessary to achieve substantive improvements in the licensing of hydroelectric facilities can best be obtained through legislation addressing the Federal Power Act."

I wholeheartedly concur with this assessment. Legislative fixes are necessary if we are to truly fix the hydroelectric licensing process in a manner satisfactory to most stakeholders.

As for specific suggestions on how legislation might best fix the licensing process, that will hopefully be a subject for legislative hearings before this Subcommittee in the near future. I want to note, however, that the issue of hydro licensing improvement transcends partisanship. In addition to H.R. 1832's—the Towns bill's—bipartisan roster of cosponsors, both Senate energy policy packages contain hydro licensing improvement language; the aforementioned FERC 603 report echoes the call for legislative reform of the hydro licensing process; and the Bush Administration's National Energy Policy Development Group Report adds its voice to those declaring hydro licensing improvement to be a top energy policy priority. We are encouraged

by the emerging consensus on this issue and look forward to continuing to work with Chairman Barton, Congressman Boucher, and the entire Subcommittee on enacting balanced, bipartisan licensing improvement measures this year.

Market Incentives for Hydropower Development

While we must act to reverse the lost hydro capacity and operational flexibility due to a flawed licensing process, we can also act to encourage the development of more, environmentally-responsible hydropower. The U.S. has an impressive amount of new hydropower potential, and it has been ignored for far too long. A Department of Energy (DOE) study shows there are approximately 21,000 MWs of potential capacity at existing dams. More importantly, much of this potential—over 10,000 MWs—is located in the capacity-hungry west.

This hydro capacity sits unused largely because of the complex regulatory scheme described above. But, it is also undeveloped because there are no incentives for producers to bring new generation on-line, a process that is more expensive and complicated than ever. Historically, most legislative proposals that addressed renewable energy ignored hydropower and its increasingly marginal economic state caused by escalating regulatory costs and capacity restrictions. While other renewable resources have received incentives for development and production—sparking growth in those industries—hydropower generation has been on a downward trend.

In the 107th Congress, however, there has been a new-found bipartisan interest in providing incentives for new hydropower development and efficiency upgrades at existing dams. While the costs clearly vary from project to project, new hydro capacity, depending on the type of upgrade, runs from $650 to $2,000 per kilowatt (Kw). On average, new hydro generation costs about 5 to 8 cents per kilowatt hour (KwH).

While not the same disadvantages as those encountered by other renewable industries, hydro's disadvantages hold equal merit and demand similar policies designed to encourage the development of renewable sources of power. Additionally, unlike many other generation sources currently getting rushed through the environmental permitting process, upgrades at existing hydropower sites can be accomplished with little, if any, new environmental impacts. In fact, incremental hydropower development will often result in the usage of new technology that significantly increases the efficiency of hydropower turbines while bringing improvements to aquatic habitat.

In conclusion, I would like to offer the following thoughts on the nexus between energy priorities and natural resources. Idaho Power, and the hydropower industry as a whole, take seriously its role as stewards of the rivers we are privileged to use. Licensees go to great lengths to involve stakeholders and members of the public in licensing and relicensing processes. These consultations take years and, without question, natural resource issues constitute the bulk of those discussions. Ultimately, the majority of direct and indirect expenditures are spent on environmental protection, mitigation and enhancement measures. Some rhetorically argue that the hydropower industry wants to "roll back" environmental regulations in this process. That is fundamentally absurd. With hydropower process improvements, resource enhancement and protection will continue. But it must continue in tandem with a process that also recognizes and protects the value of the product that is the subject of the licensing in the first place. We can and must achieve balance in this arena. We strongly believe that healthy rivers and hydropower can coexist and we continue to work toward that end.

Time is short. As we look to self-sustaining energy strategies, now is the time for policymakers to better incorporate hydropower into the nation's energy mix. We urge you to craft energy policies that embrace this extremely valuable resource, not further contribute to its decline. Reforming the licensing process and providing incentives for new hydropower development that deploys new, advanced technology can benefit hydro producers, the environment and consumers and is a goal that all Americans should support.

Thank you.

WHAT'S WRONG WITH THE HYDROPOWER LICENSING PROCESS?

REAL-LIFE EXAMPLES

Roughly half of all federally-regulated hydroelectric capacity—240 projects in 38 states, representing 28,784 megawatts of electricity generation—is due to be relicensed by FERC in the next fifteen years. An inefficient licensing process that is time-consuming, arbitrary, and costly places all of these projects, and the future of hydropower as a clean, renewable energy source, at risk. The following examples, taken from hydro projects around the nation, illustrate some of the many problems associated with the current hydropower licensing process.

ARBITRARY AND UNILATERAL EXERCISE OF MANDATORY CONDITIONING AUTHORITY

On February 23, 2000 FERC rescinded a license previously issued for the 4.1 MW Enloe Dam Project in Okanogan County, Washington. Although FERC was in the process of engaging all parties in addressing fish passage issues at the dam, the National Marine Fisheries Service (NMFS) challenged that process as encroaching its unilateral conditioning authority under Section 18 of the Federal Power Act. NMFS insisted on imposing a fish passage requirement in the project license despite i) opposition to such passage by the Washington Department of Fish and Wildlife, the Okanagan Indian Nation, and the Canadian government; and ii) the desire of the Congressionally authorized Northwest Power Planning Council to assign financial responsibility for fish passage at Enloe Dam to regional entities.

NMFS had stated that its preferred position in the proceeding was license denial and dam removal. By insisting on fish passage as a condition of the license and at the licensee's expense, NMFS not only acted, in the words of FERC Commissioner Massey, "out of sync with regional planning," but ultimately prevailed in gaining denial of the license application. As FERC Commissioner Hebert explained in his concurring opinion:

> "Unfortunately, the Commission's hope that this protracted dispute could result in a mutually-acceptable agreement has been undermined by the recalcitrance of a single agency...In today's order, the Commission states that it no longer has the discretion to continue to resist NMFS" overtures . . .
>
> One party, carrying mandatory conditioning authority, and focusing myopically on its own particular interest, can upset the collaborative process if so inclined. To a party opposing licensing, stalemate may mean victory for one party and defeat to the rest of America . . .
>
> I view this process, where some participants, bearing veto power, have more negotiating authority than others, if indeed inclined to negotiate at all, as absurd. As a result, I am encouraged by pending legislative efforts to rationalize this process, by requiring a greater level of cooperation among federal and state resource agencies. Such reform would benefit consumers by forcing all parties to the table in an effort to resolve such disputes in a fashion that is best suited for the benefit of all Americans."

EXCESSIVE LENGTH AND COST OF PROCESS/ARBITRARY NATURE OF PROCESS/ INAPPROPRIATE APPLICATION OF AGENCY AUTHORITIES

PacifiCorp is currently seeking a new FERC license for its eight-dam, 185 MW North Umpqua project in Douglas County, Oregon. The company recently reached a Settlement Agreement with state and federal agencies which will be submitted to the FERC as the basis for a new license. Even thought a settlement has been reached, the North Umpqua experience points to significant flaws in the current laws governing relicensing.

The licensing process to-date has taken over 10 years, been extremely arduous and cost over $42 million. The bulk of the funds spent on relicensing have gone to studies of environmental impacts and documented in a 43-volume license application and a 3-volume watershed analysis report. In fact, process and study costs at North Umpqua are more than double the cost of installing fish passage facilities at the project as agreed to in the settlement. Moreover, another three to four years of process remain before PacifiCorp can expect to receive a license as FERC conducts its NEPA review and the state Department of Environmental Quality pursues 401 certification for the project. Both processes will likely require the collection of yet more data and add to licensing costs.

If the Federal Power Act required conditioning agencies to take a balanced approach in setting their demands and included some accountability over them, the settlement negotiations might have been conducted more smoothly, at far less cost and resulted in investments being made in environmental improvements vs. studies. A brief history of the licensing process follows.

PacifiCorp initiated the process in 1992 and went far beyond the normal requirements for public involvement and science collection in the hope that the North Umpqua licensing process would become a model of how a utility could work collaboratively with all stakeholders. After submitting its relicense application in 1995, PacifiCorp initiated the North Umpqua cooperative Watershed Analysis with all interested parties to identify and address specific resource concerns that emerged during the relicensing process. This was a first-of-its-kind for a hydro project. PacifiCorp and the parties then entered detailed settlement discussions in 1997.

After two years of discussions, yielding little consensus, the U.S. Forest Service (USFS) insisted—without providing an adequate scientific explanation—that Soda Springs Dam (one of the eight dams on the project) be removed as a condition of

settlement to meet objectives contained in the President's Forest Plan. This, despite the fact that removal of Soda Springs Dam would put the viability of the entire project at serious risk, from both an operational and economic standpoint, and despite there being other mitigation alternatives available. This also represented the first time that the Forest Service had indicated its intent to use its 4 (e) conditioning authorities under the Federal Power Act to require a dam removal. This would have created a broad, adverse precedent for other hydroelectric projects in the West located wholly or in part on Forest Service lands.

Concerns over the precedential nature of the removal and lack of scientific justification caused Pacificorp to walk away from settlement negotiations in November, 1999. PacifiCorp re-initiated settlement talks in June 2000 and following a year of negotiations involving agency heads, an agreement was reached.

EXCESSIVE LENGTH OF PROCESS/JUDICIAL CALL FOR LEGISLATIVE IMPROVEMENTS

In March, 1997, the Eugene Water & Electric Board (EWEB) received a new FERC license for two projects (23.2 MW combined) on the McKenzie River in Oregon. In the license, FERC incorporated certain fishery conditions prescribed by federal resource agencies under Section 18 of the Federal Power Act (FPA)—at a cost to EWEB of $14,000,000—but rejected several conditions because they did not meet the requirements of the FPA for "fishway prescriptions."

Despite the $14,000,000 of project improvements, several interest groups and agencies requested an administrative rehearing of the license before FERC; upon denial of the requests, the parties challenged the license before the U.S. Court of Appeals for the Ninth Circuit. Among other claims, the parties contended the FPA does not authorize FERC to refuse to accept any condition prescribed under Section 18. In other words, the parties asked the court to rule that the resource agencies had absolute power to dictate license conditions under the FPA whether they met the intent of the FPA for a fishway prescription or not.

In its August, 1999 decision, the court did just that—concluding the FPA denied FERC the authority to modify, reject, or reclassify prescriptions submitted by resource agencies under Section 18, even while noting FERC's observation that the resource agencies "do not concern themselves with the delicate economic versus environmental balancing required in every license." The court went on to acknowledge Congressional "failure" to require agencies to develop improved "regulations, procedures or standards for implementing Section 18." The court noted that, absent Congressional action, the court was powerless to rewrite the statute. "Our task," the opinion stated, "is to apply the statute's text, not to improve upon it." The court's decision means that currently only a federal court of appeals has the authority to determine whether a fishery condition offered by a federal resource agency and required to be included in a license meets the requirements for a "fishway prescription" under the FPA.

With its hands thus tied, the court's decision will mean a remand of the license back to FERC to be re-written once the appeal is completed—8 years after EWEB first submitted its license application; with only the Ninth Circuit then having the authority to decide whether any condition prescribed by a resource agency meets the FPA requirements for "fishway prescriptions."

CONDITIONS MAKING PROJECT UNECONOMIC/ARBITRARY NATURE OF PROCESS/ INSUFFICIENT IMPACT ANALYSIS

In 1996, during the relicensing of the Edwards Dam near Augusta, Maine, the US Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) prescribed a fishway system on the dam to safeguard a few species of fish. The fishery agencies estimated this fishway system would cost approximately $9 million dollars while the licensee estimated the cost at $12 million—both of these estimates effectively rendered the project uneconomic. Lacking the authority to amend the prescription or otherwise balance it against the energy or other resource values of the project, FERC instead ordered the removal of the dam in November 1997.

During the relicensing process, the USFWS and NMFS also recommended that flows of 4,500 cubic feet per second be released annually in July into a deep hole below the dam they determined was a spawning and nursery habitat for the Atlantic sturgeon. This flow recommendation had severe economic implications on the project since it would force the project to forgo power generation completely in July most years. This deep hole was located just below the area where the dam was eventually breached and this once-important spawning and nursery habitat is now assumed to be filled with rubble.

The US Department of Interior and segments of the environmental community have hailed FERC's decision as a means of restoring a 17-mile stretch of the Kennebec River to its "natural condition". Moreover, certain environmental groups are now claiming that the simple act of removing the dam has successfully restored this section of the river yet no comprehensive studies are being planned to actually measure the success of this dam removal on the restoration of the river ecosystem.

ARBITRARY NATURE/EXCESSIVE LENGTH OF PROCESS

In an ongoing relicensing of a 35.5 MW facility in New York State, arbitrary fishway prescriptions have been proposed by the USFWS, at a cost of over $2 million. Why arbitrary?

- The blueback herring, the primary species on which the prescriptions were premised, is not native to the river where the project is situated.
- With an 80-foot waterfall blocking upstream fish passage, there would be no migration without the man-made lock system adjacent to the project.
- The project (and other hydro facilities on the river) have operated without fishways for several decades—and during that time the fish population has grown to over 100 million annually.

Pre-filing consultation started on this project in 1986, and a final license order still has not been issued. If the fishway prescription is included in the license along with other resource protection measures, the project would become economically unviable.

ARBITRARY NATURE OF PROCESS/FERC APPROVAL OF INAPPROPRIATE CONDITIONS

In a recent relicensing of a Western project, the U.S. Forest Service imposed numerous conditions, including one that required the project owner to annually send the Forest Service a set payment, expected to cover all operation and maintenance costs associated with existing campgrounds in the project vicinity. The owner pursued an administrative appeal of this condition at the Forest Service, arguing that the Forest Service failed to demonstrate that most of the campgrounds' use was related to the project. Furthermore, the Forest Service did not attempt to justify the amount of the annual payment for the operation and maintenance costs it sought from the licensee.

Nonetheless, FERC included the condition in the project license, concluding that it lacked the authority to even consider if a relationship between the condition and the project justified the Forest Service condition. Similarly, FERC was unable to reject an instream flow release imposed upon the project by the Bureau of Land Management, even though FERC summarily dismissed as inappropriate and unsupported the same exact amount of instream flow release recommended by the California Department of Fish and Game.

After FERC issued the new license for the project, containing the contested condition, the owner challenged the condition at FERC and took the case before the U.S. Court of Appeals. Just prior to the case being heard and five years after the first of the two administrative appeals were filed with the Forest Service, the Forest Service decided that the operation and maintenance costs were indeed inappropriate and accepted an owner-proposed method for reimbursement of only those campground operation and maintenance costs related to the project—approximately 1.25% of the amount originally demanded by the Forest Service.

FERC APPROVAL OF CONDITIONS THAT RESULT IN "NO QUANTIFIABLE BENEFIT"/ EXCESSIVE LENGTH OF PROCESS

After FERC asserted jurisdiction over a 70 year old, 1.2 MW project in New England, the project owner reached agreement with one state agency on the level of minimum flows to be released from the project. However, a resource agency from an adjacent state and the USFWS prescribed a minimum flow that was nearly twice the agreed upon level. In its final environmental assessment for the project, FERC concluded that the owner's minimum flow could be provided with existing project equipment and that there was no "quantifiable benefit" from requiring the USFWS flow level rather than the level proposed by the owner.

However, because the recommendation was made under section 10(j) of the FPA, and because the recommendation appeared "consistent with the FPA," FERC incorporated the higher minimum flow requirement in the license. FERC's rubber stamp approval of the USFWS 10(j) recommendation, along with other conditions imposed on the project, had the effect of reducing net revenue from the project by 60%, making the project economically marginal at best. (Note: Issuance of the license for this small project took more than 8 years.)

DUPLICATIVE NATURE OF PROCESS

The Energy Policy Act of 1992 specifically prohibits federal land managing agencies from requiring an existing hydropower project to obtain a Special Use Permit. However, in a number of licenses, the Forest Service has taken the standard Special Use Permit terms and included them in the conditions submitted to FERC under section 4(e) of the Federal Power Act. In turn, FERC has had no choice but to impose these conditions on the project license. These Special Use Permit conditions are designed to allow the Forest Service to regulate the project in the same manner that FERC administers the licensed project. Thus, despite the Energy Policy Act prohibition, the Forest Service is duplicating FERC's legislative mandate to administer federally licensed hydropower projects.

CONDITIONS MAKING PROJECT UNECONOMIC

In 1997, six years after the licensee filed its initial plan, FERC issued an order approving a mitigation and management plan for the 170 MW Kerr Project in Montana. The FERC plan incorporated conditions submitted by the Department of the Interior requiring a variety of non-operational measures, including: a fish and wildlife implementation strategy to be funded through a one-time payment of $12.5 million and annual payments of $1.27 million, a fish stocking plan, the acquisition of 6,800 acres to serve as replacement wildlife habitat, the construction of five islands to serve as waterfowl habitat and construction of erosion control structures.

The FERC environmental impact statement (EIS) on the mitigation and management plan concluded that the conditions imposed by Interior would "eliminate the project's positive economic benefits." The EIS found that the project's current annual net benefits were approximately $9 million, but that with Interior's conditions, the annual net benefits would be a negative $2.7 million. Not even Interior disputed that the conditions would reduce the project's net annual benefits by many millions of dollars. However, the Commission noted that "any economic analysis of the impact of Interior's conditions is of at best tangential relevance to our decision," since FERC was obligated to impose the Interior conditions.

CONDITIONS MAKING PROJECT UNECONOMIC/INSUFFICIENT IMPACT ANALYSIS/ARBITRARY NATURE OF PROCESS/LITIGATION AS ONLY RECOURSE

The 700kw Yaleville project in upstate New York is one of the smallest hydro facilities operated by Niagara Mohawk Power Corporation. In pre-filing consultation in connection with the 1988 licensing of the project, the USFWS raised the issue of fish passage. The agency recommendation was to provide for downstream passage of freshwater non-migratory resident species, namely bass and walleye. This, despite:

- spillage over the dam provided natural passage of fish at least 85% of the time;
- despite decades of hydro project operation,—an abundance of bass and walleye was evident on the river both above and below the project; and
- the $400,000 price tag for the agency-recommended fishway was prohibitive for such a small project.

Niagara Mohawk disputed the agency recommendation in its license application and FERC, in its 1991 draft Environmental Assessment (EA) for the project, agreed with the owner and recommended a lower cost fish protection alternative. USFWS, after failing to sway FERC away from its position in dispute resolution proceedings, responded by prescribing the downstream passage fishway under its Section 18 mandatory conditioning authority.

FERC denied the fishway prescription in its 1992 license order because it did not meet the day's definition of "fishway" [at the time, a fishway had to serve the purpose of passing fish whose life cycle depended entirely on migration past the hydro facility—which was not the case with the Yaleville bass and walleye.] A broader "fishway" definition was established with the passage of the Energy Policy Act of 1992; accordingly, FERC had to rescind its prior denial and require Niagara Mohawk to install the fishway—despite the lack of biological basis and the fact that its cost would negate the economic operation of the project.

Niagara Mohawk promptly appealed the FERC order. Negotiations with USFWS ultimately led to an agreement to install a less expensive fishway design (at a cost one-tenth of that originally prescribed.) If the owner had not pursued an aggressive litigation action, USFWS would likely never had agreed to negotiate. Litigation, in this case, spawned reason; but only after more than 8 years of licensing process and a cost to the owner of nearly $300,000.

