UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

The Honorable Edward J. Markey, Chairman
Subcommittee on Oversight and Investigations
Committee on Interior and Insular Affairs
United States House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

My letter to you dated October 27, 1982, advised that we had issued a generic letter to all PWR licensees asking for the information you requested for your survey regarding economic and worker safety aspects of the steam generator tube degradation problem. Although we requested the utilities' responses by November 25, 1982, many of them are still in the process of gathering the requested information.

In order to provide you with as many responses as possible prior to the scheduled hearing date of December 2, 1982, we have asked the utilities to telecopy their responses. As a consequence, the legibility of some of the responses is poor. Copies of their submittals that we have received to date are attached. We expect to receive additional responses within the next few weeks. It is our intent to provide you with all these responses as soon as possible thereafter.

Sincerely,

Carlton Kammerer, Director
Office of Congressional Affairs

Enclosures: As stated

cc: Rep. Ron Marlenee

SUMMARY OF PLANTS RESPONDING

TO GENERIC LETTER NO. 82-22 RECEIVED TO DATE

Response Summary to Generic Letter No. 82-22

The generic letter on steam generator tube integrity was sent to 51 units which are represented by 31 utilities.

	# Units	# Utilities
Full Responses	16	12
Partial Responses	12	9
Declined to Respond	14	5
No response received	9	7
total	51	*33

* VEPCO counted twice (Full response for North Anna; Partial response for Surry)

MET. ED counted twice (Full response for TMI-1; No response for TMI-2)

NUMBER OF PLANTS RESPONDING TO GENERIC LETTER

Responses to Steam Generator Integrity Letter of October 26, 1982
(Generic Letter No. 82-22)

Plant	Utility	Response
Farley-1 Farley-2	Alabama Power Co.	Declined
Arkansas Nuclear One-1 Arkansas Nuclear One-2	Arkansas Power & Light Co.	Partial Response
Calvert Cliffs-1 Calvert Cliffs-2	Baltimore Gas and Electric Co.	Declined
Robinson-2	Carolina Power & Light Co.	Partial Response
Connecticut Yankee	Connecticut Yankee Atomic Power Co.	Partial Response
Palisades	Consumers Power Co.	Full Response
Indian Point-2	Consolidated Edison Co. of New York, Inc.	*
Zion-1 Zion-2	Commonwealth Edison Co.	Partial Response
McGuire-1 Oconee-1 Oconee-2 Oconee-3	Duke Power Co.	Declined
Beaver Valley-1	Duquesne Light Co.	Full Response
Crystal River-3	Florida Power Corp.	Full Response
St. Lucie-1 Turkey Point-3 Turkey Point-4	Florida Power & Light Co.	Declined
Cook-1 Cook-2	Indiana & Michigan Electric Co.	Full Response
Maine Yankee	Maine Yankee Atomic Power Co.	Partial Response
Three Mile Island-1 Three Mile Island-2	Metropolitan Edison Co.	Full Response *(TMI-2)

* Indicates that response has not been received to date.

Plant	Utility	Response
Millstone-2	Northeast Utilities	Partial Response
Prairie Island-1 Prairie Island-2	Northern States Power Co.	Full Response
Fort Calhoun-1	Omaha Public Power District	Full Response
Trojan	Portland General Electric Co.	Full Response
Indian Point-3	Power Authority of the State of New York	Full Response
Salem-1 Salem-2	Public Service Electric & Gas Co.	*
Ginna	Rochester Gas and Electric Corp.	*
Rancho Seco-1	Sacramento Municipal Utility District	Partial Response
Summer	South Carolina Public Service Authority	*
San Onofre-1 San Onofre-2 San Onofre-3	Southern California Edison Co.	Declined
Sequoyah-1 Sequoyah-2	Tennessee Valley Authority	Full Response
Davis-Besse-1	Toledo Edison Co.	*
North Anna-1 North Anna-2 Surry-1 Surry-2	Virginia Electric & Power Co.	Full Response for North Anna Partial Response for Surry
Point Beach-1 Point Beach-2	Wisconsin Electric Power Co.	*
Kewaunee	Wisconsin Public Service Corp.	Full Response
Yankee Rowe	Yankee Atomic Electric Co.	Partial Response

* Indicates that response has not been received to date.

