

MTU. The proposed action is in accordance with the licensee's application for amendment dated February 2, 1995.

The Need for the Proposed Action

NRC approval of this TS change, as applied to the Unit 1, Cycle 9, and Unit 2, Cycle 8, will establish a new, higher fuel burnup rod-average limit of 45 MWD/MTU and will permit the licensee to continue to operate the plant through the end of each of these specified cycles, exceeding the current fuel burnup limit of 40 GWD/MTU, without affecting the safe operation of each reactor.

Environmental Impacts of the Proposed Action

The Commission completed its evaluation of the proposed action and the above referenced topical report and found it to be acceptable. In addition the TS changes implementing the higher fuel burnup limit have also been found to be acceptable. The safety considerations associated with extended irradiation of nuclear fuel have been evaluated by the NRC staff and the staff has concluded that such changes would not adversely affect plant safety. The proposed changes have no adverse effect on the probability of any accident. The increased burnup may slightly change the mix of fission products that might be released in the event of a serious accident, but such changes would not significantly affect the consequences of serious accidents. Routine radiological effluents are not affected. As a result, there is no increase in individual or cumulative radiation exposure.

The environmental impacts of transportation resulting from the use of higher enrichment and extended irradiation are discussed in the staff assessment entitled, "NRC Assessment of the Environmental Effects of Transportation Resulting from Extended Fuel Enrichment and Irradiation." This assessment was published in the **Federal Register** on August 11, 1988 (53 FR 30355), as corrected on August 24, 1988 (53 FR 32322), in connection with the Shearon Harris Nuclear Power Plant, Unit 1: Environmental Assessment and Finding of No Significant Impact. As indicated therein, the environmental cost contribution of an increase in fuel enrichment of up to 5 weight percent U-235 and irradiation limits of up to 60 Gigawatt Days per Metric Ton (GWD/MT) are either unchanged, or may in fact be reduced from those summarized in Table S-4 as set forth in 10 CFR 51.52(c). These findings are applicable to the proposed increase in the increase in the allowable exposure of Siemens' 9x9-2 fuel for the Susquehanna units.

Accordingly, the Commission concludes that this proposed action would result in no significant radiological environmental impact.

With regard to potential nonradiological impacts, the proposed change will in no way affect environs located outside the restricted area as defined in 10 CFR Part 20. It does not affect nonradiological plant effluents and has no other environmental impact. Therefore, the Commission concludes that there are no significant nonradiological environmental impacts associated with the proposed change in the fuel exposure limit.

Alternatives to the Proposed Action

Since the Commission has concluded there is no measurable environmental impact associated with the proposed action, any alternatives with equal or greater environmental impact need not be evaluated. As an alternative to the proposed action, the staff considered denial of the proposed action. Denial of the application would result in no change in current environmental impacts. The environmental impacts of the proposed action and the alternative action are similar.

Alternative Use of Resources

This action does not involve the use of any resources not previously considered in the Final Environmental Statement for the Susquehanna Steam Electric Station, Units 1 and 2.

Agencies and Persons Consulted

In accordance with its stated policy, on July 7, 1995, the staff consulted with the Pennsylvania State official, David Ney of the Department of Radiation Protection, regarding the environmental impact of the proposed action. The State official had no comments.

Finding of No Significant Impact

Based upon the environmental assessment, the Commission concludes that the proposed action will not have a significant effect on the quality of the human environment. Accordingly, the Commission has determined not to prepare an environmental impact statement for the proposed action.

For further details with respect to the proposed action, see the licensee's letter dated February 2, 1995, which is available for public inspection at the Commission's Public Document Room, The Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Osterhout Free Library, Reference Department, 71 South Franklin Street, Wilkes Barre, Pennsylvania 18701.

Dated at Rockville, Maryland, this 5th day of September 1995.

For the Nuclear Regulatory Commission.

John Stolz,

Director, Project Directorate I-2, Division of Reactor Projects—I/II, Office of Nuclear Reactor Regulation.

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BILLING CODE 7590-01-P

NEA/CNRA/CSNI International Workshop on Steam Generator Tube Integrity in Nuclear Power Plants; Notice of NEA Meeting

SUMMARY: An International Workshop on Steam Generator Tube Integrity in Nuclear Power Plants (NPPs) will be convened by the Committee on Nuclear Regulatory Activities (CNRA) and the Committee on the Safety of Nuclear Installations (CSNI) of the OECD Nuclear Energy Agency (NEA). The NEA announcement and call for participation is attached. The NRC is a member of these committees and NRC staff and contractors will participate in the workshop. The NEA is seeking other participants from the United States. Those interested in participating, should submit the registration form directly to the NEA at the address noted on the form. The deadline for registration has been extended to September 30, 1995.