CONDITIONS MAKING PROJECT UNECONOMIC

In 1997, FERC issued a license for a 70 MW project in Washington state. In the text of the license itself, FERC noted that the prescribed resource agency conditions would result in a yearly operating loss of over $6.5 million for the project owner. Indicating that the project as licensed would not be "economically beneficial", FERC issued the license with the conditions, leaving it to the owner to "make the business decision whether [to operate the facility] in view of what appear to be the net economic costs."

Mr. WALDEN. Thank you, Mr. Prescott.

We now turn to Ms. Birnbaum, the director of Government Affairs for American Rivers. Welcome. We look forward to your testimony.

STATEMENT OF S. ELIZABETH BIRNBAUM

Ms. BIRNBAUM. Thank you. Good afternoon, Mr. Chairman and Congressman Boucher, members of the subcommittee. My name is Liz Birnbaum. I am the director of Government Affairs at American Rivers, the national river conservation organization with more than 30,000 members nationwide. We also Chair the Hydropower Reform Coalition, a consortium of more than 70 conservation and recreation organizations from around the country, with a combined membership of more than 800,000.

Our organizations strongly oppose any efforts to diminish environmental protections in hydropower relicensing, either directly or through misguided process reforms. While we have participated in and encouraged administrative efforts to make the licensing process more efficient, we strongly disagree with the proposition that the faults in the process lie with State and Federal natural resource agencies. It is clear to us that the vast majority of the remaining inefficiencies in licensing lie elsewhere.

The two major problems are FERC's unwillingness to develop a single, cooperative environmental review process involving all State and Federal agencies, and the licensees incentive, as discussed by Congressman Dingell earlier, to delay relicensing and withhold necessary information regarding environmental impacts of their projects.

I would like to talk about four basic themes today: First, protecting the public trust resources; second, opposing rollback of environmental protections; third, taking a close look at FERC's analysis; and fourth, ways to improve the process without causing harm.

First, I think that all participants in the process will acknowledge that hydropower relicensing is a natural resource issue, a rivers issue, not just an energy issue. In fact, President Bush's energy plan acknowledges and catalogs the impacts of hydropower dams on natural resources. The improvements and changes made through relicensing will have huge implications for hundreds of species, thousands of river miles and millions of dollars in recreational opportunities for decades to come. In contrast, these decisions have relatively small impacts on energy generation, electric rates or industry viability.

By requiring dam owners to build passage for fish, protect critical riparian habitat, adjust river flows, and provide recreational access and opportunity, we can protect and restore valuable fisheries, native species diversity, recreational amenities and natural

ecosystem functions. At the same time, we can enhance economic opportunities such as recreation, tourism and ecological services. Because original licenses were issued before the enactment of modern environmental statutes and prior to our understanding of the impacts of dams on river ecosystems, virtually none of these dams meets modern environmental standards before relicensing.

If awarded a license, utilities can monopolize a river for a half a century with little oversight and no motivation to make environmental improvements. We must take this once-in-a-lifetime chance to set conditions that require hydro operators to modernize the way they operate their dams on our rivers.

In developing the balance of authority in the Federal Power Act, Congress determined that some basic environmental protections must be afforded at every dam. Expert Federal and State resource managers established conditions based on substantial evidence. Just as there is a ceiling on coal plant emissions under the Clean Air Act, there is a floor above which FERC can balance license conditions in the public interest.

Both fish passage and Federal lands protections have been part of the licensing process since the enactment of the Federal Power Act in 1920. Water quality is a responsibility delegated to the States. Section 401 of the act ensures that private hydro projects will not interfere with State standards. The Supreme Court has confirmed that these standards may be numeric or narrative and include chemical, physical and biological parameters.

State and Federal agencies have significant expertise in the relicensing area. They work in the field on a specific river as opposed to FERC staff who spend most of their time in Washington. There is little reason to believe that consolidation with FERC would either make the process faster or improve the outcomes.

I will make just a couple of observations on the 603 report. First, we agree with GAO's conclusion that until FERC does a better job collecting data on the cost and timing of its process, FERC will not be able to reach informed decisions on the need for further administrative reforms or legislative changes. This conclusion makes it difficult to rely on any of the statistical information in the 603 report.

Second, it seems clear that FERC saw this report to eliminate shared jurisdiction with other agencies. The suggestion on page 6 of the report that Congress should, quote, "restore" the Commission's position as the sole Federal decisional authority ignores the history and structure of the Federal Power Act since 1920. The Commission has never been the sole Federal authority on hydro licenses. And, again, the entire report must be viewed in light of this agenda.

We do believe that further administrative reforms can improve the way we license hydropower dams without upsetting the existing balance of agency decisionmaking. First, to ensure the relicensing process is efficiently implemented, State and Federal agencies must have sufficient staff resources and training. For example, in the State of Alabama, licenses for 12 dams on 3 major rivers will expire by 2007. Currently, the Fish and Wildlife Service has only one staff person to cover this entire area. This situation is not unique.

Second, collaborative processes should be encouraged. Elements of FERC's alternative licensing process should be incorporated into FERC's traditional licensing process wherever possible. Third, cooperation among FERC and State and Federal resource agencies will greatly improve the efficiency of the relicensing process. Unfortunately, FERC has been reluctant to implement a cooperative environmental analysis structure with the other agencies.

The good news is that relicensing provides significant protection to rivers at a low cost to power production. According to FERC's own report, relicensing has resulted in average per project reduction in generation of only 1.6 percent. Such few losses in relicensing over the next 10 years would result in a 0.04 percent reduction in the Nation's overall annual generation. The losses in generation are comparable with those caused by installing a scrubber on the smokestack of core 5 plant, in fact.

Being a good environmental steward is a legitimate cost of doing business. Unlike other industries, such as offshore oil development, mining or timber, hydropower licensees pay nothing for the use of public resources—our rivers. They are not required to post a bond. After 30 to 50 years, the initial capital investment in these projects is fully amortized. The only costs left are basic operation and maintenance, the lowest of any electricity source, and environmental protection measures. Asking that these dams make some small investment in environmental quality after decades of profitable operation is a reasonable and minor request. Paying for these changes continues to leave hydropower as the cheapest source of electricity nationwide.

[The prepared statement of S. Elizabeth Birnbaum follows:]

PREPARED STATEMENT OF S. ELIZABETH BIRNBAUM, DIRECTOR OF GOVERNMENT AFFAIRS, AMERICAN RIVERS

INTRODUCTION

American Rivers, a national river conservation organization with more than 30,000 members nationwide, strongly opposes any efforts to diminish environmental protections in hydropower licensing either directly or through misguided process reforms. These comments are also joined by the Hydropower Reform Coalition. The Hydropower Reform Coalition is a consortium of more than 70 conservation and recreation organizations from around the country (see attachment). The Coalition was formed in 1992 with the purpose of improving river health and recreational opportunities through the licensing, relicensing, and regulatory enforcement of hydropower dams under the jurisdiction of the Federal Energy Regulatory Commission (FERC). Coalition members are national, regional and local conservation organizations, and together have a combined membership totaling more than 800,000.

I would like to talk about four basic themes today, geared primarily toward industry-supported legislative proposals, FERC's recently released report to Congress pursuant to Section 603 of the Energy Act of 2000, and the Administration's energy plan released in May:

1. *Protect our public trust resources*—Hydropower harms rivers, but a strong process for relicensing can result in significant improvements to environmental quality;
2. *Oppose environmental roll-backs*—The current balance of authorities in hydropower relicensing is appropriate and effective and proposed changes to that balance threaten environmental quality;
3. *FERC's analysis must be closely scrutinized*—The Commission's recent 603 Report to Congress is flawed, reaches poor conclusions, and illustrates FERC's quest for jurisdictional expansion; and
4. *Improve the process without causing harm*—The Commission should improve licensing through administrative changes that take a holistic approach that acknowledges multiple authorities and improve environmental quality. Otherwise, Congress should require FERC to do so.

This testimony does not directly address the specifics of legislation before the Committee such as H.R. 1832, "The Hydroelectric Licensing and Incentives Act of 2001," because of the rapidly changing nature of the debate. Instead I will focus on basic themes and overriding elements of the debate regarding regulation of hydroelectric power.

HYDROPOWER IMPACTS PUBLIC RIVERS

Hydropower relicensing is a natural resource issue—a rivers issue—not simply an energy issue. The improvements and changes made through relicensing at hydropower dams will have huge implications for hundreds of species, thousands of river miles, and millions of dollars in recreational opportunities for decades to come. In contrast, these decisions have a relatively small impact on energy generation, electric rates, or industry viability.

American Rivers and members of the Hydropower Reform Coalition are not anti-hydropower. We simply wish to ensure that these dams are operated to protect and restore river resources using best available technologies and best management practices. While decommissioning is a popular topic these days, we believe that dam removal will be the exception and not the rule.

As early as 1908, President Teddy Roosevelt understood the need to safeguard our nation's rivers and helped to devise a system of periodic review to protect these national treasures.

> "The public must retain control of the great waterways. It is essential that any permit to obstruct them for reasons and on conditions that seem good at the moment should be subject to revision when changed conditions demand."

More than 75 years later, the 9th Circuit Court of Appeals in *Yakima Indian Nation v. FERC* found that:

> "Relicensing is more akin to an irreversible and irretrievable commitment of a public resource than a mere continuation of the status quo. Simply because the same resource had been committed in the past does not make relicensing a phase in a continuous activity. Relicensing involves a new commitment of the resource . . ."

The impacts of hydropower dams on public trust resources are well known and well documented. The President's own plan acknowledges and catalogues the impacts of hydropower dams on natural resources.

> "Hydropower, although a clean energy source, does present environmental challenges. Unless properly designed and operated, hydropower dams can injure or kill fish, such as salmon, by blocking their passage to upstream spawning pools. Innovations in fish ladders, screens, and hatcheries are helping to mitigate these adverse impacts. Ongoing dam relicensing efforts are resulting in community involvement and the industry's application of the latest technologies to ensure the maintenance of downstream flows and the upstream passage of fish. These efforts also have been successful in identifying and removing older, nonfunctioning dams and other impediments to fish movements." (President's Plan, 3-8)

By requiring dam owners to build passage for fish, protect critical riparian habitat, adjust river flows to conform to a more natural pattern, and provide recreational access and opportunity, we can protect and restore valuable fisheries, native species diversity, recreational amenities, and natural ecosystem functions. At the same time we can enhance economic opportunities such as recreation, tourism, and ecological services. Because original licenses were issued before the enactment of modern environmental statutes and prior to our understanding of the impacts of dams on river ecosystems, virtually none of these dams meets modern environmental standards before relicensing.

The widespread recognition of these environmental impacts demonstrates a need for a careful review process that addresses some of the sins of the past. If awarded a license, utilities can monopolize a river for a half a century with little oversight and no motivation to make environmental improvements. It's perfectly reasonable that we take this once-in-a-lifetime chance to set conditions that require hydro operators to modernize the way they operate their dams on our rivers.

RELICENSING—AN IMPORTANT BALANCING ACT

Because rivers are *public* resources with many competing interests and significant environmental issues, the licensing process for hydropower dams involves multiple stakeholders. Unlike most electricity generating technologies, hydropower does not have "end of pipe" standards to ensure that the dam's operations do not unduly damage the environment. This is because every dam and every river is different, and generic standards cannot be applied to each project. The Federal Power Act

(FPA), although commonly considered an energy statute, also occupies an important role in environmental protection. The statute was amended in 1986 to require FERC to give "equal consideration" to power (electricity generation) and non-power (fish and wildlife protection, recreation, etc.) benefits of the river. The economics of the hydropower facility should be taken into account by FERC in this balancing process.

In developing this balance, Congress determined—and rightly so—that some basic environmental protections must be afforded at every dam, and should not be balanced away to promote cheap hydropower. Under these statutory requirements, expert federal and state resource managers establish conditions based on substantial evidence to protect public trust resources. These basic protections form a floor above which FERC can balance license conditions in the public interest.

Sometimes referred to as mandatory conditions, these requirements assure that:

(1) Fish can be passed upstream and downstream of a dam (FPA Section 18);
(2) If the private dam is located on federally owned land, the multiple purposes of the federal land are protected (FPA Section 4(e)); and
(3) The dam complies with state-developed water quality standards (CWA Section 401).

Both fish passage and federal lands protection have been part of the relicensing process since enactment of the Federal Power Act in 1920.

The current structure of the Act, which sets fishways apart as a special consideration, is in keeping with the law and practice that came to us from Europe at the time of settlement. Requiring millers—dam owners—to provide fishways at their own expense dates back many hundreds of years, based on the recognition that fish are equally important to commerce.

The provision under Section 4(e) of the Federal Power Act that grants authority to land management agencies to ensure that projects on their lands meet current management goals and objectives is simple and is based on common sense. Projects that are located on federal or tribal lands are already getting the benefit of cheap rent. In order to adequately manage the lands entrusted to them, federal land management agencies must have a say over how these projects are operated.

The protection of water quality is a responsibility that has been delegated to the states under the Clean Water Act (CWA). Section 401 of the act ensures that private hydro projects will not interfere with state standards, by requiring that each federally licensed project receive a certification from the state where it is located, demonstrating that the project is consistent with the standards, including the designated uses for each water body. The Supreme Court has confirmed that standards may be numeric or narrative and include chemical, physical, and biological parameters.

Any effort to shift these responsibilities to FERC would be inefficient and would fundamentally change the standards upon which we base these decisions. State and federal agencies have already developed significant expertise in the relicensing arena and work in the field on a specific river as opposed to FERC staff who spend most of their time in Washington. Because FERC's mandate is "equal consideration," these basic environmental protections would be assured only if they did not affect a utility's bottom line. There is little reason to believe that consolidation with FERC would improve the process in any event.

FACTS DON'T SUPPORT THE CLAIMS OF A CRISIS

If we are worried about hydropower's impact on the environment, then where do we turn for energy? The good news is that the benefits derived from relicensing provide significant protection to rivers with a low cost to power production. According to FERC's own report, relicensing has resulted in an average per project reduction in generation of only 1.6%. Based on this track record, we can reasonably expect a similar loss from projects due to be relicensed over the next ten years (these represent 2.5% of the annual generation of the US). Such losses in relicensing would result in a 0.04% reduction in the nation's overall annual generation. In any case, the amount of "lost" generation is significantly less than the 5% average fluctuation of energy demand caused by factors such as weather, fuel prices, and advances in technology.[1] These losses in generation are derived from comparing a baseline of operation that had NO environmental conditions to one with modern environmental standards—the losses in generation are comparable with those caused by installing

[1] The mean net generation of electric utilities and non-utility power producers for 1990 to 1996 is 3,203,998 million kilowatt-hours, with a standard deviation of +/-159084.6 million kwh or +/-4.96%.

a scrubber on the smokestack of a coal-fired plant. We need not trade healthy rivers for power production. We can have both.

Being a good environmental steward is a legitimate cost of doing business. Should the federal government guarantee profitability for hydropower utilities? If a project is already unprofitable because of market forces or because it is run poorly, should it be exempted from any environmental conditions? The answer to these questions is clearly no. According to the courts, "There can be no guarantee of profitability of water power projects under the Federal Power Act; profitability is at risk from a number of variable factors, and values other than profitability require appropriate consideration."[2]

Unlike other industries such as offshore oil development, mining, or timber, hydropower licensees pay nothing for the use of public resources—our rivers—and are not required to post any kind of bond to ensure that at the end of the projects useful life there is money to properly dispose of it. After 30 to 50 years, the initial capital investments in these projects are fully amortized. The only costs left to the licensee are basic operations and maintenance (the lowest of any electricity source) and environmental protection measures. Asking that these dams make some small investment in environmental quality after decades of profitable operation is a reasonable and minor request. Paying for these changes continues to leave hydropower as the cheapest source of electricity nationwide.

It is simply a false threat to suggest that dams are being surrendered or abandoned due to the cost of environmental regulation. Since 1996, only three operating licenses have been surrendered—each because the facilities fell into disrepair or were damaged by flooding. According to FERC, since1993 "no licensee has refused to accept or surrender their license citing project economics."[3]

The Administration's own energy plan confirms that the principal factors limiting hydropower development have nothing to do with environmental regulation. The President's report explains that, "Hydropower generation has remained relatively flat for years. The most significant constraint on expansion of U.S. hydropower generation is physical; most of the best locations for hydropower generation have already been developed. Also, the amount of hydropower generation depends upon the quantity of available water. A drought can have a devastating effect on a region that depends on hydropower. In fact, this year's water availability has been a contributing factor in California's electricity supply shortages." (President's Plan, 5-18)

In the scramble to find a magic bullet for the energy crisis, we should be careful not to over-rely on our nation's already troubled rivers. Through careful and deliberate evaluation involving expertise of a range of agencies, we can bring hydropower dams up to modern environmental standards without compromising power generation.

SOLUTIONS IN SEARCH OF PROBLEMS

Over the past several years, a number of legislative proposals have been put forward by members of the electric utility industry and most recently by FERC. We have consistently opposed those efforts. The common element of those reform bills has been to blame the resource agencies for costs and delays and to consolidate greater authority with FERC. We believe that these reforms address the wrong problem and therefore offer a poor solution to inefficiencies with hydropower regulation. Until recently, these proposals have been based on little more than anecdotal evidence and industry assertion. However, the publication of FERC's 603 Report offers new data and presents the first comprehensive look at the relicensing process in several years, offering little rigorous evidence or statistical verification for the claim that resource agency participation in the process creates major costs and delays.

Without going into great detail, let me offer a brief critique of the Commission's report—both its analysis and its recommendations. I will refrain from addressing specifics of the legislative proposals in this testimony but instead focus on basic themes and conclude with several recommendations that could require Congressional action.

CRITIQUE OF FERC'S 603 REPORT

In November 2000, Congress required FERC within six months "to undertake a comprehensive review of policies, procedures, and regulations for the licensing of hydroelectric projects to determine how to reduce the cost and time of obtaining a li-

[2] *Wisconsin Public Service Corp. v. FERC,* 32 F.3d 1165, 1168 (7th Cir. 1994)

[3] Written supplemental testimony of Doug Smith, FERC General Counsel, before the Senate Energy and Natural Resources Committee, 10/27/99

cense." Congress specified action by the Commission, but the report filed in May 2001 was explicitly a product of Commission staff (Report pg. 5). While it is entirely appropriate for staff to assist the Commission in the development of this report, we are troubled by the fact that the persons with decision-making authority—the Commissioners—have no ownership of this document.

Congress also required the Commission to consult with other appropriate agencies, yet no draft was provided to those agencies despite repeated pleas for cooperation. Although FERC includes agency comments in its appendix (as well as those from members of the public), it does not address these recommendations individually or provide any explanation of the consultation process.

We are also troubled by an April report by the Government Accounting Office (GAO) which strongly criticized the Commission for failing to keep adequate records of its regulatory activities.[4] According to GAO's report, until FERC does a better job collecting data on the cost and timing of its process, "FERC will not be able to reach informed decisions on the need for further administrative reforms or legislative changes to the licensing process." (pg. 17) In response to criticisms about not having adequate information to make decisions about policy, FERC responded "The primary mission of the Commission with respect to license applications is the processing of applications for the purpose of determining what outcomes best serve the public interest, not the gathering and processing of data documenting the process." (pg. 24) It is hard for us to understand how FERC is able to draw reasoned conclusions about whether it is fulfilling its mandate or respond to the Congressional report requirement without sound data.