Question: How many days of Unscheduled outages can be attributed to steam generator-related difficulties per year at your site?

Answer:

	'79	'80	'81	'82	
Kewaunee	0	0	0	0	
Palisades	0	0	0	0	
Prairie Island 1 and 2	21	34	24	0	
Ft. Calhoun	0	0	0	0	
Beaver Valley	0	0	0	15	
TMI-1	0	0	0	0	
Trojan	43	0	13	0	
Crystal River	0	0	0	0	
North Anna 1 and 2		25.5 total			
Surry 1 and 2		26 total			Does not include scheduled downtime to replace steam generators.
Maine Yankee	0	0	0	0	
Zion 1 and 2	0	0	0	0	
Yankee Rowe	0	0	0	0	
Haddam Neck	0	0	0	0	
Millstone	0	0	0	0	
Sequoyah 1 and 2	-	-	11	0	
Cook 1	0	0	0	0	
Cook 2	0	0	28	17	
H. B. Robinson		average 3 weeks/year			
Arkansas 1 and 2	NA	NA	0	16	
Indian Point 3	6	0	54	NA	

NA - Information not presently available

Question: During each of the years in question, how many steam generator tubes have been

Plugged in each steam generator?
Sleeved in each steam generator?

Answer:

	SG#	'79 Plug/Sleeve	'80 P/S	'81 P/S	'82 P/S
Kewaunee	A	0/0	0/0	0/0	0/0
	B	0/0	0/0	0/0	0/0
Palisades	A	14/0	0/0	9/0	2/0
	B	9/0	0/0	40/0	170
Prairie Island 1	11	6/0	0/0	25/0	Incomplete
	12	0/0	1/0	2/0	Incomplete
Prairie Island 2	21	0/0	3/0	4/0	15/0
	22	0/0	15/0	38/0	12/0
Ft. Calhoun	All	0/0	0/0	0/0	0/0
Beaver Valley 1	All	0/0	0/0	0/0	1/0
TMI-1	All	3/0	1/0	0/0	∿ 300 ∿ 900 (1983) *Note
Trojan	A	2/0	4/0	88/0	0/0
	B	1/0	3/0	89/0	0/0
	C	1/0	1/0	92/0	0/0
	D	5/0	55/0	63/0	0/0
Crystal River 3	All	0/0	2/0	1/0	0/0
North Anna 1 and 2	All	284/0	0/0	0/0	0/0
Surry 1 and 2	All	26/0	90/0	0/0	0/0
Maine Yankee	All	0/0	0/0	0/0	12/0
Zion 1 and 2	All	some tubes plugged/none sleeved			
Yankee Rowe	All	0/0	0/0	3/0	9/0
Haddam Neck	All	plugged maximum of 21 tubes/yr. per SG no sleeving			

* Note: All 31,000 tubes are to be kinetically expanded in the upper tube sheet to create a new mechanical joint below the damaged area. This work is expected to be completed by mid '83

	SG#	'79 Plug/Sleeve	'80 P/S	'81 P/S	'82 P/S
Millstone	All	plugged maximum of 429 tubes/SG since 1979. no sleeving			
Sequoyah 1 and 2	All	-	-	0/0	0/0
D.C. Cook 1	1	0/0	10/0	0/0	0/0
	2	0/0	0/0	0/0	10/0
	3	0/0	0/0	0/0	10/0
	4	0/0	10/0	0/0	0/0
D. C. Cook 2	1	0/0	6/0	7/0	2/0
	2	0/0	0/0	0/0	0/0
	3	0/0	0/0	0/0	0/0
	4	0/0	0/0	10/0	0/0
Arkansas 1	A	NA	NA	7/0	10/0
	B	NA	NA	0/0	0/0
Arkansas 2	A	NA	NA	0/0	4/0
	B	NA	NA	0/0	0/0
Indian Point 3	All	449/0	9/0	371/0	NA

NA - Information not presently available

Question: What have been the total costs and specifically replacement power costs associated with steam generator maintenance, repair and replacement at your plant?