Dated at Rockville, Maryland, on September 6, 1995.

For the Nuclear Regulatory Commission.

Michael E. Mayfield,

Chief, Electrical, Materials & Mechanical Engineering Branch, Division of Engineering Technology, Office of Nuclear Regulatory Research.

NEA/CNRA/CSNI International Workshop on Steam Generator Tubing Integrity in Nuclear Power Plants

SECOND ANNOUNCEMENT AND CALL FOR PARTICIPATION

1. Organization and Host

An Intentional Workshop on Steam Generator Tube Integrity in Nuclear Power Plants (NPPs) will be convened by the Committee on Nuclear Regulatory Activities (CNRA) and the Committee on the Safety of Nuclear Installations (CSNI) of the OECD Nuclear Energy Agency (NEA). The workshop will be hosted by the Office of Nuclear Regulatory Research of the United States Nuclear Regulatory Commission. The four-day workshop will be conducted in suburban Chicago, Illinois near Argonne National Laboratory on Monday, October 30 through Thursday, November 2, 1995.

2. Background and Purpose

Steam generator tubing has exhibited a wide variety of degradation mechanisms. As a result, a considerable amount of effort has been expended to address the safety and

economic implications of these degradation processes. These efforts have resulted in improved inspection techniques, the development of defect-specific tube repair criteria, enhanced primary-to-secondary leakage monitoring programmes, and implementation of various preventative and corrective measures. Nevertheless, steam generator tube integrity continues to be a major issue for nuclear power plant operators, vendors, and regulators, and efforts continue to be directed at addressing issues related to steam generator tube integrity.

The purpose of this workshop is to provide a unique forum for the exchange of information on aspects related to steam generator tube integrity. Participants will have the opportunity to meet their counterparts from other countries and organizations to discuss regulatory and research issues on this topic. Participants will develop conclusions and recommendations regarding these issues and, hopefully, identify methods to improve their own programs.

3. Workshop Format

The workshop will provide an international forum for the exchange of operating experience and ongoing activities with respect to steam generator tube integrity. Emphasis will be placed on regulatory and safety issues. Participation in this NEA specialists meeting/workshop is limited to contributing experts nominated by the NEA/CNRA/CSNI representative from their country. Prospective participants are asked to contact their representative and provide information on their specific areas of interest and expertise and to indicate the workshop session to which they would contribute.

The workshop format includes an opening plenary session, parallel discussion sessions on five technical areas, and a concluding summary and integration session. In order to gain the most value from their participation, participants will be expected to be present for the entire workshop and to contribute to one of the working sessions.

The opening plenary session will begin with up to eight invited presentations on international steam generator regulatory practices and issues. The second part of the plenary session will consist of comprehensive technical overviews by international authorities in the areas of steam generator tubing degradation, integrity, and inspection.

Following the opening plenary session, the workshop participants will be divided into five parallel working sessions dealing with the following topics: (1) tubing degradation, (2) tubing inspection, (3) tubing integrity, (4) preventative and corrective measures, and (5) operational aspects and risk analysis. Two pre-selected facilitators will lead each of the five working sessions to promote and stimulate the discussions. Under the leadership of these facilitators, each workshop session will develop a list of conclusions and recommendations for their technical area. Prospective participants who are interested in serving as a facilitator should indicate this interest when they register.

The concluding session will begin with presentations by each of the facilitators summarizing the findings and recommendations from his or her working session. An integration session will follow in which the facilitators and CNRA representatives will develop and present overall summary conclusions and recommendations on regulatory and research issues relevant to regulators.

4. Provisional Programme

The overall schedule of events for the workshop is given in Table 1. The plenary session will take place on the first day, followed by five parallel workshop sessions on the second day and the morning of the third day. The fourth day will consist of the technical summary and integration sessions. Workshop attendees will be given an opportunity to tour selected Argonne facilities on the afternoon of the third day.

The presentations in the first plenary session will be structured to provide an international overview of key aspects of steam generator tubing degradation mechanisms, inspection, integrity, preventative/corrective measures, and operation aspects/risk analysis. Matrices outlining the contents of these presentations are given in Table 2.