In light of the GAO's indictment of FERC's data and record keeping, let me highlight several conclusions in FERC's report about timing and cost, some of which appear reasonable, others suspect.

Time data

FERC's data on timing of the relicensing process appear more reliable than its information on costs—although as GAO pointed out, none of FERC's information can be relied upon to draw conclusions about the causes for delays or costs. It is clear from the report that there are delays in the relicensing process. However, the report suggests that Section 4(e) and 18 requirements by the federal resource agencies are not a major cause for relicensing delays (Report pg. 38). This is supported by an independent analysis by the Department of the Interior, which draws the same conclusion. The report does identify state agencies as being associated with significant delays, but it fails to show whether these delays are within the sphere of influence of those agencies or whether they are a victim of industry procrastination and delay. Other evidence would suggest the latter.

We do know that license applicants have caused significant delay of the relicensing process by failing to provide complete license applications. Of the 157 relicensing applications filed by industry in 1993, only nine provided sufficient scientific information about project impacts, forcing FERC to issue hundreds of additional information requests in the other 148 cases.[5] The need to conduct further studies to complete their applications was a significant reason that there were major delays in these relicensings.

FERC's own timeframes appear to be lengthy and contribute to delay, although the 603 Report is silent on FERC's own responsibility. For instance, the median time for processing an application until it is "ready for environmental analysis" is 18 months. This leaves only 6 months to issue a draft and final NEPA document before the project license expires.

FERC's median time to respond to requests for administrative appeal or rehearing is 13.6 months, with a minimum of 6 months and a maximum of 62 months—more than 5 years. Other types of petitions also go unaddressed by the Commission for months or years. For instance, in one case environmental groups filed a petition to the Commission to initiate consultation under Section 7 of the Endangered Species Act four years ago and have yet to receive any response. In these situations, parties are prohibited from seeking judicial review until FERC acts, but cannot force FERC to act. In the meantime the environment continues to be harmed and legislative interpretations go unanswered.

Cost data

FERC's section on costs is even more problematic. The report considers costs of the relicensing process to be limited to only those of the licensee and the agencies.

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[4] Licensing Hydropower Projects: Better Time and Cost Data Needed to Reach Informed Decisions About Process Reforms, U.S. General Accounting Office GAO-01-499, May 2001.

[5] Barnes, *FERC's "Class of '93": A Status Report,* Hydro Review (Oct., 1995).

They do not consider the cost to the public whether due to direct participation, or through the attendant impacts to the environment. They also offer no measure of what costs should be measured—no standard of analysis.

The 603 legislative language does say that the report should address "... how to reduce the cost and time of obtaining a license." However, the statute does not define cost, and although one could contend that the term "obtaining a license" justifies limiting the report to the private costs incurred by the applicant, it hardly seems in the public interest or in the interests of good government to ignore the costs to the American public. Further, and perhaps more troublesome, the staff did not confine its analysis to the costs incurred by the license applicant alone; the staff addressed costs incurred by the Federal agencies. Since these non-licensee costs are evaluated, the report should also have considered costs to other non-licensees and to the environment.

Cost is closely linked to time. Due to the lengthy term of original hydropower licenses those issued before the environmental reform era have been largely insulated from the responsibility of paying for the environmental cost that it imposes on society. No other major source of power—coal, nuclear, gas, or oil—has been so privileged. All these others have confronted their environmental obligations, and begun to internalize such costs. Congress has designated the issuance of a new hydropower license as the time when this maldistribution of costs and responsibilities is to be corrected.

Delays in the process often save the project owners money in the short-run by maintaining status quo terms and conditions that allow the postponement of expenditures for mitigation. These savings come at an enormous expense to the environment, the public, and the tribes because of delayed mitigation, and provide a perverse incentive on the part of licensees to drag their feet and stonewall. Thus, it is often in the interest of the public and the environment to minimize licensing time—but finding ways to make the process more efficient should not override the need to protect other public interests in public resources.

FERC's main evidence in support of its recommendation for "one-stop shopping"—eliminating mandatory conditioning by other federal agencies—is the fact that projects with mandatory conditions incur higher mitigation costs per kilowatt of capacity. However, consistent with the criticisms outlined in the GAO report, this turns out to be a very superficial analysis. Do the two groups of projects analyzed (those with mandatories and those without) display any other differences? Are projects without mandatories smaller? Less controversial? Have they done less damage to the environment? In order to make any sense out of these numbers, one would have to organize the projects so that the only significant difference between the two groups is that one group had mandatory conditions and one did not. In any case, one must question whether FERC is suggesting that it would dramatically reduce those costs if it were the agency in charge? How would such efficiencies be found? Would that mean a reduction in environmental protection? FERC offers no specifics as to how the Commission would reduce costs to licensees but still maintain the same level of environmental protection.

Clean Water Act

In its 603 report recommendation on Clean Water Act Section 401, FERC demonstrates a complete misunderstanding of the Clean Water Act and a total disregard for state delegated authority. Water quality is inextricably linked to water quantity. The Clean Water Act requires the protection of physical, chemical and biological components of a water body. Protection of "designated uses" is a fundamental component of the Clean Water Act. Designated uses ensure that waters will be "fishable, swimmable, and boatable." Yet the Commission advocates limiting the definition of "clean water" to apply to only a few, simple parameters, excluding water quantity and designated uses.

FERC's proposal to weaken the State's authorities under the CWA is an attempt to take away state's rights, in direct conflict with Congress's intent and the US Supreme Court's rulings. (This was mentioned above but is worth repeating.) The 603 Report goes so far as to suggest that, "Staff has no reason to think (state conditions) costs are balanced by measurable additional protection of the environment or other public benefits." This is a fairly sweeping indictment of state delegated authority and shows little respect for the values embodied in state water quality goals and standards.

CWA delays are not always the fault of state agencies. As with licensing delays generally, responsibility often lies with the applicants who file for certification at the wrong time, or without proper information to allow full review of the project and its effects on water quality and quantity. Applications are often withdrawn due to the applicant's poor preparation, causing unnecessary delays. Applicants should be

allowed to file for certification only if all necessary information is provided at the time of filing.

One stop shopping—A common theme but a bad idea.

At no time in its history has the Commission had sole decision-making authority in hydropower licensing. The Federal Power Act has always been clear. The courts have consistently confirmed this plurality of decision-making over the past 10 years. The problem is not the multiple actors but FERC's unwillingness to cooperate and cede authority.

FERC has not demonstrated itself to be a great environmental steward. This was a primary reason for the amendments to the Federal Power Act in 1986. They don't have expertise equal to the agencies, they lack intimate local knowledge, their mandate is different, and their track record is poor. Contrary to FERC's 603 Report assertion that they accept 95% of fish and wildlife recommendations, a 1997 University of Michigan study showed that FERC rejected or modified 35% of agency fish and wildlife recommendations.

In relying on FERC to do the final balancing analysis on license issuance, Congress did not intend the Federal Power Act Section 10(a) to be a trump card over other applicable sections of the FPA or other laws, and it should remain subject to other legal standards. FERC over-relies on what it characterizes as "the public interest," but is little more than best professional judgment clouded by institutional bias. The Commission's decisions are often made in a black box and are arbitrary and capricious.

No regulatory process is perfect and this one is no exception. Many in the environmental community believe that there should be stronger environmental conditions at hydropower projects. Many in the industry believe that they should be weaker. Whichever position one believes, the past few years of legislative proposals and most of the recommendations in FERC's 603 report will only make matters worse.

ONGOING IMPROVEMENTS TO RELICENSING

Numerous administrative reforms can make incremental improvements to the way that we license hydropower dams that do not place blame on one sector, and that meet at least some of the interests of all stakeholders.

Provide Adequate Resources for Agency Participation—To ensure that the relicensing process is efficiently implemented, state and federal natural resource agencies must have sufficient staff, resources and training to enable productive involvement in individual relicensings. At present, many of the relevant state and federal agencies do not have sufficient staff dedicated to relicensing. As a result, a range of individuals (few of whom are trained in the relicensing process) may participate in different parts of a relicensing proceeding as time allows, or the appropriate staff is overburdened and cannot spend the time to conduct an adequate review of the environmental needs at the site or participate constructively in the relicensing. Because of the complex nature of the proceedings, and because of the new, more productive trend toward collaborative relicensing efforts, a consistent presence of qualified staff with an appropriate workload would make agency efforts more efficient and productive.

In the state of Alabama, licenses for 12 dams on three major rivers will expire by 2007. Relicensing these projects will involve regular meetings, extensive studies, and detailed negotiation. Currently, the US Fish and Wildlife Service, which has significant statutory responsibilities for participating in this process, has only one staff person to cover this area. His situation is not unique. Without additional resources, there is a risk of inefficient or incomplete participation on the part of USFWS and potential disruption or delay in the process. This can be avoided with additional resources.

One potential solution is Section 1701(a) of the Energy Policy Act of 1992, which provides authority for FERC to reimburse resource agencies for their costs associated with licensing FERC projects. The provision calls for FERC to pass these costs on to licensees through annual fees. Since 1992, FERC has been collecting fees from licensees for some of the federal resource agency relicensing expenses but this money has not found its way back to these agencies. Instead, it has gone to the Treasury where these reimbursements to federal and state resource agencies have not been made available through annual appropriations from Congress. This system is not working. To provide adequate resources to these agencies that can facilitate more efficient relicensings, this provision of law should be implemented so that monies collected on behalf of state and federal natural resource agencies are reimbursed directly to those agencies.

Collaboration Not Confrontation—Since the codification of FERC's rules on the alternative relicensing or collaborative process, an increasing number of projects have

reached successful settlement leading to positive project economics and greater environmental protection. Throughout FERC's 603 Report, Commission staff touts their Alternative Licensing Process (ALP) as a model for effective relicensing. In an independent evaluation of the costs of hydropower relicensing, the Electric Power Research Institute (EPRI) found that on average, savings of 20 to 50 percent can be realized by using a collaborative approach. EPRI also found that the settlement process, on average, leads to reduced mitigation costs of 5 to 20 percent.[6] Elements of the alternative process should be incorporated into FERC's traditional licensing process wherever possible and licensees should be encouraged to work collaboratively with other stakeholders.

While collaboration can be good for everyone, as with most things, it must be done well. In addition to the many success stories, there are also some examples of hydropower operators that give an appearance of collaboration but fail to follow through on many of the most critical elements of this new technique. Often characterized as "hybrids," such processes can be as resource- and time-intensive in the early stages as the alternative process but fail to yield similar successes over time because mistrust among participants leads to litigation. This has been the case in a case in Hells Canyon on the Snake River in Idaho.

Increase Cooperation and Coordination among FERC and Resource Agencies—Cooperation among FERC and state and federal resource agencies will greatly improve the efficiency of the relicensing process. Under a charter signed in October 1998, the four principle federal agencies involved in relicensing—FERC, Interior, Agriculture, and Commerce—formed an Interagency Task Force to Improve Hydroelectric Licensing Processes (ITF). This committee was established to coordinate federal and state mandates. In July of 1999, the ITF established a Federal Advisory Committee to provide a forum for non-federal entities consisting of industry, states, tribes and environmental groups, to review and provide feedback on the activities of the ITF.

This forum concluded its work at the end of 2000 with the publication of six guidance documents covering a broad range of issues that confront hydropower regulation. It also resulted in one rulemaking on the part of FERC and two formal guidance documents on the part of Interior and Commerce. We believe that these reforms represent significant steps forward in improving the relicensing process, but they have not been given much time to work. Additional reforms, particularly by FERC, are still desirable. American Rivers supports a process that is structured around NEPA with draft and final decisional documents, complete information for all participants, flexible but reliable timeframes, and transparency of analysis. Unfortunately, as an independent agency, FERC cannot be compelled by the administration to make administrative or regulatory changes.

This fact was recently confirmed by the President's energy plan. "The NEPD Group recommends that the President *encourage* the Federal Energy Regulatory Commission (FERC) and *direct* federal resource agencies to make the licensing process more clear and efficient, while preserving environmental goals." (President's Plan *emphasis* added, 5-18 and 5-22)

While the President can "direct" federal resource agencies to act, just as his predecessor did through the efforts of the ITF, he can only "encourage" FERC. To date, FERC has been unwilling to undertake major changes to its licensing process other than those that reduce its own costs and time such as the ALP. If the President and Congress make changes to the relicensing process for federal resource agencies without requiring FERC to make changes as well, we will diminish the few basic environmental protections afforded in this process.

LEGISLATIVE CHANGES TO CONSIDER

American Rivers continues to believe that legislation is unnecessary to improve the licensing process for hydropower dams; however, if Congress insists on moving forward with a legislative package, we offer the following elements that we believe should be included:

- Require FERC to establish a process that begins at the beginning, revolves around NEPA, and provides all information deemed necessary by all decisionmakers.
- Implement direct cost recovery for federal and state agency participation
- Reauthorize the Office of Public Participation
- Require timely and complete development of studies on the part of applicants
- Insist on a relicensing schedule from FERC

[6] EPRI, *Hydro Relicensing and Mitigation Cost Data,* Excerpted from EPRI Report TR-104858, *Water Resource Management and Hydropower: Guidebook for Collaboration and Public Involvement* (Dec., 1995).

- Institute a royalty fee for the private use of public rivers
- Limit and condition the issuance of annual licenses
- Grant shorter license terms with more flexible conditions

CONCLUSION

Our nation's rivers and fisheries are facing a crisis of slow but steady extinction. Resource agencies with expertise in these areas and mandates that minimize environmental harm are in the best position to address this threat. We can endeavor to find better ways to generate hydropower and new sources of energy but we cannot bring back species once they have gone extinct. Reforms of the hydropower licensing process must focus on improved relations among the agencies rather than reduced protections for our river resources.

MEMBERS OF THE HYDROPOWER REFORM COALITION

Alabama Rivers Alliance (AL)*; American Canoe Association; American Rivers*; American Whitewater*; Anglers of the Au Sable (MI); Appalachian Mountain Club*; Atlantic Salmon Federation—Maine (ME); California Hydropower Reform Coalition (CA)*; California Outdoors (CA); California Save Our Streams (CA); California Sportfishing Protection Alliance (CA); California Trout (CA); Catawba Riverkeeper (SC); Center For Sierra Nevada Conservation (CA); Chattahoochee Riverkeeper (GA); Chattooga River Watershed Coalition (GA); Chota Canoe Club (TN); Coldwater Fisheries Coalition; Colorado Rivers Alliance (CO); Committee to Save the Kings River (CA); Conservation Law Foundation*; Coosa River Paddling Club (AL); Earthjustice Legal Defense Fund*; Environmental Action! (GA); Federation of Fly Fishers; Foothill Conservancy (CA); Friends of the Eel River (CA); Friends of the Kennebec Salmon (ME); Friends of the River* (CA); Friends of Sebago Lake (ME); Georgia River Network (GA); Housatonic Coalition (CT); Idaho Rivers United (ID)*; lzaak Walton League of America; The Institute for Fisheries Resources (OR); Kern River Alliance (CA); Kern Valley Community Consensus Council (CA); Kernville Chamber of Commerce (CA); Michigan Hydro Relicensing Coalition (Ml)*; Michigan United Conservation Clubs (MI); Mono Lake Committee (CA); Montana River Action Network (MT); The Mountaineers (WA); Natural Heritage Institute*; Natural Resources Council of Maine (ME); New England FLOW*; New Hampshire Coldwater Fisheries Coalition (NH); New Hampshire Rivers Council (NH); New York Rivers United (NY)*; North Carolina Watershed Coalition (NC); Northwest Resources Information Center (ID); Oregon Natural Resources Council (OR); Oregon Trout (OR); Pacific Coast Federation of Fishermen's; Associations (OR); Planning and Conservation League (CA); River Alliance of Wisconsin (WI)*; Rivers Alliance of Connecticut (CT); Rivers Council of Washington (WA); Rivers Unlimited of Ohio (OH); San Joaquin Paddlers (CA); Save our Streams; Sawmill River Watershed Alliance (MA); Sequoia Paddlers (CA); Shasta Paddlers (CA); Sierra Nevada Alliance (CA); South Carolina Coastal Conservation League (SC); The Steamboaters (OR); Tennessee Valley Canoe Club (TN); Trout Unlimited*; Tuolumne River Preservation Trust (CA); Upper Chattahoochee River Keeper (GA); Utah Rivers Council (UT); Vermont Natural Resources Council (VT); and West Virginia Rivers Coalition (WV).

*Denotes Steering Committee member

Mr. WALDEN. Thank you. We appreciate your testimony.

Let us go now to Mr. Ronald Shems. Welcome. We look forward to your testimony, sir.

STATEMENT OF RONALD SHEMS

Mr. SHEMS. Thank you, and I thank the committee——

Mr. WALDEN. You need to turn on—yes, pull that close to you.

Mr. SHEMS. Thank you, and I thank the committee for having invited me to testify today on behalf of the State of Vermont. Vermont values and relies upon renewable energy sources, such as hydroelectricity, and we share your desire to make the process more efficient and offer the following thoughts to assist the committee in that endeavor.

Vermont issues Clean Water Act section 401 certifications for a variety of programs, the most common of which are Army Corps of Engineers, 404 dredge and fill permits, and also FERC licenses.

FERC, in its May 2001 report on the relicensing process, seems to blame delays on the licensing process on the State 401 certification process. In addition, FERC asserts that the Federal Power Act and Clean Water Act should be changed to give FERC significant authority over State water quality decisionmaking. However, Vermont believes that the FERC process, which is currently unresponsive to State and local concerns, is the root cause of any 401 process delay.

To truly streamline the water quality certification process, I am here to point out that the FERC itself needs to work closely with the States on Clean Water Act compliance, given that the States, not FERC, are vested with authority over the Clean Water Act. FERC also needs to recognize that licensing terms, currently 30 to 50 years, should be dramatically shortened or periodically reviewed. FERC should also require immediate compliance with the Clean Water Act at the end of a licensing term.

FERC has not taken a comprehensive look at the 401 process and the benefits of State expertise. For example, the vast majority of certifications issued by the State of Vermont are instantaneous, issued in conjunction with nationwide dredge and fill permits issued by the Army Corps of Engineers. This was achieved through the Corps working closely with the State of Vermont and reaching an agreement that covers Corps projects falling under the nationwide permits.

Over the last year, Vermont has issued a number of 401 certifications, and the usual turnaround time for these 401 certifications has been approximately 3 to 9 months for several major projects, including major highway and water withdrawal projects for ski areas and snowmaking. Comprising almost two-thirds of our major projects requiring 401 certifications, highway and water withdrawal projects are expensive, long-term projects, much like hydroelectric dams.

In Vermont, the 3 to 9-month turnaround is typical for our 401 certification program. Yet, the certification process in regards to the hydroelectric facilities involving FERC can be very lengthy. As I mentioned before, Vermont attributes these delays not to section 401 or the certification process but to the characteristics of the FERC licensing process. I will take the next few minutes to outline these in more detail for the committee.