Answer:

	'79	'80	'81	'82	Comments
Kewaunee	R 0	0	0	0	
	M 0	0	0	0	*Note 1
Palisades	R 0	0	0	20,885,700	(49 days)
	M 774,000	0	927,000	581,500	
Prairie Island 1 and 2	1,560,000	3,888,000	2,786,000	1,141,000	Did not break down costs
Fort Calhoun	R 0	0	0	0	
	M 0	100,000	90,000	0	T/S surveillance costs only.
Beaver Valley	R 0	0	0	0	
	M 0	0	0	270,000	
TMI-1	R 0	0	0	0	12-13 million/mo. if allowed to operate
	M 0	0	0	35,000,000	Estimated final cost
Trojan	R 30,126,000	0	5,253,000	0	Only represents PGE share of Trojan plant
	M 937,000	857,000	2,062,000	0	
Crystal River	R 0	0	0	0	
	M 0	0	0	0	*Note 1
North Anna 1 and 2	R 0	0	0	0	
	M 0	0	0	0	*Note 1
Surry 1 and 2	123,000,000	63,000,000	84,000,000	NR	Did not break down costs
Zion 1 and 2	R 0	0	0	NR	
	M NR	NR	NR	NR	
Yankee Rowe	R NR	NR	50,000	125,000	Replacement power costs associated with scheduled shutdown - Therefore not reported
	M NR	NR	NR	NR	
Haddam Neck	R NR	NR	NR	NR	
	M approximately 1,000,000 per inspection				
Millstone 2	R NR	NR	NR	NR	
	M typically ~1,000,000/inspection			1,000,000	
Sequoyah 1 and 2	-	-	5,860,000	0	Did not break down costs

*Note: 1) Maintenance costs apparently do not reflect routine inspection and tube plugging costs

		'79	'80	'81	'82	Comments
,k 1 and 2	R	0	0	0	0	
	M	0	32,318	101,591	153,688	
Arkansas 1 and 2	R	NA	NA	0	4,282,964	
	M	NA	NA	NR	NR	
Indian Point 3	R	4,800,000	0	43,200,000	NA	
	M	910,000	70,000	2,050.000	NA	

Replacement Power Costs
Maintenance Costs

NR - Not Reported
NA - Not presently available

Question: What has been the total occupational radiation exposure (in person-rems) caused by steam generator?

Maintenance?

Repair/Replacement?

Answer:

	'79	'80	'81	'82	
Kewaunee	M 4.5	20.9	3.6	2.2	
	R 0	0	0	0	
Palisades	M 130	0	80	0	
	R 0	0	0	43.4	
Prairie Island	M 14.6	32	33	17.6	
	R 0	0	0	0	
Fort Calhoun	M 0	2.7	15.8	0	
	R 0	0	0	0	
Beaver Valley	M 0	0	0	0	
	R 0	0	0	0	
TMI-1	25	-	18	154	Not broken down
Trojan	M 41	46	139	15	
	R 0	0	0	0	
Crystal River 3	0	98.7	27.6	0	Not broken down
North Anna 1 and 2	M 71.1	10.2	0	0	
	R 0	0	0	0	
Surry 1 and 2	M NR	NR	NR	NR	
	R 2179	792	967	NR	
Maine Yankee	Below industry average				
Yankee Rowe	NR	3.8	21	36.2	Not broken down
Haddam Neck	Average 122/year; max. 263/year				Not broken down
Millstone	Average 310/year; max. 890/year				Not broken down
Sequoyah 1 and 2	M -	-	14.3	71.9	
	R -	-	0	0	

		'79	'80	'81	'82	
Cook 1 and 2	M	35.4	33	48.5	32.5	
	R	0	5.9	4.5	16.4	
Robinson		Average 215/year				Not broken down
Arkansas 1 and 2	M	NA	NA	NA	NA	
	R	NA	NA	51.1	52.7	
Indian Point 3	M	50.7	4.4	0	NA	
	R	84.4	10.8	206	NA	

NR - Not reported
..., - Not presently available

M - Maintenance
R - Repair

Question: What percentage of total annual employee dose has been attributable to steam generator related work at your site(s)?