As stated above, the five parallel working sessions, each led by two pre-selected facilitators, will deal with the following topics: (1) tubing degradation, (2) tubing inspection, (3) tubing integrity, (4) preventative and corrective measures, and (5) operational aspects and risk analysis. The topics to be covered in these sessions and the specific aspects of these topics to be considered are presented in Table 3.

5. Programme Committee

The workshop is being organized under the direction of a Programme Committee made up of the following members:

Dr. Joseph Muscara, United States (chairman)
Mr. Kenneth J. Karwoski, United States
Dr. William J. Shack, United States
Ms. Dominique Moussebois, Belgium
Mr. Guy Turluer, France
Mr. Toshihiko Iwase, Japan
Dr. Jose M. Figueras, Spain
Mr. Gert Hedner, Sweden
Mr. Jean-Pierre Clausner, NEA Secretariat

6. Meeting Organization, Participation, Deadlines

Language. The working language of the workshop will be English. No translation service will be available. Good command of the English language will be necessary to fully benefit from the workshop activities.

Participation. Participation in the meeting is expected from nuclear regulatory bodies, nuclear power utilities, research laboratories, owner's groups, and vendors. Participants, including those who wish to submit papers, are asked to fill out the attached participation form and return it through their country's NEA/CNRA/CSNI representative to the NEA secretariat for planning purposes as early as

possible and not later than 15 September 1995:

Mr. Jean-Pierre Clausner, Nuclear Safety Division, OECD Nuclear Energy Agency, Le Seine St. Gernain, 12, Bd. des Iles, 92130 Issy-les-Moulineaux, France.
Email: Jean-Pierre.Clausner@OECD.org.
Tel: 33 145 2410 54, Fax: 33145241110.

Registration Fee. A registration fee of \$75 will be charged. This fee will cover the costs of a reception on the evening of Sunday, October 29 and a banquet on Tuesday, October 31, as well as coffee breaks and refreshment.

Manuscripts and publication of proceedings. To permit reproduction and distribution of the papers at the beginning of the workshop, speakers are requested to send their photo-ready original manuscript no later than October 1, 1995 to: Dr. Dwight Diercks, Energy Technology Division, Argonne National Laboratory, 9700 South Cass Avenue, Argonne, IL 60439, USA.

If the October 1 deadline for paper submittal should prove impractical, authors are asked to bring 100 copies of their paper to the workshop.

Technical papers and the conference proceedings will be published following the completion of the workshop.

Workshop location. The workshop will be held at the Regency Hyatt Oak Brook Hotel where block of room is being made available at a rate of U.S. \$97.20 for single or double occupancy. To receive this rate, attendees must make reservations directly with the hotel on or before October 25, 1995 and must specify that their reservations are for the "steam generator workshop." Hotel information is as follows:

Hyatt Regency Oak Brook Hotel, 1909 Spring Road, Oak Brook, IL 60521 USA,
Telephone: 1 708-573-1234, Fax: 1 708-573-1909

Other hotels in the area include the following:

Marriott Hotel, 1401 West 22nd Street, Oak Brook, IL 60521 USA, (across the street from the Hyatt Regency Oak Brook Hotel), Telephone: 708-573-8555, Fax: 708-573-1026, Rates: \$139 per night, one or two persons per room

Drake Hotel, 2301 South York Road, Oak Brook, IL 60521 USA, (Located at intersection of York Road and Cermak Rd., 2.2 miles (3.5 km) from the Hyatt Regency Oak Brook Hotel). Telephone: 708-574-5700, Fax: 708-574-0830, Rates: \$89 per night (one person), \$99 (two persons) including continental breakfast

Hampton Inn, 222 East 22nd Street, Lombard, IL 60148, (Located 5 miles (8 km) from the Hyatt Regency Oak Brook Hotel), Telephone: 708-916-9000, Fax: 708-916-8015, Rates: \$64 per night (one person), \$69 (two persons), including continental breakfast

Transportation. The Hyatt Regency Oak Brook and nearby hotels are most conveniently reached from O'Hare International Airport by rental car or limousine. All of the major car rental agencies are represented at O'Hare, and car rental arrangements may be made with them

directly. Arrangements for limousine service must be made in advance, providing the flight number and the anticipated time of arrival. The following service is suggested: United Limousine Service, 432 Ogden Avenue, Downers Grove, IL 60515, Telephone: 708-969-3865, Fax: 708-969-8976.