First, FERC is refusing to fully recognize the State's need to assure ongoing compliance of the Clean Water Act over the full-term of a hydroelectric license. The Federal Power Act, when enacted in 1920, encouraged dam construction by providing for a 50-year license. The era of dam construction is, as we have heard today, for all practical purposes, over. Yet, unlike licenses issued for sewer treatment facilities, coal- or gas-fired power plants or hazardous waste facilities that are on a 5-year licensing cycle, hydroelectric facilities are still on a 30 to 50-year licensing cycle. This means that many hydroelectric facilities licensed in the 1940's and 1950's are, for the first time, being brought into compliance with the Clean Water Act.

More significantly, it means that States, through the single 401 certification that we have to issue now, has to assure compliance with the Clean Water Act for the next 30 to 50 years. That is an

enormously difficult task that offers very little flexibility to the States. Because certification sets the stage for compliance for up to 50 years, negotiations with utilities are extensive and the pressures are very great on all sides.

In short, the length of the licensing term reduces the flexibility and raises the stakes. Shortening the licensing term or alternatively creating a periodic review mechanism that provides flexibility and allows the States to review Clean Water Act compliance throughout the full term of the license would make the process a lot more efficient. For Vermont, we believe that this could cut the 401 process turnaround time for a hydroelectric facility 2 to 3 to 9 months that we see with other projects.

Second, utilities are not providing timely and complete information, directly causing delay. Delay results in FERC's issuance of a year-to-year license. In the case of Vermont's largest hydroelectric project, a four-dam project in the Lemoil River, FERC has issued year-to-year licenses for 15 years, allowing the project to continue operating today under a licensed issued in the 1940's.

The utilities' lawyers are fond of reminding us that time is on their side. Delay puts off compliance with the Clean Water Act. We believe that in the interim, the interim being between the license expiration and the issuance of a new license, FERC should require at least minimum Clean Water Act compliance, thus easing the utilities' ability to comply in the long-term. This would dramatically speed up the 401 process. FERC could take the leadership role on this issue but has chosen to reject this management option.

Third, FERC has not established a working rapport with the States that other Federal agencies, including the Army Corps of Engineers, the Fish and Wildlife Service and EPA, have recognized as crucial to timely permitting and compliance. Instead it avoids State expertise and complains that its authority is being dissipated. However, as decided by the U.S. Supreme Court in the case of PUD Number 1 of Jefferson County v. Washington Department of Ecology, and as decided by the Second Circuit Court of Appeals in American Rivers and State of Vermont v. FERC, the authority lies with the States, not with FERC. There is no authority that is being dissipated here. Instead, the States and EPA are those with congressionally authorized power to oversee water quality. FERC's characterization of dissipated authority seems, in fact, an attempt to override local control and State expertise on water quality standards.

Vermont is under the impression that FERC is more concerned with consolidating its authority than with achieving a real partnership with the States. A true cooperative relationship between FERC and the States would allow the coordination and communication that would make the 401 process a lot more efficient.

Finally, I ask this committee to recognize that the authority and expertise of States. States are not delaying the 401 process. Antiquated FERC practices are the main cause of the delay. FERC clearly takes issue with the 401 process, but it must recognize the States' leadership on this issue and not try to override local concerns if it truly wants to achieve reform.

Despite this basic fact, I note that there were no State representatives on the Interagency Task Force, nor are there any State rep-

resentatives on the successor to the Interagency Task Force. In addition, the Federal Advisory Committee that was advising the ITF had several county, industry, tribal representatives on that committee. There was only one State representative and only one representative dealing with the Clean Water Act—this State. The Electric Power Research Institute, an industry research group, also advised FERC on revamping this process. There was no meaningful State participation in the EPRI process.

Mr. WALDEN. Can you sum up your remarks. We are about 2 minutes over here, 2½.

Mr. SHEMS. We would just ask that the State be involved in the ongoing process of trying to revamp the hydroelectric licensing process. Thank you.

[The prepared statement of Ronald Shems follows:]

PREPARED STATEMENT OF RON SHEMS ON BEHALF OF THE VERMONT AGENCY OF NATURAL RESOURCES

My name is Ron Shems and I am appearing on behalf of the State of Vermont Agency of Natural Resources. I thank the Chair and the Committee for inviting me today.

Vermont values and relies upon renewable energy sources such as hydroelectricity. We share your desire to make the process more efficient and offer the following thoughts.

Vermont issues Clean Water Act 401 certifications for a variety of programs, the most common of which are Army Corps of Engineers § 404 dredge and fill permits and FERC licenses. FERC, in its May 2001 report on relicensing issues, seems to blame delays in its licensing process on the State 401 certification process. In addition, FERC argues that the Federal Power Act and Clean Water Act should be changed to give FERC significant authority over State water quality decision-making.

However, Vermont believes that the FERC process—which is currently unresponsive to State and local concerns—is the root cause of any 401 certification delay. To truly streamline the 401 process, I am here to point out that FERC itself needs to work closely with States on Clean Water Act compliance, given that States—not FERC—were vested with authority over Clean Water Act issues.

FERC also needs to recognize that licensing terms—currently 30 to 50 years—should be dramatically shortened or periodically reviewed. FERC should also require immediate compliance with the Clean Water Act at the end of a licensing term.

FERC has not taken a comprehensive look at the 401 process and the benefits of State expertise. For example, the vast majority of certifications issued by the State of Vermont are instantaneous, issued in conjunction with nation-wide dredge and fill permits issued by the Army Corps of Engineers. This was achieved through the Corps working closely with the State of Vermont and reaching an agreement that covers Corps projects falling under nationwide permits.

Vermont is able to have a 401 certification turnaround time of approximately 2-9 months (with an average of five months) for major projects such as major highway and water withdrawal projects for ski area snowmaking. Comprising almost ⅔ of our major projects requiring 401 certifications, highway and water withdrawal projects are expensive, long-term projects—much like hydroelectric dams. In Vermont, this kind of turnaround is typical of our CWA 401 certification program.

Yet the certification process in regards to hydroelectric facilities, involving FERC, can be very lengthy.

Vermont attributes these delays, not to the 401 certification process, but to the characteristics of the FERC licensing process, and three reasons in particular:

First, FERC is refusing to fully recognize the States' need to assure ongoing compliance with the Clean Water Act over the full term of a hydroelectric license. The FPA, when enacted in 1920, encouraged dam construction by providing for a 50-year license. The era of dam construction is, for all practical purposes, over. Yet, unlike licenses issued for sewage treatment facilities, coal or gas-fired power plants, or hazardous waste facilities that are on a five-year relicensing cycle, hydroelectric facilities are still on a 30 to 50 year relicensing cycle.

This means that many hydroelectric facilities licensed in the 1940 and 1950s are, for the first time, being brought into compliance with the Clean Water Act. More

significantly, it means that States, through the single 401 certification issued now, have to assure compliance with the CWA over the next 30 to 50 years.

This is an enormously difficult task that offers very little flexibility. Because the 401 certification sets the stage for compliance for up to 50 years, negotiations with utilities are extensive and the pressures are great on all sides. In short, the length of the licensing term reduces flexibility and raises the stakes. Shortening the licensing term, or alternatively, creating a mechanism for periodic review during the licensing term, would provide flexibility and allow States to assure CWA compliance throughout the full licensing term. Shortening the licensing term would also lower the stakes. For Vermont, we believe this could cut 401 process turnaround time for hydroelectric facilities to 2-9 months, similar to the timing of certification of other major projects.

Second, utilities are not providing timely and complete information, directly causing delay. Delay results in FERC's issuance of a year-to-year license. In the case of Vermont's largest hydroelectric project, a four-dam project on the Lamoille River, FERC has issued a year-to-year license for fifteen years allowing the project to continue operating under a license issued in the 1940s. The utility's lawyers are fond of reminding us that time is on their side. Delay puts off compliance with the Clean Water Act. We believe that in the interim, between license expiration and the issuance of a new license, FERC should require interim Clean Water Act compliance measures. This would remove a utility's incentive to delay, and dramatically speed up 401 certification of hydroelectric facilities. FERC could take a leadership role on this issue, but has chosen to reject this management option.

Third, FERC has not established a working rapport with States that other federal agencies, including the Army Corps of Engineers, the Fish and Wildlife Service, and EPA, have recognized as crucial to timely permitting and compliance. Instead, it avoids State expertise and complains that its authority is being dissipated. However, as decided by the Supreme Court in *PUD of Jefferson County v. Washington Dept. of Ecology* (1994), and the Court of Appeals in *American Rivers and State of Vermont v. FERC* (2d Cir. 1997), FERC has no authority over Clean Water Act issues. Instead, the States and EPA are those with the congressionally-authorized power to oversee water quality. FERC's characterization of "dissipated" authority seems, in fact, an attempt to override local control and state expertise on Water Quality Standards. Vermont is under the impression that FERC is more concerned with gathering authority than with achieving a real partnership with the States. A true, cooperative relationship between FERC and the States would allow the coordination and communication that would hasten 401 certification of hydroelectric facilities.

Finally, I ask this committee to recognize the authority and expertise of States involved in this process. States are not delaying the 401 process. Antiquated FERC practices are the main cause of the delay. FERC clearly takes issue with the 401 process, but it must recognize States' leadership on this issue—not override Water Quality Standards—if it truly wants to achieve efficient hydroelectric licensing reform.

FERC should not blame the States without first having given the States the opportunity to provide meaningful input. There were no state representatives on the Interagency Task Force (ITF) to review hydroelectric project relicensing issues, nor are there any State representatives on the ITF's successor, the Interagency Hydro Committee. In addition, the Federal Advisory Committee (FACA) committee advising the ITF consisted of several counties, tribes, and industry, but only one State representative. Only the State member represented an interest with authority over Clean Water Act issues. The Electric Power Research Institute (EPRI)—an industry research group—also advised FERC without any State input.

FERC has no authority in Clean Water Act issues and cannot, and should not, be dictating compliance with State Water Quality Standards. FERC should work with the States if it wants to truly streamline the 401 certification process.

Mr. WALDEN. Thank you very much. The Chair would yield himself 5 minutes for the round of questioning.

Mr. Prescott, let us go to you as an applicant on the panel. We have heard a lot today about the process that is involved—good, bad, indifferent. Can you speak to this issue of these automatic license renewals? Is it as simple as you walk in and say, "I want to renew for another year," or do you have to—what kind of information do you have present FERC when you go through that process?

Mr. PRESCOTT. Well, Mr. Walden, before we get to the point of annual licenses, we have to submit a full and complete final application. And that was referred to earlier by Mr. Robinson from FERC. It is so voluminous and so intense, right now we are $30 million into studies to get to that point.

Mr. WALDEN. Thirty million?

Mr. PRESCOTT. Thirty million dollars in studies we have worked on so far at Hell's Canyon. That application is due July 2003. So there is a tremendous amount of work that goes into the point that gets you to annual licenses.

I would also like to say that in annual licenses it creates a vast amount of uncertainty for Idaho Power and its customers.

Mr. WALDEN. How so?

Mr. PRESCOTT. I have the responsibility to make sure that there are resources available for the customers of Idaho Power Company in both Idaho and Oregon. And I have to be certain that if the hydro system isn't going to be there, I have to provide other resources. It most likely would be some sort of combustion gas-fired turbine. So, again, in the annual licenses, it is total uncertainty for me. I don't know how to plan——

Mr. WALDEN. It sounded like today that those annual licenses were automatic. You can just go year after year after year. So can you explain the uncertain element?

Mr. PRESCOTT. They are annual licenses and they renew year by year, but at what point does the new license come out, what does it look like? That is the uncertainty.

Mr. WALDEN. Okay.

Mr. PRESCOTT. I can't put the value on the resource till I get that certain.

Mr. WALDEN. So reliability in getting—surety is the big issue for you?

Mr. PRESCOTT. Yes, in annual licenses.

Mr. WALDEN. And we heard testimony from Ms. Birnbaum that we are only talking about .4 of 1 percent of the Nation's power might be reduced, I think is——

Ms. BIRNBAUM. That is .04, actually.

Mr. WALDEN. I am sorry, .04 of 1 percent. What does that mean in terms of a region, because not every region in the country has hydro to the extent we do in the Northwest? What is the reduction of, let us say, just 1 percent mean to Idaho Power if you lose 1 percent of your power, hydro?

Mr. PRESCOTT. Well, 1 percent, I don't have the exact number here, is going to be on the order of like probably 100 megawatts. It is significant in that that has to be replaced with something, and, again, the only thing I can do is go out and construct a gas-fired combustion turbine to replace that capacity. Again, in my testimony, I point out that without quibbling over percentages, any loss of a clean, renewable energy source, I think is a disgrace.

Mr. WALDEN. One percent for Idaho Power would be 100 megawatts.

Mr. PRESCOTT. I think so; I will have to check.

Mr. WALDEN. Roughly, though; is that what you are saying? Okay.

Ms. Birnbaum, I was interested in your testimony which I read this morning. On page 14, I noticed you cite a 1997 University of Michigan study that showed FERC rejected or modified 35 percent of agency Fish and Wildlife recommendations. Those weren't the mandatory recommendations, were they?

Ms. BIRNBAUM. Right. They can't reject those.

Mr. WALDEN. I am sorry, cannot?

Ms. BIRNBAUM. They cannot reject the mandatory recommendations, although they have tried to argue that some of them are outside the jurisdiction of the agencies or that if they are submitted too late, that they cease to be mandatory. So far——

Mr. WALDEN. So the ones mentioned here, then, are the—are those the 10J? I am trying to learn this as I go. And those would be the non-mandatory?

Ms. BIRNBAUM. I am not sure whether the study looked only at 10J; I believe they also looked at 10A recommendations.

Mr. WALDEN. Okay. But these would be the non-mandatory.

Ms. BIRNBAUM. Right.

Mr. WALDEN. So these are added on top of whatever the agencies came up with with the mandatory recommendations?

Ms. BIRNBAUM. Right. Now FERC has asserted that it accepts 95 percent of them. This study found they rejected actually 35 percent.

Mr. WALDEN. Well, 95 percent of the non-mandatory?

Ms. BIRNBAUM. Right.

Mr. WALDEN. Or 95 percent of all?

Ms. BIRNBAUM. Of the recommendations as opposed to the mandatory conditions. The terminology is different. Of the recommendations, they maintained that they accepted 95 percent. The study finds a different figure.

Mr. WALDEN. And of those that use the terms "rejected" or "modified," 35 percent of the agency Fish and Wildlife recommendations, how much was rejected, how much was modified and——

Ms. BIRNBAUM. I am not certain. I would have to look at the study to get you that.

Mr. WALDEN. Okay, okay. I was just curious, because I was trying to figure out. It looks like if Fish and Wildlife and NMFS and you have got the State through the 401 process have the mandatory recommendations. And then you have these non-mandatory on top of that. And then a certain percent are either rejected or modified. Modified could mean a whole host of things.

Ms. BIRNBAUM. That is correct.

Mr. WALDEN. And 65 percent of them then are accepted. I realize where you are coming from, the 95 versus 65, but——

Ms. BIRNBAUM. Right. That recommendation non-mandatory materials are the only routes where other State agencies have any input into the process. The State fish and game agencies only can make recommendations, can't supply mandatory conditions, other agencies who are interested. So those are significant to those agencies.

Mr. WALDEN. Let me ask one final question, as my time is out. But, Mr. Prescott, we heard earlier, too, that really on the Clean Water Act issues, the 401, that you are just talking basically water temperature is what a colleague said, turbidity issues maybe. But

are there other issues that come up from the States unrelated? What sorts of things have you run into that other entities are trying to work into the application process?

Mr. PRESCOTT. Well, what we are seeing is things that go well outside the Clean Water Act. It could be such things as boat docks, recreational facilities, you name it. We refer to it as the Christmas tree approach.

Mr. WALDEN. Okay. Thank you, Mr. Prescott. My time has expired. I now turn to my colleague from Virginia for 5 minutes.

Mr. BOUCHER. Thank you very much, Mr. Chairman. Mr. Shems, I particularly want to thank you this afternoon for your willingness to appear here on what I know was very short notice.

Mr. SHEMS. Thank you.

Mr. BOUCHER. And we are grateful for your testimony, and I thank you very much for preparing it just over less than a 24-hour period.

Let me get your response to one of the recommendations that is in the FERC 603 Report. It recommends that State Clean Water Act authority and the relicensing procedures be limited to physical and chemical water quality parameters related to the hydropower facility. That particular recommendation has raised concern from a number of quarters, not the least of which is Commissioner Breathitt. In her comments concerning this set of recommendations, she has objected to that. I would like to get your view on what you think that recommendation, if implemented, would do to the States' authority to continue to protect water quality. And if you could comment on that, I would appreciate it.

Mr. SHEMS. I believe that——

Mr. BOUCHER. And could you pull that microphone a bit closer. We are having a little trouble. Thank you.

Mr. SHEMS. If that recommendation were adopted, it would have a devastating impact on a state's ability to assure compliance with the Clean Water Act.

Mr. BOUCHER. Could you explain that and tell us why that would be true?

Mr. SHEMS. The Clean Water Act requires States and/or EPA to protect the biological, chemical and physical integrity of water. And, essentially, FERC is cutting out the biological aspect of things. The Clean Water Act also requires us to manage waters in order to achieve designated uses, such as habitat. And if we don't have sufficient flow or if we don't have sufficient temperature or if the quality of the water body is insufficient or not good enough to maintain habitat, we cannot meet the designated use and cannot meet the requirements of the Clean Water Act.

Mr. BOUCHER. So there are essential factors that would have to be considered in addition to merely the physical and chemical characteristics for a complete evaluation to occur.

Mr. SHEMS. Absolutely. And the courts—the U.S. Supreme Court and also the Second Circuit Court of Appeals, in litigating these issues, have said that the States have been absolutely correct to consider the biological, chemical and physical integrity of water, sir, in doing so.

Mr. BOUCHER. Thank you very much, Mr. Shems.

Mr. SHEMS. Thank you.

Mr. BOUCHER. Mr. Hill, in your testimony, you state that Congress needs to consider carefully the recommendations that are made by the FERC staff—and you are referring to the 603 report—because, and I will quote from your testimony, "Some of the recommendations appear to be based on inadequate or inappropriate data, and some may change the outcomes of the process." That is a pretty strong criticism of the report, and it seems to undermine a lot of the basis on which we might be proceeding as a committee. And I would like to ask for you to elaborate, if you would, please, on the testimony that you have given in this particular, and cite specific examples, if you can.

Mr. HILL. Yes, sir. And if I may, I would like to have Ms. Barlow and Mr. Cotton respond to this. They have done the bulk of the work here. They have seen the specific examples. We cite a couple of them in the report.

Mr. BOUCHER. We would be happy to hear from them.

Mr. HILL. But I am going to refer to Ms. Barlow and Mr. Cotton.

Mr. BOUCHER. All right. Ms. Barlow?

Mr. BARLOW. A couple of the specific examples——

Mr. BOUCHER. And if you could pull the microphone just a bit closer, please. Thank you.

Mr. BARLOW. A couple of the specific examples that we found specifically regarding cost was that FERC obtained licensing costs from the applicants. These were voluntarily provided. And these costs were—FERC gave no guidelines for administering these costs, so it is sort of hard to tell what the results of those would be, as far as who decided to give these costs.

In addition, we also found that FERC was unable to separate the amount of costs that they provided for themselves from the relicensing—from the costs that they also do to do other relicensing studies and things.

Mr. BOUCHER. Okay. Do you have some further examples? Mr. Cotton?