Answer: For most plants the steam generator dose represents about 10% to 20% of total plant dose. This number can increase dramatically for extensive S/G repairs (e.g., TMI-1)

	'79	'80	'81	'82	
Kewaunee	4.0	9.4	2.4	2.3	
Palisades	10	0	10	10	
Prairie Is. 1 and 2	9.5	16.3	17.9	Inc.	Currently in 1982 refueling outage
Ft. Calhoun	0	0.4	3.5	0	
Beaver Valley	0	0	0	4	
TMI-1	3	-	11	60	
Trojan	17.8	11.9	26.0	4.1	
Crystal River	0	17	5	0	
N. Anna 1, 2	29	5	0	0	
Maddam Neck		Maximum 24% during any one year.			
Millstone		Maximum 63% during any one year.			
Sequoyah 1,2	-	-	14.9	23.9	
Cook 1, 2	5.3	8.6	8.8	11.5	
Robinson		Average 22%/year			
Indian Pt 3	20	5	57	NA	

NA - Not presently available

Question: During the years in question, how many workers have received measureable radiation doses for steam generator related work? What percentage of the total workforce do these workers represent?

Answer: Workers receiving doses range from 15 to over 300. The percent of those working who receive doses are generally less than 20% although some go higher.

	'79	'80	'81	'82	
Kewaunee	# 27	47	30	15	
	% 5%	8.8%	3.4%	2.3%	
Palisades	# 188	0	195	91	
	% 9.4%	0	10.5%	6.4%	
Prairie Island	# 60	110	90	NA	In current refueling
	% 5.5%	7.1%	6.7%	NA	
Fort Calhoun	# 0	15	28	0	
	% 0	1.4%	2.9%	0	
Beaver Valley	# 0	0	0	153	
	% 0	0	0	7%	
TMI-1	# -	-	152	244	
	% -	-	10%	28%	
Trojan	# 200	211	317	78	
	% 17%	12.2%	10.0%	7.3%	
Crystal River	# 0	159	55	0	
	% 0	9.2%	2.7%	0	
North Anna 1 and 2	# 337	231	0	0	
	% 23%	10%	0	0	
Yankee Rowe	# NA	15	50	78	
	% NA	.8%	2.4%	6%	
Sequoyah 1 and 2	# -	-	134	200	
	% -	-	8.9%	7.6%	
Cook 1 and 2	# 167	260	295	271	
	% 17.5%	32.9%	32.9%	15.4%	
Robinson	#	Average 286/year			
	%	Average 32%/year			
Arkansas 1 and 2	# NA	NA	133	128	
	% NA	NA	NA	NA	
Indian Point 3	#163	66	245	NA	
	% 14%	5%	22%	NA	

- Total number people receiving doses.
% - Percent of people receiving doses.
NA - Not presently available.

Question: How many temporary workers (defined by the NRC as all workers other than those hired directly by nuclear power plants on a conventional, long-term basis) received doses from steam generator-related work at your facility each year?

Answer: The range varies between less than 10 to over 250.

	'79	'80	'81	'82	
Kewaunee	26	43	17	14	
Palisades	96	0	99	28	
Prairie Island	50	100	80	NA	Still in refueling outage
Fort Calhoun	0	5	12	0	
Beaver Valley	0	0	0	83	
TMI-1	-	-	62	189	
Trojan	131	194	269	54	
Crystal River	0	109	40	0	
North Anna 1 and 2	175	208	0	0	
Yankee Rowe	Approximately 91 temporary workers during '80, '81, and 82.				
Sequoyah 1 and 2	-	-	32	38	
Cook 1 and 2	115	198	218	218	
Robinson	Average 219/year				
Arkansas 1 and 2	NA	NA	54	61	Contractor personnel
Indian Point 3	109(est)	33	167	NA	

NA - Not presently available

Question: What percentage of: total workers involved with steam generator-related work do temporary workers represent? total workforce do temporary workers represent?

Answer: Temporary workers represent about 50 to 90% of the workforce for S/G related work. For other work, they generally compose a smaller percentage. Temporary workers typically represent from 5 to 90% of the overall workforce.