The approximate cost is \$15.50 (plus tip), but the Argonne National Laboratory rate must be requested when making reservations. Upon arrival at the airport, the traveler must 1-800-331-9037 for actual pickup (the limousine will be waiting nearby). Taxi service between O'Hare and Oak Brook is

also available, but the cost is usually higher than for a limousine.

Other activities. An optional tour of selected technical facilities at Argonne National Laboratory is planned for the afternoon of Wednesday, November 1. Arrangements for participation in this tour may be made at the workshop.

The Hyatt Regency Oak Brook Hotel is approximately 14 miles (22 km) from O'Hare International Airport and 18 miles (29 km) from downtown Chicago. It is located immediately adjacent to the Oak Brook shopping center, a very large and modern facility offering a wide variety of shops and restaurants.

Nearby Chicago is the largest city in the central United States and a major transportation, commercial, and manufacturing center. Chicago is noted for its outstanding museums, including the Field Museum of Natural History, the Art Institute of Chicago, the Museum of Science and Industry, the Adler Planetarium, and the Shedd Aquarium. It also features the Chicago Symphony Orchestra, the shops along North Michigan Avenue, and the parks along the shores of Lake Michigan. Chicago is an ethnically diverse city that offers a rich variety of cultural attractions, restaurants, and activities.

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Table 1. Overall Schedule of Workshop Events

	October 30	October 31	November 1	November 2
M o r n i n g	Opening & welcome	Workshop (five parallel sessions) ↓ ↓ ↓ ↓ ↓	Workshop (five parallel sessions) ↓ ↓ ↓ ↓ ↓	Technical summary and conclusions from each workshop session
	Plenary Session, Part 1: International regulatory practices and issues	↓ ↓	Tour of ANL facilities	Integration session by CNRA representatives and facilitators to develop summary conclusions and recommendations (regulatory and research) relevant to regulators
A f t e r n o o n	Plenary Session, Part 2:	↓ ↓ ↓ ↓ ↓		
	Technical (degradation, integrity, inspection)	↓		

Table 2. Content of Plenary Session, Part 1 Presentations

Degradation Mechanisms	O B S E R V E D	C U R R E N T	P R I O R I T Y	U N D E R S T A N D I N G	F U T U R E A C T I O N S
ID SCC, circumferential, RTZ	*	*	**	**	***
OD SCC, circumferential, RTZ	*	*	**	**	***
ID axial PWSCC	*	*	**	**	***
ODSCC at tube support plates	*	*	**	**	***
Sleeved tube degradation	*	*	**	**	***
Freespan cracking	*	*	**	**	***
Others (specify):	*	*	**	**	***

* Yes,No; ** High, Medium, Low; *** Research, Regulatory, Vendor

Table 2. (Cont'd.)

Inspection	T E C H N I Q U E	D E T E C T I O N	S I Z I N G	C H A R A C T E R I S A T I O N	O F I N T E G R I T Y	F U T U R E A C T I O N S
ID SCC, circumferential, RTZ	*	**	**	**		***
OD SCC, circumferential, RTZ	*	**	**	**		***
ID axial PWSCC	*	**	**	**		***
ODSCC at tube support plates	*	**	**	**		***
Sleeved tube degradation	*	**	**	**		***
Freespan cracking	*	**	**	**		***
Others (specify):	*	**	**	**		***

* Bobbin coil, Rotating pancake coil, Ultrasonics, Other

** High, Medium, Low; *** Research, Regulatory, Vendor

Table 2. (Cont'd.)

Integrity	REPAIR LIMIT	BASIS	CONFIDENCE	ONGROWTH RATE	CGR BASIS	CONFIDENCE ON BURST	PRESSURE PREDICTION	CONFID. ON LEAK RATE	PROBABILISTIC /	DETERMINISTIC	FUTURE ACTIONS
ID SCC, circumferential, RTZ	*	* *	***	#	***	** *	**	**	**	***	
OD SCC, circumferential, RTZ	*	* *	***	#	***	** *	**	**	**	***	
ID axial PWSCC	*	* *	***	#	***	** *	**	**	**	***	
ODSCC at tube support plates	*	* *	***	#	***	** *	**	**	**	***	
Sleeved tube degradation	*	* *	***	#	***	** *	**	**	**	***	
Freespan cracking	*	* *	***	#	***	** *	**	**	**	***	
Others (specify):	*	* *	***	#	***	** *	**	**	**	***	

* Voltage, Crack length, Crack depth; ** Physically based, Correlation;
 *** High, Medium, Low; # Laboratory, Field; ## Probabilistic, Deterministic;
 ### Research, Regulatory, Vendor

Table 2. (Cont'd.)