Mr. COTTON. Yes. She touched on the inadequate data that FERC was using. We also touched on the inappropriate data. For example, the data that they used to justify their need to be the sole source, one-stop shopping, identified 16 projects that took a longer period of time than would be normally expected under the process and couldn't be tied to any particular reason, such as water certification. That they used to argue needed to change the process before all these projects are relicensed. Only problem is 14 of the 16 projects that they referred to were for original licenses, not projects that were coming in to be relicensed.

Now it is true that they all go through the same steps in the process, but you address different issues for a project that hasn't been built yet versus one that has been out there for 50 years and may have to put in fish ladders to continue operating. So that is where we raised the concern, when we looked at FERC's report, that not only did they not have what we felt was adequate data to make decisions, but we thought the data that they used sometimes they didn't use appropriately.

Mr. BOUCHER. Okay. You are very credible agency, and absolutely neutral, and your construction of recommendations—you don't have an axe to grind. And your recommendations come with

great weight and authority in the minds of this Member of Congress. And so I want to thank you very much for those comments, and we will certainly consider very seriously what you have had to say about this report. Thank you very much, Mr. Chairman.

Mr. WALDEN. Now the Chair yield 5 minutes to the gentleman from Arizona, Mr. Shadegg.

Mr. SHADEGG. Thank you, Mr. Chairman. Let me begin, Mr. Hill, with you and with your assistants. I guess there is a question about the reliability of the FERC data. I want to go to some of that data. In the FERC report, they contend that the licensing time period required for relicense applications between January 1982 and May 1992, that 10 or 11-year span, was 30 months. And then they content that they looked a second block of 93 cases for relicensing between January 1, 1993 and December 31, 2000. And they say that of the 93 cases they looked in that class, I believe the time was 42 months. Do you challenge those findings on just objectively how much time it took to relicense?

Mr. HILL. I am not in a position to challenge them, because we have not really looked behind that source data. But I will raise the following questions. They are basically running—whatever numbers they can scrape together, there is incomplete data sets. There is a question as to the sample that they are taking. In other words, is that earlier sample—what types of projects are we talking about, big hydropower projects or small hydropower projects? Our understanding is that the relicensing that has been done up to this point has been primarily on smaller projects, and the ones that are coming into the pipeline now are bigger projects.

Could that account for the difference in the delays, or the additional time it is taking? It is hard to say. There are a lot of factors that could go into why it would be longer versus shorter, and that is exactly why the point we are making is you need to kind of get the data together, and you need to get the data by participant, by project, by parts of the process. And then you need to analyze that data to see where the snags are occurring, and that is where you can focus your reforms.

Mr. SHADEGG. I guess one of my concerns about that answer is that you say it is your understanding that they were looking at smaller projects versus larger projects. Your report would be more useful to me at least if you could answer the question I just put and we could get some data to rely upon.

One of the concerns I have——

Mr. COTTON. Could I add to that?

Mr. SHADEGG. Well, my time is pretty limited, but——

Mr. COTTON. Okay. We couldn't find anybody that disagreed with what you just said. They may disagree over the exact numbers, but we couldn't find anybody, not in the environmental community, not in the States, not in the Federal regulatory agencies that would not agree that it takes longer, costs more, and is far more controversial today than it was when that first set of projects went through. The problem you have right now is you don't know why.

Mr. SHADEGG. That is a great segue. And in your report, you make an effort to identify some causes. You point out at page 9 of your report that public values have changed over the past 30 to 50 years and now reflect a growing concern about the environment.

And I would agree with that. I am concerned about the environment; I am concerned about the impacts of dams and hydro projects on our rivers. I care deeply about them. We don't have enough in Arizona, and the ones we have I care a lot about. But that covers a span of 30 to 50 years. Their data talks about just the last 20 years, roughly. And it is tough to know the answer.

You do go a little more specifically, at page 8 of your report, and talk about the Electric Consumers Protection Act in 1986, which as I understand it, gave the States a great deal of additional role, including Mr. Shems, in the process, which I personally think is an appropriate role. But I guess that is where I wanted to kind of get to the nub of my question, which was, okay, that act passed in 1986. Their data looked at 1982 to 1992. It seems to me that there was a period of time when that act was in place that we were still processing, according to their report, applications at a more rapid pace, medium time, than the time span from 1993 to 2000.

And I guess my question is it seems to me that it can't be—it could well be that over time environmental concern has caused the delay. And it could be that following 1986, the Electric Consumers Protection Act caused some additional environmental study, perhaps appropriately, and caused some delay following 1986. But that doesn't explain between 1986 and 1992 why we were processing, at least according to that data, those applications more quickly than we are now. And I would be happy to have you comment, and then I have got some questions for others.

Mr. COTTON. Could I respond to that very quickly? You passed a law in 1986. FERC did not enact the implementing regulations or complete anyway that implementing regulations till 1992.

Mr. SHADEGG. Okay.

Mr. COTTON. So that could and probably does explain why you are going to see that difference between 1992 and now and looking back. There is a lag time between you pass a law and when an agency publishes or promulgates the implementing regulations. In this case, it was 1992.

Mr. SHADEGG. Do you want comment? Sure.

Ms. BIRNBAUM. Yes. Might I suggest another reason? I think that the most significant factor in why there is a longer licensing period starting in 1993 was the class of 1993 relicensing class overwhelmed everybody. Since then, FERC has formalized its regulations for relicensing. There has been the interagency work and so on to try to keep that from happening again, as this new glut of applications comes in. But simply, at that point, nobody had the capacity to handle the number of applications that came in, and it delayed everything.

Mr. SHADEGG. I appreciate that information. Ms. Birnbaum, since you are at the microphone, let me ask you a question. Mr. Prescott expressed a concern that I think reflects that of many people, which is with a growing population in the country and therefore a growing demand for energy, no matter how much more efficient we make it, which we need to be working very aggressively on, loss of power generating capacity at hydroelectric plants, even if it is in the small numbers you talked about, for many of us is going in the wrong direction, particularly given the ability of hydro

to do, at least in some circumstances, peaking power, to provide peaking power.

My question of you is the same question I asked of Commissioner Hébert before, which was assuming a turbine, a more efficient turbine, is made more efficient by the way its windings go, not by its blades that the fish have to swim through, and assuming that the new, more efficient turbine is neutral in its damage to fish and/or assuming other mitigating things are done to let fish bypass that, fish ladders, other things you have talked about, would your organization agree or would you not agree that replacing inefficient turbines with more efficient turbines ought to be a part of the mix and that there is nothing negative about doing so?

Ms. BIRNBAUM. We strongly favor improved technologies that increase the amount of power generated by each drop of water. That is different, however, from saying that we would support turbine changes that might increase capacity, increase the peakings of power plants, which often, although I recognize it may meet the peak power demand in Phoenix, has a significant impact on river environments.

Mr. SHADEGG. One of the things we do in Arizona that is very important is we have a pump-back system. We take water out of one lake, pump it into the lake above, and release it during the peaking areas. I would be interested in if you have information on whether that has negative environmental consequences.

Ms. BIRNBAUM. Frequently, pump-back systems do have negative environmental consequences. Those need to be dealt with on a case-by-case basis.

Mr. SHADEGG. They have not seemed to be a problem or have not gotten publicity in Arizona.

Mr. WALDEN. We need to wrap it up.

Mr. SHADEGG. Mr. Prescott, I assume you support more efficient turbines?

Mr. PRESCOTT. Absolutely.

Mr. SHADEGG. And that technology does exist?

Mr. PRESCOTT. Yes, it does.

Mr. SHADEGG. Thank you, Mr. Chairman.

Mr. WALDEN. Thank you. I believe we have a unanimous consent request?

Mr. BOUCHER. Mr. Chairman, I ask unanimous consent that a letter from a variety of environmental organizations relating to these hydro licensing renewal processes be included in the record.

Mr. WALDEN. Without objection.

[The letter follows:]

TROUT UNLIMITED, IZAAK WALTON LEAGUE OF AMERICA,
AMERICAN SPORTFISHING ASSOCIATION,
BASS ANGLERS SPORTSMAN SOCIETY (B.A.S.S.),
PACIFIC COAST FEDERATION OF FISHERMEN'S ASSOCIATIONS,
June 26, 2001

To the Energy and Commerce Committee, Energy and Air Quality Subcommittee:

In the coming weeks, this Subcommittee will consider changes to the hydropower licensing process set out in the Federal Power Act, as amended. We urge you to oppose rolling back environmental protections in the hydropower licensing process. Hydropower licensing "process reform" and "streamlining" that undermines state and federal resource agency protection of valuable fisheries, federal lands used by the public for recreation, and water quality will harm recreational fishing and the fishing industry.

President Theodore Roosevelt recognized the importance of fisheries when the rules for use of our public waterways by private hydropower developers were established in the Federal Power Act. He also understood that the management of these rivers would need to change as our knowledge of this valuable resource and public priorities changed.

Today we have overwhelming scientific evidence that hydropower dams have caused significant harm to our nation's fisheries. Most notable are the declines of Atlantic salmon, now almost extinct in the Northeast, and Pacific salmon and steelhead stocks, many of which are sliding down that same path. While salmon are the most publicly visible of the species affected by hydropower dams, they are by no means the only ones.

We also have a much better understanding of how to avoid these fishery declines, and in some instances, how to use technology and project operations to enhance fisheries. Striped bass and shad fisheries are recovering in many areas of the Northeast due in part to better operation and facilities at hydropower dams. Well-operated hydropower projects also enhance bass and other freshwater fisheries that are vital to local recreation-dependent businesses. When hydropower projects are relicensed, we should require the best available technology, adopt best management practices, and take full advantage of the expertise of state and federal resource agencies in setting the terms for hydropower use of public rivers for the next generation.

Resource agencies responsible for the health of fisheries have only one chance every 30 to 50 years to affect how private hydropower projects are operated. These agencies are charged with protecting resources that large numbers of anglers and others enjoy, and upon which numerous small and large businesses depend. Resource agencies should be allowed to do their job, and not be saddled with excessive procedural and substantive requirements that effectively deny them an effective role in hydropower relicensing. In particular, the resource agencies should not be required to duplicate the role of the Federal Energy Regulatory Commission. Nor should they be denied the tools, resources and information needed to make good decisions.

In 1986, Congress passed a package of amendments to the Federal Power Act that reaffirmed the need to consider all interests in public rivers, not just hydropower. Since then, FERC, the agencies, hydropower project owners, fisheries advocates and the public have built a strong foundation for increasingly efficient and environmentally satisfactory hydropower relicensing proceedings. It's the kind of smart evolution of river management that President Roosevelt had in mind.

Over the next 15 years the licenses for more than 450 dams affecting more than 130 of our nation's rivers will come up for renewal. We ask you to ensure that we continue to make progress toward restoring and enhancing fisheries affected by those projects by opposing amendments to the hydropower licensing process.

Sincerely,

STEVE MOYER
Vice President for Conservation Programs, Trout Unlimited

JIM MOSHER
Conservation Director, Izaak Walton League of America

MICHAEL NUSSMAN
Vice President, American Sportfishing Association

BRUCE SHUPP
National Conservation Director, Bass Anglers Sportsman Society (B.A.S.S.) Inc.

GLEN SPAIN, *Northwest Regional Director,*
Pacific Coast Federation of Fishermen's Associations (PCFFA)

Mr. WALDEN. We now ask unanimous consent that we be allowed to take testimony for other witnesses who want to provide it to the committee and that we have requested. Without objection, so ordered.

Ladies and gentlemen, thank you for being here today. We appreciate your testimony as we work on this issue. Thank you. The committee is adjourned.

[Whereupon, at 3:50 p.m., the subcommittee was adjourned.]

[Additional material submitted for the record follows:]

PREPARED STATEMENT OF HON. LINDA BREATHITT, COMMISSIONER, FEDERAL ENERGY REGULATORY COMMISSION

Mr. Chairman and Members of the Subcommittee: I am pleased to have the opportunity to submit my testimony on the role of hydroelectric power in helping to meet our Nation's energy demands, the role of federal government in licensing the operation of hydroelectric dams, and barriers to efficient operation and licensing of hydroelectric dams. The Commission regulates hydroelectric facilities that produce over five percent of all electric power generated in the United States. The Commission's Office of Energy Projects administers programs for (1) the licensing and relicensing of jurisdictional projects; (2) the continued regulatory oversight of licensed projects during their license term; and (3) the oversight of the safety of licensed hydropower dams.

Most recently, the Commission's focus in the hydroelectric arena has been to seek ways, within our jurisdiction, to minimize the severity of the power crisis faced by citizens in the Western states. Hydropower comprises approximately 40 percent of the total Western Systems Coordinating Council (WSCC) generation capacity. In the testimony I submitted for the March 20, 2001 hearing before this Subcommittee, I noted that the Commission has launched an initiative to explore the feasibility of increasing energy production, peaking capacity, and other power benefits of hydropower projects by easing certain operating constraints. I also anticipated the tensions that would likely occur, upon review of licensees' applications responding to our initiative, in finding a balance between greater operational flexibility and the protection of environmental resources.

The Commission has so far responded to three requests by licensees in the West to waive certain license conditions pertaining to minimum flow and reservoir level requirements in order to increase generation. Indeed, the major issues in those cases have involved competing power and non-power interests. To grant even a temporary waiver of license conditions entails careful consideration since such operating constraints serve to protect many resources, such as resident and anadromous fish, water quality, recreation, municipal and industrial water supplies, and agricultural resources. In each case, my support for waiver of the license conditions at issue was tempered with a concern that any action taken should not negatively affect the long-term health of the environment. I believe that it is important not to create additional problems through lack of measured consideration and foresight. Rehearing is pending on two of the approved waivers, and the Commission is reviewing comments in the third proceeding. The Commission also has pending before it six additional applications for relief from license conditions to increase generation in the WSCC region. I intend to give these pending matters my full attention.

The Subcommittee asks the Commissioners to comment on procedures for licensing projects that are within the Commission's jurisdiction. In this regard, I refer the Members of the Subcommittee to the Report on Hydroelectric Licensing Policies, Procedures, and Regulations: Comprehensive Review and Recommendations Pursuant to Section 603 of the Energy Act of 2000 (Staff Report), a document prepared by the Commission's staff and submitted to the United States Congress in May 2001. The Staff Report provides a thorough review of our hydroelectric licensing program and presents staff's conclusions and recommendations for legislative, procedural, and policy changes to reduce the costs and time involved in the licensing process. As the report points out, the median time from the filing of a license application to its conclusion for recent applications is 43 months, and many proceedings take substantially longer. Clearly there remain impediments to the efficient administration of the Commission's licensing authority; and to the extent I can add my perspective on staff's recommended measures, I will do so below.

More so than in any other program area administered by the Commission, the hydroelectric licensing process entails statutory requirements that give other agencies a significant and powerful role in the licensing process. The Commission has continuously endeavored to work with these other agencies to seek faster resolution to licensing proceedings; however, I agree with staff's conclusions that additional legislation would assist in this regard. Staff's primary recommendation is that Congress restore the Commission's position as the sole federal decisional authority for licensing conditions and processes. Under this approach, those Federal agencies with the authority to impose mandatory license conditions would retain that authority, subject to a statutory reservation of Commission authority to reject or modify the conditions based on inconsistency with the Commission's overall public interest determination. This approach could be described as "one-stop shopping" at the Commission for all federal authorizations.

While I share staff's views that there remain impediments to efficient hydrolicensing that legislation could alleviate, I do not join in the recommendation

for a "one-stop shopping" approach. As detailed in the Staff Report, various agencies—the Departments of Agriculture, Interior and Commerce, among other federal and state entities—are called upon during the licensing process to evaluate many competing aspects of license applications, and I believe it is appropriate for licenses to reflect the specialized expertise of these other agencies. Each brings to the table important responsibilities in mitigating the environmental effects of hydropower generation. While I firmly believe that the cost and delay of licensing should be minimized where possible, this should not come at the expense of legitimate environmental mitigation.

I do, however, agree with some of the alternative legislative recommendations presented in the Staff Report. I would support legislation that would target legislative solutions to the specific impediments the Commission faces in exercising our existing statutory authority. First, I would advocate requiring agencies with mandatory conditioning authority to better support their conditions with a full range of public interest values and to provide a clear administrative appeals process. I believe that this could result in licenses that reflect a better balance of developmental and environmental values, as well as less costly mandatory conditions.

Second, I believe it would be very helpful if Congress clarified the statutory definition of "fishways", which Section 18 of the Federal Power Act gives the Secretaries of Commerce and Interior the authority to prescribe. The authority to mandate fishways has taken on great significance in licensing and relicensing proceedings because fishways can dramatically affect the capital cost and revenue potential of a project. As explained in greater detail in the Staff Report, the Commission has little recourse when it concludes that one or more mandatory conditions would render a project inconsistent with the public interest; and a clear definition would result in fewer such conflicts.

Third, I would support an amendment to the Federal Power Act (FPA) to permit the Commission to remit annual charges for other federal agency FPA Part I hydropower costs directly to the agencies, specifying that they are to be used for implementing Part I. This would better allow federal agencies to recover their funds spent for the purpose of participating in the licensing process, and it would permit licensees to seek administrative appeal of other agency costs from the agencies themselves-and, if necessary, seek judicial review of other agencies' final determinations. The Commission should not be in a position to review the appropriateness of other agencies' expenditures. I believe the three legislative measures I have described would provide the Commission with the appropriate tools to act more expeditiously on license applications, and in some cases, could reduce the costs associated with license conditions.

I would like to comment on one final recommendation that I cannot support. The Staff Report recommends that state Clean Water Act (CWA) authority should be limited to physical and chemical water quality parameters related to the hydropower facility. Currently, a state may act under the CWA to regulate not only water quality, but water quantity and state-designated uses. I do not disagree with staff's premise that reducing the ambit of the certification to water quality itself would reduce the need for licensees to conduct studies of other matters relating to the use of project waters and thereby serve to streamline CWA certification. Nevertheless, I do not concur in staff's recommendation to limit the states' CWA authority. I believe that the determinations of state water quality agencies concerning the use of project waters reflect legitimate local concerns, and I would prefer to seek other means of working with states on CWA issues than the recommended legislation.

As a matter over which the Commission already has control, I support the continuation of the the Alternative Licensing Process (ALP), notwithstanding the fact that it involves lengthy and extensive pre-filing consultation and may not significantly reduce the overall time for obtaining a license. The most important benefit of the ALP is that it encourages parties to communicate earlier, identify issues, and discuss resolution. As a general proposition, I favor negotiated resolutions over regulatory mandates, and for this reason support the ALP. Finally, I will consider the regulatory and policy changes delineated in the Staff Report if they come before the Commission for decision.

In closing, I note that, given the events in energy markets this year, the hydroelectric program at the Federal Energy Regulatory Commission has not received as much public attention as our electric and natural gas programs. However, the energy crisis and drought conditions affecting the West have served to emphasize the importance of hydroelectric generation in the Nation's energy mix. I assure this Subcommittee that matters involving the critical issues of hydroelectric licensing, regulatory oversight, and safety have received the Commission's and staff's full attention and will continue to be a high priority for me.

PREPARED STATEMENT OF HON. WILLIAM MASSEY, COMMISSIONER, FEDERAL ENERGY REGULATORY COMMISSION

Mr. Chairman and Members of the Subcommittee on Energy and Air Quality: Thank you for the opportunity to testify on the subject of the Commission's role in the licensing of hydroelectric power. As I am sure you will agree, recent events in the California and western electricity markets have highlighted the critical role of hydropower in meeting our nation's energy needs.

The Northwest Power Planning Council has reviewed the reports that snowpack levels are less than 50 percent of average in many areas of the Columbia and Snake River basins, and that spring and summer streamflows well below average are forecast for most of the west. In addition, the Council notes that reports of below average water storage in the west have "serious implications for the reliability of power supply" as well as "serious implications for power prices through the west . . ." The Council has requested that the Commission give expedited consideration to modifications of operations at licensed projects in the region in order to alleviate power shortage.

These events have presented the Commission with some tough challenges in carrying out its responsibility to determine the proper balance between the development of hydropower as a renewable energy source and environmental protection. The Commission has met these challenges in a thoughtful and responsible manner. We recently issued three orders amending licenses to increase hydropower generation in the western United States. In each of these instances, I agreed with the Commission's finding that temporary measures required to increase power production could be implemented without any long-term environmental impact. Let me briefly summarize these cases:

1. On March 15, 2001, Idaho Power Company filed a request for a 1-year waiver of article 410 of its *Twin Falls Project No. 18* license. The project is located on the Snake River in Idaho. Article 410 requires spills of 300 cubic feet per second (cfs) over Twin Falls during certain daylight hours to protect aesthetic resources at the falls. On May 8, 2001, the Commission issued an order that allowed the aesthetic flows to be temporarily suspended through March 31, 2002 except on state and federal holidays. The order also required the licensee to resume releasing flows over Twin Falls if necessary to maintain the state water quality standards for dissolved oxygen. The additional power that can be generated by the suspended flows is between 6,300 and 9,700 MWh, an increase of 15 to 17 percent.

2. On March 19, 2001, Idaho Power Company filed a 1-year waiver of Article 407 of its *Milner Project No. 2899* license. The project is located on the Snake River in Idaho. Article 407 requires the release of 200 cfs to enhance the fishery resources in the 1.6-mile-long reach. The amendment was publicly noticed on March 26, 2001. On May 8, 2001, the Commission issued an order approving the request to suspend the minimum flow in the bypass reach through March 31, 2002. The additional power that would be generated by the suspended flow is between 10,250 and 14,086 MWh, an increase of from 31 to 50 percent.

3. On May 9, 2001, Public Utility District No. 2 of Grant County, Washington (Grant County), filed an application to suspend its spill flow requirements at *Priest Rapids Project No. 2114* from May 9, 2001 through this summer's migration season. The project is located on the Columbia River in Washington and is comprised of the Priest Rapids and Wanapum developments. The application was noticed for public comment on May 10, 2001. On June 1, 2001, the Commission issued an order approving a spill flow exchange, an alternative to Grant County's proposal offered in comments from the Bonneville Power Administration (BPA). Under the spill exchange, BPA will provide spill during the spring of 2001 at the Bonneville and Dalles dams, foregoing up to 300 MW-months of generation, in order to increase the downstream survival of various salmon and steelhead species, some of which are listed under the Endangered Species Act (ESA). Later, during the summer, if necessary for BPA to meet its reliability criteria, Grant County will eliminate spill at Priest Rapids and Wanapum dams for up to sixteen hours per day (during daylight hours), thereby providing generation to be delivered to BPA to offset BPA's generation lost as a result of the spring spill. The spill exchange would allow Grant County to produce an additional 219,600 MWh. Increased generation by Grant County from suspended summer spills would be used to offset reduced generation by BPA from increased spring spill. The Commission staff's analysis determined that suspension of spills by Grant County in accordance with the spill exchange would result in a four percent decrease in project passage survival for less than half the outmigrating non-listed summer/fall chinook salmon, and would have no effects on other salmon and steelhead species, including those listed under the ESA.

When deliberating whether to license, relicense or amend a hydropower license, the Commission has the responsibility to consider all aspects of the public interest. Amendments to the Federal Power Act, enacted as the Electric Consumers Protection Act of 1986, require FERC to give equal consideration to environmental resources and energy conservation, as well as developmental values such as power production. Thus, the ultimate responsibility for determining the proper balance between the development of hydropower as a renewable energy source and environmental protection rests with FERC.

On May 8, 2001, the Staff of the Commission, pursuant to Section 603 of the Energy Act of 2000, submitted to Congress a comprehensive review of policies, procedures and regulations for the licensing of hydroelectric projects, with the goal of reducing the cost and time for obtaining a license. As the Staff report notes, the views of individual Commissioners were not incorporated into the document, nor was it presented to the Commission for approval or disapproval. However, the document does serve as a useful platform for discussion of my role as a decision maker on items presented for formal Commission action.

At the outset, it must be noted that the Chairman of the Commission is the administrative officer with responsibility for directing the agency's hydropower program (Office of Energy Projects). Internal Staff concerns with available resources, relationships with sister agencies, non-governmental agencies or state resource agencies, come to the attention of individual Commissioners primarily in the context of internal debate regarding particular orders.

The Staff report's primary recommendation is that Congress should establish one-stop shopping at the Commission for all federal authorizations. This proposal has some immediate appeal. An argument can be made that the agency with the authority to determine the ultimate outcome of a particular proposal should drive a single administrative process in conjunction with a single NEPA document. The Staff report recommends that federal agencies with mandatory conditioning authority retain that authority, subject to a statutory reservation of Commission authority to reject or modify the conditions proposed by other agencies if they are found to be inconsistent with the Commission's overall public interest determination. Other federal agencies bring to the table valuable expertise and historical insight that should be given its proper weight, however. The concept that the Commission should ultimately be able to reject or modify another federal agency's condition should be tempered by a recognition of that agency's particular expertise. If the agency's condition is based on substantial evidence and there is a rational connection between the facts and the policy recommendation, the condition should be given substantial deference by the Commission. I agree, however, that federal agency conditions should be sensitive to cost impacts, and that costs should bear a thoughtful relationship to the environmental return. I agree that the Commission should not be placed in the position of having to accept a "Cadillac" condition or not license a project.

Closely related to the report's recommendation of a "one-stop shopping agency" is its discussion concerning the effect of three court decisions on the Commission's ability to incorporate or reject state water quality certifications and FPA Section 18 fishway prescriptions in balancing developmental and environmental concerns. A proposed environmental action may also adversely affect other environmental resources. For instance, in a recent case involving an interpretation of the Endangered Species Act, a proposal for fish ladders upstream to a reservoir were opposed by resource agencies concerned that the introduction of a new species could adversely affect existing fish stocks. These three judicial decisions are as follows:

- *PUD NO. 1 of Jefferson County v. Washington Department of Ecology,* 511 U.S. 700 (1994), where the Court held that a State imposing a condition under the Clean Water Act could regulate not only water quality, such as its chemical composition, but also the method by which water is released by a project.
- *American Rivers I v. FERC,* 129 F.3d 99 (2nd Cir. 1997), where the court held that the Commission lacked authority to determine whether conditions submitted by state agencies pursuant to Section 401 of the Clean Water Act were beyond the scope of that section.
- *American Rivers II v. FERC,* 187 F.2d 1007 (9th Cir. 1999), where the court ruled that the Commission lacked authority in individual cases to determine whether prescriptions submitted under Section 18 of the FPA are in fact fishways.

I agree with the Staff report that the Commission may be hampered in performing its balancing obligation if section 401 Clean Water Act certifications and Section 18 fishways prescriptions continue to hamstring our ability to weigh competing choices and values. This is at the heart of my decision making role as a Commissioner of this agency. Congressional intervention may be necessary to refocus and underscore the Commission's role as the ultimate authority in balancing competing concerns in hydroelectric license matters.

Thank you for the opportunity to submit this written statement, and I will be pleased to respond to any questions.

PREPARED STATEMENT OF DONALD SAMPSON, EXECUTIVE DIRECTOR, COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

Thank you for the opportunity to offer testimony regarding National Energy Policy and Hydroelectric Power. My name is Donald Sampson; I am the Executive Director of the Columbia River Inter-Tribal Fish Commission (CRITFC) in Portland, Oregon. I believe we share common desires to find solutions to our national energy problems that are affordable and environmentally sound. The CRITFC tribes are developing a tribal energy vision and have the expertise and the resources available in the Northwest to alleviate the region's energy shortages. Additionally, tribes and tribal lands across the nation hold vast resources and stand ready to offer solutions to the nation's energy problems. At the same time, the tribes are prepared to be good stewards of the land and plan for the long-term sustainability of the national economy through wise energy planning.

Formed by resolution of the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation, the Columbia River Inter-Tribal Fish Commission (CRITFC) provides coordination and technical assistance to ensure that the resolution of outstanding treaty fishing rights issues guarantees the continuation and restoration of our tribal fisheries into perpetuity. Since 1979, CRITFC has contracted with the BIA under the Indian Self-Determination Act (Public Law 93-638) to provide this technical support. The tribes' technical experts have identified where federal and state resource managers have fallen short in protecting and restoring the habitat and production of **all** salmon stocks. *Wy-Kan-Ush-Mi Wa-Kish-Wit*, the *Spirit of the Salmon,* the tribes' restoration plan, the only gravel to gravel salmon restoration plan in the Columbia Basin, identifies threats to salmon, proposes hypotheses based upon adaptive management principles to address those threats, and provides specific recommendations and practices that must be adopted by natural resource managers to meet treaty obligations. *Wy-Kan-Ush-Mi Wa-Kish-Wit* can be viewed at www.critfc.org. These four tribes have rights reserved by treaties with the United States of America [1] to take fish destined to pass the tribes' usual and accustomed fishing places. This right covers fish originating in the Columbia River Basin. Protection and enhancement of those streams that provide spawning and rearing habitat and migration corridors for these fish are of critical importance to the tribes and the region. The CRITFC provides technical and legal support to the tribes to carry out those goals.

In 1855, the United States entered into treaties with the Nez Perce Tribe, the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Springs Reservation of Oregon, and the Confederated Tribes and Bands of the Yakama Nation to ensure the mutual peace and security of our peoples. For the four tribes' cession of millions of acres, the United States promised to protect and honor the rights and resources the tribes reserved to themselves under those treaties. Those resources, among them our most treasured resource, the salmon, are being destroyed largely by hydroelectric projects on the Columbia and Snake Rivers. The salmon are also imperiled by relicensing processes at those dams that seek to delay necessary environmental analysis and changes to hydro structures and operations under the Federal Power Act. Existing license holders, who use process and delay to short change environmental protections necessary to insure the continued existence of salmon, are trampling upon our rights, our culture and our religious beliefs that are tied to the salmon.

The Treaty Tribes grow weary when our expertise to protect our treaty resource is ignored, when our input in public processes is ignored, when our negotiations lead to settlements and those settlements are ignored, when our good faith efforts to cooperate and participate in decision-making forums are ignored, and when the treaties signed by the United States Government are ignored in order to protect the unreasonable economic interests of dam owner/operators. The Columbia River Treaty Tribes will strongly oppose any effort to expedite the dam relicensing process that will lessen environmental analysis and protection of salmon at hydro projects, as well as any effort to diminish tribal and public input during relicensing. The Columbia River Treaty Tribes will oppose any effort to cripple the jurisdiction of the fed-

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[1] Treaty with the Yakama Tribe, June 9, 1855, 12 Stat. 951; Treaty with the Tribes of Middle Oregon, June 25, 1855, 12 Stat. 963; Treaty with the Umatilla Tribe, June 9, 1855, 12 Stat. 945; Treaty with the Nez Perce Tribe, June 11, 1855, 12 Stat. 957.

eral agencies that have the trust responsibility to protect reservation lands and fish and wildlife through mandatory license conditions. Any compromise of the Department of Interior's authority under section 4(e) of the Federal Power Act to protect reservation lands and treaty resources will obstruct the obligation of the United States to "secure" our treaty rights. Any compromise of fish and wildlife agencies' authority under section 18 of the Federal Power Act to prescribe fishways to protect treaty resources will also be seen as an attempt to interfere with our treaty rights. Reducing cost and time in relicensing at the expense of the public, the natural resource or the federal agencies with jurisdiction will be seen as an abrogation of the trust responsibility and the treaties entered into between the tribes and the United States government.

With that said, the CRITFC tribes are developing a Northwest Tribal Energy Vision that will simultaneously provide the region with affordable energy solutions while taking energy policy and development off the backs of salmon and off the Columbia and Snake Rivers. Our energy solutions complement the national recommendations of the Inter-Tribal Energy Network. Tribes currently have twenty percent of the Nation's energy resources on their lands. However, on average, tribal citizens spend more of their income on energy, have the highest percentage of homes without electricity, have the least control over quality of service, and are experiencing two to three times the national population growth. Northwest Treaty Tribes, along with the aforementioned impacts, are losing their treaty-reserved salmon resources to poor energy planning and policy.

Through the national Inter-Tribal Energy Network, draft legislation will be introduced that will help the nation address its energy shortages through development of tribal energy resources that are cost effective and offer opportunities for joint partnerships. This will also help tribes to serve tribal members with reliable energy and will foster economic development on tribal lands and promote sovereignty and self-sufficiency. The draft legislation envisions establishing an Office of Indian Energy in the Department of Energy. Critical to this recommendation is significant funding made available to the Office of Indian Energy for tribes to ascertain their energy resources and the best way to develop those resources. Also vital is the ability to bring resources on-line in an expedited fashion using interagency cooperation while protecting environmental quality.

The Northwest Tribal Energy Vision is premised on the idea of promotion of energy development that will serve Northwest energy needs while protecting the tribes' treaty-reserved resources. It allows for faster siting of projects with enhanced value on tribal lands; allows for distributed generation opportunities to meet rural loads; allows for opportunities for transmission siting on tribal lands; and addresses key fundamental concepts to protect the tribes' treaty rights. Energy policy and development must not continue to diminish the tribes' treaty-reserved resources. Energy policy and development should no longer excessively rely on the Columbia and Snake Rivers. Energy policy must get off the backs of salmon. Our treaty-reserved resources continue to be sacrificed for the sake of bad energy planning.

The current energy problem exists because of poor planning. Conservation and alternative energy development aggressively pursued in the 1980's was abandoned by the region and FERC in the 1990's. Poor planning has pushed salmon to the brink of extinction and will cause further environmental degradation. The salmon's precipitous decline has been known for decades and yet new energy development from sources off the river to meet demand has lagged. Substantial generation in California has been curtailed in order to drive up prices, but it could alleviate immediate pressures to run the Columbia River without regard to salmon if that generation was made available at a reasonable price. Power generation from the Columbia River hydrosystem is completely dependent upon the uncertainties of precipitation and runoff timing and is, as has been shown this year, not reliable. The lack of adequate precipitation is always a potential limiting factor and contingencies have not been developed to adequately mitigate for that risk.

GENERAL COMMENTS

Anadromous fish stocks continue to decline. Current reports estimate that Snake River salmonids will be extinct by the year 2016. Recent analysis by the National Marine Fisheries Service indicates the Mid-Columbia River stocks are declining at a rate greater than Snake River stocks. Most of the salmon stocks in the Columbia River Basin are listed under the Endangered Species Act (ESA) as threatened or endangered. More stocks are on their way to being listed under the ESA. Hundreds of dams and impoundments on the Columbia and Snake Rivers and tributaries have been the major factor in this decline. While hydropower has brought energy benefits to the country, there was very little foresight as to the environmental consequences

when the dams were built. Dams cause significant damage to aquatic and riparian environments by altering the physical, chemical and biological processes of river systems. We have learned much since these dams were first licensed. And now that dams are in the relicensing cycle, we must apply what we have learned to make the dams more suitable to what we now understand. Reducing cost and time in the licensing process must not make it more difficult for federal and state agencies to ensure that the managers of hydroelectric power facilities adequately mitigate for or minimize their impacts.

The Columbia River Treaty Tribes have greatly suffered under the effect of hydropower development and operations for many decades. Our lands have been diminished by hydropower. Our cultural resources have been diminished by hydropower. Our fisheries have been diminished by hydropower. Our very way of life has been diminished by hydropower. Our fishing bands have been displaced from their usual and accustomed fishing villages and struggle under very poor living conditions in extreme poverty. Socioeconomic studies funded by the Northwest Power Planning Council indicate that Columbia River tribal members have per capita incomes of 40-60% of non-tribal members, have rates of unemployment and poverty three to four times higher than non-tribal members and have mortality rates that are twice as high as non-tribal members. Much of this disparity in the tribal standard of living and health and well-being is due to the loss of the salmon resource. In effect, in less than 100 years much of the salmon wealth of the Columbia River has been conscientiously taken away from tribal people and transferred to non-tribal people in the form of hydroelectrical generation.

The Columbia River Treaty Tribes signed treaties in 1855 by which the United States agreed to secure the right to take fish at all usual and accustomed fishing stations. The fishing right means more than the right of Indians to hang a net in an empty river. The Columbia River Treaty Tribes have adopted a salmon recovery plan entitled *Wy-Kan-Ush-Mi Wa-Kish-Wit,* the *Spirit of the Salmon,* that comprehensively describes the actions that must be taken to restore fish and wildlife and make progress toward meeting the tribes' reserved Treaty rights. Reducing the cost and time of relicensing must not block the federal agencies that have the legal authority and trust responsibility to protect the tribes' treaty rights and resources.

Federal fish and wildlife agencies were given authority under the Federal Power Act (FPA) to use their expertise during dam licensing to protect the resources in their charge. Section 4(e) and 18 authority was given to the federal agencies precisely because they have the expertise to deal with the particular resources at issue and the ability to develop the specific environmental analysis necessary to protect that resource. The resource agencies' authority to protect the uses of reserved lands is an integral part of the FPA licensing scheme. While the FPA allowed licensing of private hydro facilities on federal lands, it also contemplated that the resource agencies would possess the necessary expertise to ensure that those facilities would not interfere with protection and use of those lands.

The mandatory authority of the resource agencies is crucial to the protection of federal lands and resources these agencies are charged with administering, including the protection of tribal trust resources consistent with established federal Indian law and policy. The federal agencies play a critical role in protecting Indian resources and ensuring adequate compensation for the use of tribal reservation lands. A threat to the federal agencies' authority to protect the Columbia River Treaty Tribes' treaty resource threatens our treaty rights, threatens tribal sovereignty, and undermines the agencies' ability to meet their federal trust responsibility. We rely on the Department of the Interior in its fiduciary role to protect our treaty resources in relicensing. We also rely on the fish and wildlife agencies to protect the resources in their charge. Reducing time and cost in relicensing must not deny Interior and the other agencies the ability to meet their trust obligation to protect our rights and resources. The tribes will consider reduction of time and cost that hinders the jurisdictional agencies to protect the treaty resources as an attack on our reserved rights.

The current attempts to expedite hydroelectric dam relicensing characterize the need as an energy issue and a need to improve the hydroelectric licensing process. However, we all know the issue is different and much broader. It is a natural resource issue and must be looked at as comprehensively as possible. The natural resource at stake will be locked up in new hydropower licenses for 30 to 50 or more years. If we don't get it right now, the natural resource may be gone before we have the opportunity to revisit the issue as witnessed in the coming Snake River extinctions. We have the moral and ethical duty to respond to this issue in the public interest to protect the natural resource. The Columbia River Treaty Tribes believe attempts in Congress to reduce the time and cost of relicensing will make protection of the natural resource and tribal concerns more difficult or impossible.