Preventative/Corrective Measures	A P P L I E D / U S E D	E F F E C T I V E N E S S	Q U A L I F I E D	F U T U R E A C T I O N S
Sludge lancing	*	**	*	***
Chemical cleaning	*	**	*	***
Sleeving	*	**	*	***
Roto/shot peening	*	**	*	***
Water chemistry	*	**	*	***
Others (specify):	*	**	*	***
	*	**	*	***

* Yes, No; ** High, Medium, Low; *** Research, Regulatory, Vendor

Table 2. (Cont'd.)

Operation Aspects/ Risk Analysis	A P P L I E D / U S E D	A C C U R A C Y / /	E F F E C T I V E N E S S	L I M I T S	F U T U. A C T I O N S
Leak detection:					
N-16	*	**		** *	#
Off-gass analysis	*	**		** *	#
Blowdown analysis	*	**		** *	#
Grab samples	*	**		** *	#
Others (specify):	*	**		** *	#

* Yes, No; ** High, Medium, Low;

*** Basis for action levels/limits: LBB, Dose concerns, Tube integrity,

Other: Research, Regulatory, Vendor

Table 3. Topic to be Covered in Five Parallel Workshop Sessions***Degradation***

<u>Modes of current Interest</u>		<u>Characterisation of Mode</u>
Primary: axial	)	Mechanical Properties
circumferential)	
crack network)	
Secondary: axial	>	What is Known
circumferential	)	Initiation/Propagation
crack network	)	Predictive Methodologies
Fatigue	)	Crevice Chemistry (Secondary Side Modes)

Inspection

Methods (EC, UT, others)	)	Criteria - Confidence level, true state of sample, pass-fail.
Capabilities)	
Quantification	>	Definition and extent of inspection programme
Sizing	)	(varies with plant, inspection requirements, expertise, etc.)
Performance Demonstration)	
Sleeving and other repairs)	

Integrity

Structural Integrity	)	Rationale for limits
circumferential cracks	)	Repair criteria
PWSCC at RTZ	)	NDE reliability
networks/complex cracks	>	Growth rates
Leakage estimates (empirical correlation vs. physically based approaches)	)	Margins/uncertainty
	)	LBB/normal operating conditions
Integrity assessment by empirical correlation vs. physically based approaches	)	TSP integrity/constraint
	)	Severe accidents

Preventative and Corrective Measures

Experience with 690, 800, Monel 400,	)	Direct tube repairs
Sleeving	)	Water chemistry
Shot/roto-peening	)	Molar ratio control
Ni plating	>	Boric acid additions
Sludge lancing	)	Zn additions
Chemical cleaning	)	Phosphate/AVT
Direct Tube repairs	)	Plugging

Operational Aspects and Risk Analysis

Multiple tube rupture	)	Consequence analysis
Leakage monitoring	>	Operating procedures
Tube integrity	)	Single tube rupture
Dose concerns	)	Multiple tube rupture

O E C D
NUCLEAR ENERGY AGENCY

CNRA/CSNI

REGISTRATION FORM
CNRA/CSNI International Workshop on
Steam Generator Tube Integrity in NPPs

HOSTED BY THE USNRC/RES, IN ARGONNE, ILLINOIS
30 OCTOBER - 2 NOVEMBER 1995

NAME: _____

POSITION: _____

ORGANIZATION: _____

ADDRESS: _____

TEL: _____ **FAX:** _____

I register for the following working session: (please refer to table 3 for topics covered in each session)

- | | |
|-----------------------|--|
| 1) Tubing Degradation | 4) Preventive and Corrective Measures |
| 2) Tubing Inspection | |
| 3) Tubing Integrity | 5) Operational Aspects and Risk Analysis |

I intend to make a presentation YES () NO ()

(Please note that presentations are intended to support the technical discussion during the working session. Therefore, they should be limited in time (10 to 15 mn) and strictly adhere to one topic of the working session).

Title:

I volunteer to serve as a moderator (facilitator) of a Working Session

Please circle which session: 1 2 3 4 5

Please return before September 15, 1995 to:

Mr. Jean-Pierre Clausner
OECD Nuclear Energy Agency
Le Seine St Germain
12, Boulevard des Iles
92130 Issy-les-Moulineaux, France

Tel: 33 1 45 24 10 54
Fax: 33 1 45 24 11 10