The Columbia and Snake Rivers and their tributaries as well as all navigable waters of the United States are public resources. A license to operate a hydroelectric project is a privilege, not an entitlement or a right. It is the responsibility of the federal government and its agencies, including FERC, to protect the public resource using the public interest standard articulated in the Federal Power Act and by the Supreme Court.[2] A license holder will make millions if not hundreds of millions of dollars over the term of the license. The Grant County Public Utility District in Washington State made $88 million last year alone from the operation of two dams on the Mid-Columbia. While it is important to insure that the licensing process is cost efficient and time conscious, it is inappropriate to do so at the expense of the public resource or public input. The Treaty Tribes depend on the federal agencies to insure the treaty resource will be recovered, restored and maintained throughout the term of each hydro license. It is the obligation of the license holder to maintain a healthy river system that supports the ecological processes necessary to sustain the treaty resource.

While license holders have complained about the length and cost of the licensing process, nearly all hydroprojects need upgrading to protect the public resource. Dams and reservoirs degrade water quality, reduce water quantity, displace fish and wildlife habitat, kill fish and wildlife, create barriers to migration, provide for the invasion of non-indigenous species and generally wreak havoc on the riverine ecosystem. These actions curtail the economic viability of each river by negatively altering the biological characteristics necessary to maintain a healthy river system and anadromous fish. Healthy rivers support sustainable, healthy economies with teeming wildlife, natural beauty and the promise of a high quality of life.

All dams need to be modernized to accommodate for damage caused to the public resource by hydro operations. We cannot continue to sacrifice our rivers for the sake of our insatiable desire for cheap hydropower. Our current energy problems are due to misguided energy policies that do not take into account the environmental externalities of the dams. A short-term fix to increase hydroelectric power generation now will have long-term environmental consequences that will last for generations. As sovereigns, we must distinguish between managing for these short-term inconveniences and preventing the realization of the true potential for long-term losses. We need a long-term comprehensive energy policy that protects our environment through the full development of conservation measures and renewable energy sources. The Northwest Tribal Energy Vision will accomplish the long-term energy needs of our nation while protecting the environmental heritage of future generations. Free market deregulation will not address environmental externalities. Reducing the time and cost of licensing must not come at the cost of the environment.

SPECIFIC COMMENTS

The question has been posed: how can the cost and length of hydroelectric relicensing be reduced? Relicensing is a major undertaking that needs to be afforded maximum effort by the license holder and maximum input from federal agencies, states, tribes and the public. There are a number of aspects concerning relicensing that could be changed to afford a more complete and comprehensive process while likely reducing time and cost.

Currently, license holders are often reticent to perform analysis and studies concerning the impacts of dams on the environment and fish and wildlife due to cost and because the analysis will show the need to modernize the dam at the owner's expense. These studies are necessary to provide a complete picture of the present and future impacts to the public resource. License holders create delay while refusing to do the necessary analysis or by providing insufficient information for agencies to develop terms and conditions in a timely and complete manner and often must be persuaded through costly and time consuming legal action. There is little incentive for the license holder to do the right thing by performing environmental analysis early in the process. FERC should set specific standards and timelines for study designs and implementation and enforce them, including those studies necessary for other agencies to develop their conditions, prescriptions, and recommendations. This will ensure that dam owners do not prevent or delay effective license conditions by not providing needed information.

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[2] *Udall v. Federal Power Commission,* 387 U.S. 428 (1967). "The test is whether the project will be in the public interest. And that determination can be made only after an exploration of all issues relevant to the 'public interest,' including future power demand and supply, alternate sources of power, the public interest in preserving reaches of wild rivers and wilderness areas, the preservation of anadromous fish for commercial and recreational purposes, and the protection of wildlife." Udall, at 450.

Additionally, delay works to the benefit of the license holder because the termination of the original license period is followed by annual licenses with the same terms as the original license. The environment and invaluable natural resources continue to bear the burden in these cases while the license holder is protected indefinitely. By allowing annual licenses, the United States grants the license holder a benefit at the tribes', the public's and the environment's expense. As fiduciary to the tribes and the public trust, this is unacceptable policy and must change. To eliminate this incentive, FERC should set interim conditions to protect natural resources on annual licenses in situations where applicants have deliberately failed to complete studies in a timely manner.

Reducing cost and time in relicensing must not reduce environmental protection. Above all, environmental needs as discerned by the mandatory conditions of the federal agencies must form a floor above which FERC may balance the need for power. The tribes' treaty rights and the public resource must be protected first. The jurisdictional federal agencies with mandatory conditioning authority have the expertise necessary and the mandate to protect the public resource. The mandatory conditioning authority of the jurisdictional federal agencies must be preserved to protect the tribes' treaty rights, tribal lands, and the public resources. A May, 2000 GAO report on relicensing concluded that FERC does not have sufficient information to identify which reforms are necessary either legislatively or administratively to the relicensing process. Additionally, the report found FERC does not have sufficient data to evaluate the effectiveness of recent reforms. Recently, FERC compiled a list of actions it would be taking to increase electric generation in the Western United States.[3] Based upon this list of actions, on June 1, 2001, FERC issued an *Order Authorizing Temporary Increase in Generation in Light of Electricity Exigencies in Western United States.* The result of this order was to suspend an existing settlement agreement between Grant County Public Utility District and the Mid-Columbia Joint Fisheries Parties[4] that allowed spill protection for severely depressed salmon stocks in the Mid-Columbia River in Washington State. This decision was not based on good science or on input received from tribes and federal and state resource agencies. FERC's decision was indicative of the problems outlined in the GAO report. Meanwhile, numerous parties have been engaged over the last year in the Electric Power Research Institute effort to develop administrative solutions to this problem and an Interagency Task Force also developed solutions to the relicensing process. These solutions should be given an opportunity to work. This is the right direction to determine the best path to reform.

In May 2001, FERC released a 603 Report, which responded to Congress' requirement "to undertake a comprehensive review of policies, procedures and regulations for the licensing of hydroprojects to determine how to reduce the cost and time of obtaining a license." The Report was a product of the Commission staff, not the Commission. We note that the Commission itself, with its authorities, did not endorse the Report. While not inclusive of all the Report recommendations, we find the following as serious shortcomings that reverse resource protection requirements called for in the *Electric Consumer Protection Act of 1986* and the *Clean Water Act.* The following Report recommendations would compromise environmental protection and treaty-reserved resources and are unacceptable.

- The Report recommends "one stop shopping" at FERC for all federal license authorizations. This would allow FERC to reject mandatory license conditioning if they were inconsistent with FERC's public interest determination. Recent attempts to change the Federal Power Act's public interest standard goes against decades of policy and administrative development as well as previously noted Supreme Court rulings. This would override mandatory license conditioning for natural resource protection by the Department of Interior and the Bureau of Indian Affairs on behalf of the tribes.
- The Report recommends that the Departments with mandatory license conditioning consider the full range of public interest considerations when conditioning the license for resource protection. This would require the Departments to "balance" resource protection with project economic gains. This is redundant as FERC is already charged to balance project economics with resource protection, with the floor established by the Departments.

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[3] FERC issued these actions in *Removing Obstacles to Increased Electric Generation and Natural Gas Supply in the Western United States.*

[4] The Joint Fisheries Parties consist of sovereign entities that have mandated authorities for protection of fish and wildlife and include the Yakama Nation, the Confederated Tribes of the Umatilla Indian Reservation, the Colville Confederated Tribes, the Washington Department of Fish and Wildlife, NMFS and the USFWS.

- The Report recommends amending the Clean Water Act in license proceedings. Specifically, water quality certification would be limited to physical and chemical parameters—not biological parameters. Instream flows would be given non-mandatory 10(j) status. State and tribal water quality authorities would no longer be mandatory.
- The Report criticizes the recently developed definition of a fishway and proposed fishway policy developed by the NMFS and USFWS. The Report recommendations would restrict the agencies' fishway definition which would diminish an applicant's obligation to provide adequate fish passage.

Hydroelectric projects cannot and will not last forever. A license holder must not be allowed to walk away from a hydroelectric project when removal of the project is necessary. FERC must require each applicant submit a plan that details how removal will be accomplished if such an event is required. FERC must also require the applicant create a fund to pay for such removal. This process is required for nuclear power projects. Hydroelectric projects have caused significant environmental damage that should not be left to the federal taxpayer to bear.

Where the Alternative Licensing Procedure (ALP) is one possibility for early input from interested parties, it is important to stress that no collaborative process is successful without meaningful participation by concerned parties. As relicensing is a long-term process requiring intensive resource commitment, it is necessary for the applicant to provide funding for tribes and other groups to fully participate in order to expedite the process with full input. Otherwise, inadequate input or input only from resource rich participants can bias the process. This is not a satisfactory outcome and should be changed. FERC should require funding for participation by tribes and public interest groups either by the applicant or by FERC. Early participation will lead to a faster relicensing process.

Where the Traditional Licensing Process is more appropriate, FERC must perform environmental analysis in a timely manner. Final decisions and rehearing requests must be expedited where delay would further harm the environment. Deadlines must be consistent and adhered to within a reasonable amount of time. Mandatory conditioning agencies should set and follow strict guidelines and timelines with periodic opportunities for review. Where a license applicant is the cause of delay, the federal fish and wildlife agencies, states and tribes should document such delay and be afforded further time to develop conditions.

As a federal bureaucracy, FERC could make institutional changes to expedite relicensing proceedings. Currently, FERC staff is assigned to cover project relicensing proceedings but is assigned to different issues on the same project. Because of exparte rules, these staff cannot confer on issues. For example, one staff member is assigned on the Rocky Reach Hydroelectric Project relicensing proceeding in Washington State, while another staff member is assigned to the Mid-Columbia Habitat Conservation Plan process, which directly involves Rocky Reach relicensing. The result is confusion among FERC staff on complementary issues and prolonging decisions on necessary studies and procedures.

FERC could significantly reduce license amendment and licensing delays by expediting adoption of settlement agreements between applicants, tribes, state and federal resource agencies and NGOs into license terms and conditions. For example, FERC has delayed acceptance of the Condit Hydro Project Settlement Agreement for twenty months.[5] FERC should establish firm timelines in reviewing, conducting applicable environmental analyses, and approving consensus settlement agreements to avoid delays in license modification and/or licensing proceedings.

Finally, federal energy policy has taken a back seat to the desire of market driven forces. As mentioned, the market place does not deal well with environmental externalities. Our current west coast energy problems are due in large part to misguided energy policies. The federal government must develop long-term solutions that steer us away from environmental degradation and unilateral dependence on river generated power. We need full development of conservation measures and renewable energy sources. Energy policy must be comprehensive and forward looking, not rooted in dependence on hydroelectric power that has caused degradation to our public resources at our expense and that of future generations.

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[5] After years of negotiation, a comprehensive settlement agreement between the applicant, PacifiCorp, the Yakama Nation, CRITFC and several federal and state resource agencies and environmental groups was submitted to FERC for approval in October, 1999. In May 2001, FERC held a public meeting to discuss the settlement agreement, but still had not accepted the settlement agreement, nor had FERC begun environmental review on the agreement. The status of the agreement remains uncertain within the FERC and has left the applicant and intervenors guessing as to what action FERC will take. In the meantime, salmon restoration for an entire river basin remains on hold.

CONCLUSION

In conclusion, I ask that you work closely with the tribes to insure their treaty rights are protected in this and all processes where FERC has jurisdiction. There is an existing statutory framework for hydroelectric dam relicensing that is sound, and workable. Wherever shortcomings may exist in the current process, solutions should be crafted administratively and with substantial public input. The federal government must protect the treaty tribes and public resources of our waterways. To do anything less would gravely dishonor the promises that the United States Government made with the tribes over 150 years ago. Further degradation is unacceptable and will be vigorously opposed by the treaty tribes.

PREPARED STATEMENT OF HON. ANN VENEMAN, SECRETARY, U.S. DEPARTMENT OF AGRICULTURE

Mr. Chairman and Members of the Subcommittee: Thank you for the opportunity to comment on hydropower and the hydropower licensing process.

As stated in the May 2001, *National Energy Policy: Report of the National Energy Policy Development Group*, "Hydropower has significant environmental benefits. It is a form of low-cost electricity generation that produces no emissions, and it will continue to be an important source of U.S. energy for the future. Given the potential impacts on fish and wildlife, however, it is important to efficiently and effectively integrate national interests in both natural resource preservation and environmental protection with energy needs".

The Department of Agriculture (USDA) and the Forest Service (FS) recognize the increasing national demand for energy and are committed to assisting in the development of solutions to increase energy production while protecting national forest resources. We have made the licensing of hydropower projects on National Forest System (NFS) lands a very high priority.

Of the approximately 200 federally licensed projects due for relicensing in the next ten years, more than half are partially or wholly within national forests, while most of the remainder lie in watersheds that contain national forests. For projects on national forests, the Forest Service must consider conditions in hydropower licenses "necessary for the adequate protection and utilization of—the national forest (Section 4(e) Federal Power Act (FPA)), and Wild and Scenic rivers (Section 7, FPA). In addition, all federal agencies have a trust responsibility to Indian tribes. If tribal lands or resources are affected by hydropower projects, license conditions may also be required.

We recognize that hydroelectric energy production is a valid use of NFS lands. Through careful coordination with Indian tribes, states, and other affected parties, hydroelectric facilities can be operated to mitigate potential adverse impacts upon water quality, fisheries, and wildlife resources while meeting important public needs and obligations. Also in many cases, hydroelectric development enhances recreational opportunities such as fishing, boating, and whitewater rafting.

Since hydropower licenses are for terms of 30 to 50 years, it is important to consider necessary and appropriate conditions at the time of licensing to insure that appropriate resource management measures are included in the license. The Forest Service is very active in these licensings, working with the licensees, Indian tribes, federal and state resource agencies, the Federal Energy Regulatory Commission (FERC), and other users of NFS lands in a collaborative and productive manner.

We have created national and regional Hydropower Assistance Teams that facilitate FS involvement with licensees, Indian tribes, national forest stakeholders, and other agencies. The Forest Service is determined to effectively participate in both alternative and traditional licensings.

In addition, the USDA and the FS, along with other federal agencies are taking an active role in a number of ongoing national processes that are aimed at improving hydropower licensing, industry relationships, protecting, and enhancing our natural resources. National processes include the Interagency Task Force and its Federal Advisory Committee, as well as the hydropower-industry sponsored Electric Power Research Institute's National Review Group. We have met with various members of the hydropower industry and attended industry conferences around the country. During this year's review of our regional hydropower programs, the FS invited licensees and other stakeholders to participate and comment on the Forest Service's performance in hydropower licensing.

In the interest of good communication and improved hydropower licensing, the FS ensures at least three opportunities to comment on its license terms and conditions before such conditions are finalized. The first opportunity is provided through the FERC licensing process when parties to the FERC licensing can comment upon the

Forest Service preliminary conditions in response to the license application. The second opportunity for comments to FERC is upon draft conditions in response to FERC's NEPA process. The third opportunity for comment is offered to the general public in the established Forest Service NEPA process.

We believe that early planning and innovative approaches will insure that the hydroelectric licensing process will provide both energy and appropriate resource management on our national forests.

PREPARED STATEMENT OF WILLIAM T. HOGARTH, ACTING ASSISTANT ADMINISTRATOR FOR FISHERIES, OFFICE OF PROTECTED RESOURCES, NATIONAL MARINE FISHERIES SERVICE, U.S. DEPARTMENT OF COMMERCE

Mr. Chairman and Members of the Subcommittee, thank you for inviting me to submit testimony for the record on hydro licensing as it is related to fishery management. I am William T. Hogarth, Acting Assistant Administrator for Fisheries in the National Oceanic and Atmospheric Administration/Department of Commerce.

I would like to thank the Subcommittee for the opportunity to address NMFS's role in the hydroelectric licensing process. Hydropower is a clean, domestic, and renewable source of electricity. The Administration seeks to increase electricity generation from hydropower plants. NMFS is committed to accomplishing these gains in an environmentally sound manner.

IMPACTS OF HYDROPOWER ON FISHERIES

Hydroelectric dam construction and operation can have significant impacts on anadromous fish species, including Pacific and Atlantic salmon, shortnose sturgeon, and American shad. Changes in habitat, fish passage, water quality, and downstream flows are the biggest direct effects.

Fortunately, hydroelectric dam impacts can often be significantly reduced through operational and structural modifications. Upstream and downstream fish passage can be improved with fish passage facilities such as fish ladders, fish screens, and trap and transport operations. Temperature impacts can be reduced through releasing cool water when it is needed, and habitat and migratory rates can be improved with modified stream flows.

NMFS ROLE IN HYDROPOWER RELICENSING

Several statutory mandates provide the Department of Commerce (DOC) with authority to protect anadromous fish affected by Federal Energy Regulatory Commission (FERC) licensed hydroelectric projects. In DOC, these responsibilities are delegated to NMFS:

Federal Power Act

- Section 18 (16 USC 811)—The DOC and the Department of the Interior have authority to require fish passage at hydroelectric projects.
- Section 10(j)(16 USC 803(j))—NMFS, Fish and Wildlife Service (FWS), and state resource agencies can provide recommendations to protect, mitigate damages to, and enhance fish and wildlife, including related spawning grounds and habitat.
- Section 10(a)(16 USC 803(a))—Resource agencies can provide recommendations for ensuring that a project is best adapted to comprehensive plans for developmental and non-developmental resources.
- Small Hydropower and Conduit Exemptions 16 USC 823(a) and 16 USC 2705—NMFS, FWS, and state agencies can provide conditions to prevent loss of or damages to fish and wildlife.
- Indian trust responsibilities, as outlined in various laws.

Endangered Species Act (ESA)

Under Section 7(a)(2) of the ESA (16 USC 1536 (a)(2)), if their action may affect listed species, federal agencies are required to consult with FWS and/or NMFS, as appropriate, to ensure that any federal action is not likely to jeopardize the continued existence of any threatened or endangered species, or adversely modify critical habitat designated for those species.

Magnuson-Stevens Fishery Conservation and Management Act

Federal action agencies must consult with NMFS if their actions may adversely affect essential fish habitat; NMFS will provide EFH conservation recommendations.

Fish and Wildlife Coordination Act

Federal action agencies must consult with NMFS and FWS if their action modifies a water body; NMFS and FWS provide recommendations to prevent adverse impacts on fish and wildlife.

National Environmental Policy Act

NMFS, other resource agencies, and other stakeholders may provide comments on FERC Environmental Assessments and Environmental Impact Statements prepared for hydroelectric project licensing decisions.

ADMINISTRATIVE REFORMS

NMFS has been working with FERC and the other federal resource agencies to streamline and improve the hydroelectric facility licensing process. These efforts include participating in the Interagency Task Force to Improve Hydropower Licensing (ITF), developing a proposed Interagency Policy on Section 18 Fishway Prescriptions, and participating in the National Review Group of the Electrical Power Research Institute.

INTERAGENCY TASK FORCE (ITF)

In March 1998, NMFS, other resource agencies, and FERC established the ITF in order to adminstratively reform the licensing process. The ITF efforts culminated in the development of seven reports containing recommendations to improve and streamline agency licensing practices. These reports can be viewed at http://www.doi.gov/hydro. The reports address such issues as: facilitating and streamlining noticing procedures; coordinating the NEPA review process; improving the process by which studies are identified and conducted; preparing trackable and enforceable license conditions pursuant to Section 401 of the Clean Water Act; and coordinating and streamlining FERC licensing with the Endangered Species Act Section 7 consultation process.

The ITF implemented a two-phased outreach strategy through interagency meetings in several locations across the country in order to ensure integration of the ITF work products into agency licensing practices nationwide. Phase I focused on making agency regional directors and administrators aware of our commitments. Phase II involved meetings throughout the country with regional and field level staff, and was completed in May, 2001.

INTERAGENCY POLICY ON SECTION 18 FISHWAY PRESCRIPTIONS

On December 22, 2000, the Departments of the Interior and Commerce published for comment a proposed Fishway policy that provides a definition of fishways and agency guidance on developing fishway prescriptions. The proposed policy is currently undergoing revision based on comments received during the public comment period.

MAY, 2001 NATIONAL ENERGY POLICY, AND EXECUTIVE ORDERS 13211 AND 13212

The new National Energy Policy provides recommendations to the White House and Congress and addresses numerous issues that relate to NMFS's trust resources, including hydropower licensing. Specifically, the policy states that "the President encourages the Federal Energy Regulatory Commission and directs federal resource agencies to make the licensing process more clear and efficient, while preserving environmental goals." Three specific recommendations were included: (1) support administrative and legislative reforms; (2) direct federal resource agencies to reach interagency agreement on conflicting mandatory license conditions before they are submitted to FERC; and (3) encourage FERC to adopt appropriate deadlines for its own actions. NMFS agrees that the process can be improved, and we have been working to address all of these issues in the administrative reform efforts described above.

On May 18, 2001, President Bush signed two Executive Orders that implement recommendations from the National Energy Policy. Executive Order 13211 requires federal agencies to evaluate if a new regulation will adversely impact the current energy supply, distribution, or use. It also requires agencies to include reasonable alternatives to the regulation if the regulation will adversely impact the current energy situation.

Executive Order 13212 requires all executive departments and agencies to take appropriate actions to expedite projects that will increase the production, transmission, or conservation of energy, to the extent consistent with applicable law. Actions should be taken to expedite energy-related projects while maintaining safety,

public health, and environmental protections. An Energy Task Force with a DOC representative has been established to monitor and assist the agencies in implementing this Executive Order. The process is just getting underway, but NMFS is committed to working closely with the Energy Task Force to implement its objectives. NMFS is prioritizing available staff resources to the extent possible in order to improve interagency coordination in critical geographic areas.

For example, NMFS contacted the California Energy Commission (CEC) in order to explore ways to address the Governor of California's Executive Order D-26-01, which directed the California Energy Commission (CEC) to expedite the permitting of peaking and renewable powerplants. Through this developing partnership, NMFS and the CEC are crafting strategies for expediting environmental review. Measures discussed to date include: 1) packaging or bundling proposed projects to streamline cumulative impacts analysis and to reduce redundancy and paper work; 2) mitigation strategies for bundled projects, such as mitigation banking, conservation easements, and off-site habitat restoration; 3) improved information sharing procedures; 4) increased staffing, including assigning a single NMFS contact or liaison who would be available to the applicants, governmental agencies, NGOs, and the public; 5) making resources available to hire consultants to conduct specialized analyses such as computer modeling; and 6) measures to ensure an open and public process without impacting critical timelines. To accomplish these tasks NMFS has assembled an interdisciplinary task team and has jointly scheduled regular meetings with the CEC that include the U.S. Fish and Wildlife Service, U.S. Bureau of Land Management, Environmental Protection Agency, Western Area Power Administration, and the U.S. Forest Service. Public workshops have also been held.

Currently, the NMFS Southwest Region is consulting with the CEC concerning the Potrero, Huntington Beach, Morro Bay, and El Secundo thermal power plants. NMFS is also pursuing ongoing hydropower relicensing activities on the Upper American River, Oroville Project, Stanislaus multi-project collaborative, the Klamath Relicensing, the Big Creek Complex multi-project relicensing and the Poe relicensing.

In the Pacific Northwest, the NMFS Northwest Regional Administrator is working closely with her counterparts at the Bonneville Power Administration, Bureau of Reclamation, and U.S. Army Corps of Engineers to ensure that the Federal Columbia River Power System is operated in a manner that maximizes available energy while protecting threatened and endangered salmon species. The NMFS Northwest Region is also working closely with state and local energy suppliers, making real-time decisions that maximize energy production while minimizing environmental impacts for non-federal hydroelectric projects throughout the region during this year's historic drought.

CONCLUSION

NMFS is working to ensure that anadromous fish resources receive necessary protections, including those provided by the FPA. At the same time we are working to ensure a reliable energy supply and to improve administrative procedures.

The FPA requires FERC to make licensing decisions in the public interest, and to balance the Nation's need for hydropower with the need to protect important natural resources. We will continue our collaborative efforts with FERC, the hydropower industry, environmental organizations, tribes, and other stakeholders to ensure that the hydropower licensing process provides a sound basis for the balancing of societal priorities, including the need for healthy habitats and productive fisheries. We will also continue our efforts to make administrative changes that will make the process work more smoothly.

Thank you for the opportunity to provide testimony on these important issues. For the record, we are also providing a copy of our February 1, 2001 letter to FERC commenting on their report submitted to Congress pursuant to Section 603 of the Energy Act of 2000 (Public Law No. 106-469).

FEDERAL ENERGY REGULATORY COMMISSION
August 3, 2001

The Honorable JOE BARTON
Chairman
Subcommittee on Energy and Air Quality
Committee on Energy and Commerce
U.S. House of Representatives
Washington, D.C. 20515

DEAR CHAIRMAN BARTON: I was pleased to have had the opportunity to testify at the House Energy and Air Quality Subcommittee's June 27, 2001 hearing on hydroelectric relicensing and nuclear energy.

Attached you will find my written responses to the questions that were asked by you, and Representatives John Dingell and John Shadegg at the Subcommittee hearing, to be included in the hearing record. Should you need additional information, please do not hesitate to contact me.

Sincerely,

CURT L. HÉBERT, JR.
Chairman

Enclosure

cc: The Honorable W.J. "Billy" Tauzin
The Honorable John D. Dingell
The Honorable Rick Boucher
The Honorable John B. Shadegg

RESPONSES TO QUESTIONS FROM CHAIRMAN BARTON, AND REPRESENTATIVES DINGELL AND SHADEGG

Question. Encourage the interagency working group to prepare its conclusions for review and incorporation into our bill.

Answer #1: Chairman Barton requested that I and Federal Energy Regulatory Commission (FERC) staff encourage the Interagency Hydropower Committee (IHC) to provide language for consideration in the Energy and Commerce Committee's energy legislation, the Energy Advancement and Conservation Act of 2001.

As explained in my testimony, the IHC was recently established to follow up on the work of the Interagency Task Force (ITF). The IHC did hold its first meeting on July 24, 2001, after the Subcommittee's June 27 hearing. Currently, members of the IHC include senior officials from FERC, the Departments of the Interior, Commerce, and Agriculture. The purpose of the IHC is twofold. First, the IHC would monitor the recommendations of its predecessor, the ITF, on improving the hydroelectric licensing process. Second, the IHC would address issues associated with hydroelectric licensing that remain or that may arise later.

The July 24 IHC meeting was strictly organizational in nature. At the meeting, representatives agreed to develop a charter, appoint co-chairs, and create ad hoc committees to scope out the issues for future discussions. Consequently, the IHC has no recommendations to include in the energy legislation, since passed by the House of Representatives at this time. However, we would be willing to provide the Committee with suggested legislative improvements, if requested, in the future.

Question. Have any licenses been surrendered since FERC began relicensing projects in the class of 1993? How many?

Answer #2: No projects have been surrendered for which the FERC has issued new licenses since we began processing the applications for the Class of 1993 group of relicenses.

Question. How many times has the Commission during its activities taken the necessary steps to reopen an existing license to assure that fish and wildlife protection activities were taken by the licensee during the pendency of the one year extension?

Answer #3: Reopener articles reserve to the Commission the authority to require licensees to, among other things, develop recreational facilities, protect and conserve fish and wildlife resources, and prevent water quality degradation. Almost 50 reopener proceedings have been initiated over the past decade. These requests include petitions to require the construction of recreational facilities, modify reservoir levels, provide fish passage facilities, release minium flow for protection of aquatic resources, and to address threatened and endangered species issues. Requests to reopen a license typically originate from state and Federal fish and wildlife agencies or private citizen groups.

An annual license provides the Commission with no less and no more authority to impose new conditions than did the prior license, inasmuch as the annual license

is required, by section 15(a) of the FPA, to have the same terms as the prior license. It therefore follows that, with respect to addressing changing environmental conditions and emerging environmental concerns, an annual license holds no special significance. The very purpose of a reservation of authority, sometimes referred to as a "reopener clause," is to enable the Commission to deal—at any time during the license term—with environmental concerns that may have been unforeseen when the project was originally licensed.

Attached is a table that identifies the individual reopener proceedings initiated by the Commission over the past decade. For the most part, these requests have not been processed by the Commission when a relicensing proceeding is pending and annual licenses were being issued. One reason for this is that resource agencies and citizen groups are engaged in the licensing process and look to this process as a means of addressing their particular environmental concern. Of the requests received to date, all of the reopener requests have been received during the term of the license in advance of the license expiration date with the exception of the Platte River and the Clyde River projects.

In the former case, the Commission was asked to include in the annual licenses for the Kingsley Dam Project (P-1417) and North Platte/Keystone Diversion Project (P-1835) conditions to protect the endangered whooping crane and other listed species. The Commission concluded that without interim measures, project operation would continue to adversely affect Platte River habitat and impede the recovery of the listed species. Since only the North Platte/Keystone Project had reopener authority, the Commission required the licensee for North Platte/Keystone Project to release instream flows and to develop nesting habitat to protect listed species and asked the licensee for the Kingsley Dam Project to voluntarily implement the measures.

While the Commission was processing the relicensing of the Clyde River Project (P-2306) and after two years of operating under annual licenses, the Vermont Agency for Natural Resources (VANR), requested that the Commission reopen the license to provide for the removal of the Newport No. 11 Dam along with stabilization of the adjacent embankment. The Newport No. 11 Dam had been breached by high river flows causing the adjacent embankment to collapse. Ultimately, the licensee agreed to remove the dam and stabilize the embankment to improve downstream water quality and provide upstream passage for landlocked Atlantic salmon.

In the majority of the cases processed to date, licensees generally agree to modify the project structures or operation to accommodate the request in full or in part and request an amendment of a license to accomplish the requested change. In three different cases, licensees have opposed, at least initially, implementation of environmental protection measures. In these cases, a formal proceeding was initiated. In two cases, the Commission required the licensees for the Comtu Falls (P-7888) and New York State Dam (P-7481) Projects to operate downstream fish passage facilities to ensure the protection of anadromous fish. In another case involving the Lower Mokelumne Project (P-2916), after a formal proceeding was initiated and Commission staff had prepared a Final Environmental Impact Statement, the licensee reached a settlement agreement with the resources agencies and requested a license amendment that included salmon protection measures.

Reopener Proceedings Initiated by the Commission over the last Decade

PROJECT NO.	PROJECT NAME	ISSUE	STATUS/ COMPLETION DATE	LICENSE EXPIRATION DATE
P-309	PINEY	MINIMUM FLOWS	12/5/96	10/12/02
P-935	MERWIN	ENDANGERED SPECIES	PENDING	4/30/06
P-1403	NARROWS	ENDANGERED SPECIES	PENDING	1/31/23
P-1494	PENSACOLA HYDROPOWER PROJECT	WATER QUALITY	7/8/96	3/31/22
P-1835	N. PLATTE/KEYSTONE DIV. (PLATTE RIVER)	ENDANGERED SPECIES	2/14/90*	6/15/87
P-1971	HELLS CANYON	ENDANGERED SPECIES	PENDING	7/31/05
P-2071	YALE	ENDANGERED SPECIES	PENDING	4/30/01
P-2111	SWIFT NO. 1	ENDANGERED SPECIES	PENDING	4/30/06
P-2114	PRIEST RAPIDS	ENDANGERED SPECIES	11/9/98	10/31/05
P-2150	BAKER RIVER	ENDANGERED SPECIES	PENDING	4/30/06
P-2157	HENRY M. JACKSON	ENDANGERED SPECIES	PENDING	5/31/11
P-2179	NEW EXCHEQUER	MINIMUM FLOW	S3/5/01	2/28/14
P-2183	MARKHAM FERRY	RECREATIONAL FACILITY	7/21/98	5/31/05
P-2197	YADKIN	RESERVOIR ELEVATIONS	7/9/96	4/30/08
P-2213	SWIFT NO. 2	ENDANGERED SPECIES	PENDING	4/30/06

Reopener Proceedings Initiated by the Commission over the last Decade—Continued

PROJECT NO.	PROJECT NAME	ISSUE	STATUS/ COMPLETION DATE	LICENSE EXPIRATION DATE
P-2242	CARMEN SMITH	ENDANGERED SPECIES	PENDING	11/30/08
P-2246	YUBA RIVER	ENDANGERED SPECIES	PENDING	4/30/16
P-2266	YUBA BEAR RIVER	ENDANGERED SPECIES	PENDING	4/30/13
P-2299	NEW DON PEDRO PROJECT	FLOOD CONTROL	12/23/99	4/30/16
P-2304	BLUE RIDGE	ENDANGERED SPECIES	5/5/98	12/31/12
P-2305	TOLEDO BEND	RESERVOIR LEVELS	PENDING	9/30/13
P-2306	CLYDE RIVER PROJECT	FISH PASSAGE	7/26/96	12/31/93
P-2496	LEABURG/WALTERVILLE	ENDANGERED SPECIES	PENDING	2/28/37
P-2543	MILLTOWN	ENDANGERED SPECIES	PENDING	12/31/06
P-2580	TIPPY	WETLANDS	5/1/98	6/30/34
P-2597	FALLS VILLAGE	MINIMUM FLOWS	7/19/96	8/31/01
P-2597	FALLS VILLAGE	MINIMUM FLOWS	5/9/97	8/31/01
P-2599	HODENPYL	WETLANDS	5/1/98	6/30/34
P-2631	WORONOCO	FISH PASSAGE	1/12/98	9/1/01
P-2833	COWLITZ FALLS	ENDANGERED SPECIES	PENDING	5/31/36
P-2894	BLACK BROOK	MINIMUM FLOWS	7/9/96	12/31/20
P-2916	LOWER MOKELUMNE	MINIMUM FLOW/WATER QUALITY	11/27/98	3/31/31
P-3021	ALLEGHENY RIVER L&D NOS. 8&9	RESERVOIR ELEVATION	8/19/99	2/28/35
P-3109	BLUE RIVER	ENDANGERED SPECIES	PENDING	10/31/39
P-3131	BROCKWAYS MILLS HYDRO PROJECT	FISH PASSAGE	9/26/96	12/31/32
P-3494	ALLEGHENY RIVER L & D NO. 6	RESERVOIR LEVELS	PENDING	6/30/34
P-4718	COCHECO FALLS	FISH PASSAGE	PENDING	12/31/22
P-6066	DERBY DAM	FISH PASSAGE	PENDING	2/28/26
P-6780	DEADWOOD CREEK	ENDANGERED SPECIES	PENDING	8/31/38
P-7481	NEW YORK STATE DAM	FISH PASSAGE	7/13/01	9/30/37
P-7888	COMPTU FALLS	FISH PASSAGE	6/1/95	6/30/26
P-9195	STANLEY CANYON	MINIMUM FLOWS	9/15/97	8/31/36
P-9648	FELLOWS DAM	FISH PASSAGE	6/4/98	6/30/26
P-9649	LOVEJOY TOOL COMPANY	FISH PASSAGE	6/4/98	6/30/26
P-9650	GILMAN DAM	FISH PASSAGE	6/4/98	6/30/26
P-10898	SWEETWATER PROJECT	FISH PASSAGE	11/4/97	2/28/31

*License was amended after the license expired to prevent irreversible environmental damage to the whooping crane and other listed endangered species.

Question. How many dams has the FERC licensed new since 1978 on a year-to-year basis?

Answer #4: In the context of the discussion on the issuance of annual licenses, we are providing the number of licensed projects with expiration dates from January 1, 1978, to present for which the FERC issued annual licenses so that they could continue operating until the Commission took final action on their application for new licenses (relicenses). The Commission issued 251 annual licenses during this period.

CY Annual License Issued	Number Issued
1978	3
1979	3
1980	5
1981	1
1982	1
1983	2
1984	8
1985	2
1986	6
1987	0
1988	10
1989	4
1990	1
1991	5
1992	2
1993	12
1994	123

CY Annual License Issued	Number Issued
1995	3
1996	7
1997	5
1998	8
1999	6
2000	21
2001	13

Question. How many new dams, large dams, have been licensed by FERC since 1990? Also, between 1980 to 1990?

Answer #5: No projects have been licensed that would have authorized construction of 32.8 foot high or higher (see 18 CFR Part 12) dams since 1990. Further, there are eight licenses that involved construction of high dams licensed between 1980 and 1986 and none between 1987 and 1990.

Question. Clarify the water quality certification process and the burden on the states in light of the questioning that occurred before.

Answer #6: Congressman Shadegg asked if I needed to clarify the water quality certification process in light of Congressman Dingell's earlier questioning. Congressman Dingell had inquired about the Commission's difficulty in implementing the Clean Water Act, given that hydropower projects do not contribute to river pollution, with the exception of perhaps affecting water temperature. The issue is the broad scope of the state's authority to require measures beyond those needed to protect the physical characteristics of water quality.

As discussed in my testimony, two court decisions have significantly changed the nature of water quality certificate conditions. In PUD No. 1 of Jefferson County v. Washington Department of Ecology, 511 U.S. 700 (1994) (Jefferson County), the Supreme Court held that a State acting under the CWA could regulate not only water quality, such as the physical and chemical composition of the water, but water quantity as well, i.e., the amount of water released by a project, for State-designated water uses (fishing, boating, etc.). In American Rivers [I] v. FERC, 129 F.3d 99 (2nd Cir. 1997), the Court held that the Commission lacked authority to determine whether conditions submitted by State agencies pursuant to Section 401 of the Clean Water Act were beyond the scope of that section.

The Commission must include those conditions in the license and they cannot be evaluated as part of this Commission's comprehensive development responsibilities. States do not have an obligation to take into account the benefits of hydropower or other competing interests.

As a result of these court decisions, many of the recommendations go beyond physical and chemical characteristics of the water (e.g., water temperature, dissolved oxygen, clarity) and deal with designated uses (fishing, swimming, fish passage, recreation, instream flow releases). The number of recommendations dealing with designated uses has more than doubled from 1992 to 1999. This has led to increased costs. Most troublesome are the conditions controlling minimum instream flows, which have a direct impact on a project's power generation and economic viability. In a sample of 24 projects, the median additional cost related to controlling instream flows beyond those recommended by staff was $27,000, excluding one project with an additional cost of $290,000.

Aside from cost, delay is also a concern. Untimely issuance of state water quality certifications is a significant factor in most delayed license proceedings and is the most common cause of long-standing delays. Of 129 currently pending licensing cases, 52 (40 percent) are currently held up by certification issues.