		'79	'80	'81	'82
Kewaunee	% S/G	96	91	85	91
	% Tot	63	64	81	52
Palisades	% S/G	51	0	51	31
	% Tot	4.85	0	5.3	2.0
Prairie Island	% S/G	83	90	90	NA
	% Tot	15	15	15	15
Fort Calhoun	% S/G	0	40	40	0
	% Tot	0	25	25	10
Beaver Valley	% S/G	0	0	0	54
	% Tot	0	0	0	72
TMI-1	% S/G	-	-	41	78
	% Tot	-	-	-	-
Trojan	% S/G	65.5	91.9	84.9	70.1
	% Tot	60.6	67.3	62.9	53.4
Crystal River	% S/G	0	68	63	0
	% Tot	0	6.3	1.9	0
North Anna 1,2	% S/G	52	90	0	0
	% Tot	37	57	61	0
Surry 1 and 2	% S/G	NR	NR	NR	NR
	% Tot	84	82	76	NR
Zion 1 and 2	% S/G		Average 80%/year		
	% Tot		Average 63%/year		
Yankee Rowe	% S/G		64%/year		
	% Tot		NA		
Sequoyah 1,2	% S/G	-	-	23.8	19.0
	% Tot	-	-	1.0	0.6
Cook 1 and 2	% S/G	68.9	76.2	73.9	80.4
	% Tot	73.8	72.7	72.5	62.4

		'79	'80	'81	'82
Robinson	% S/G		Average 76%/year		
	% Tot		Average 73%/year		
Arkansas 1, 2	% S/G	NA	NA	41	48
	% Tot	NA	NA	NA	NA
Indian Point 3	% S/G	68	50	68	NA
	% Tot	86	83	76	NA

% S/G - % temporary workers on S/G related work
% Tot - % temporary workers for entire workforce

Question: Has your company used independent firms to find temporary employees who have received an occupational dose from steam generator-related work?

Answer: Utilities seem split on this.

	'79	'80	'81	'82
Kewaunee	NO	NO	NO	NO
Palisades	NO	NO	NO	NO
Prairie Island	YES	YES	YES	YES
Fort Calhoun	NO	YES	YES	NO
Beaver Valley	NO	NO	NO	YES
TMI-1	NO	NO	NO	NO
Trojan	YES	YES	YES	YES
Crystal River	NO	NO	NO	NO
North Anna 1 and 2	YES	YES	NA	NA
Surry 1 and 2	YES	YES	YES	YES
ZION 1 and 2		YES		
Sequoyah 1 and 2	-	-	NO	NO
Cook 1 and 2	NO	NO	NO	NO
Robinson	NO	NO	NO	NO
Arkansas 1 and 2	NA	NA	NO	NO
Indian Point 3	NO	NO	NO	NA

NA - Information not presently available or not reported

Question: Do you anticipate major steam generator repairs in any of your units in the next five years, and if so how much would these repairs cost? Please specify.

Answer: Of the plants responding, two plants are planning major steam generator repairs. This does not include other plants where major repairs are underway or have been completed.

H. B. Robinson 2	Replacement	$100,000,000.
Indian Point 3	Sleeving and Plugging performed during current outage.	19,000,000.

SECTION VIII PRELIMINARY RESPONSES TO REP MARKEY'S SURVEY

1. Generic Letter and listing of plants responding to date.

2. In previous responses to the Markey sub-Committee, Udall's Committee, and the Union of Concerned Scientists, it was indicated that a number of questions would be included in the 45-day task force report. Are those questions answered in that report?

3. How many days of unscheduled outages can be attributed to steam generator-related difficulties per year at your site?

4. During each of the years in question, how many steam generator tubes have been; plugged in each steam generator? and sleeved in each steam generator?

5. What have been the total costs and specifically replacement power costs associated with steam generator maintenance, repair and replacement at your plant?

6. What has been the total occupational radiation exposure (in person-rems) caused by steam generator; maintenance? and repair/ replacement?

7. What percentage of total annual employee dose has been attributable to steam generator related work at your site(s)?

8. During the years in question, How many workers have received measureable radiation doses for steam generator related work? and what percentage of the total workforce do these workers represent?

9. How many temporary workers (defined by the NRC as all workers other than those hired directly by nuclear power plants on a conventional, long-term basis) received doses from steam generator-related work at your facility each year?

10. What percentage of total workers involved with steam generator-related work do temporary workers represent? and the total workforce do temporary workers represent?

11. Has your company used independent firms to find temporary employees who have received an occupational dose from steam generator-related work?

12. Do you anticipate major steam generator repairs in any of your units in th_ next five years, and if so how much would these repairs cost, please specify.

• NUCLEAR REGULATORY COMMISSION
4 GENERATOR - RELATED - QUESTIONNAIRE
4 'NNA UNITS 1 AND 2

	1979	1980	1981	1982
4ANY DAYS OF UNSCHEDULES OUTAGED CAN BE (BUTED TO STEAM GENERATOR - RELATED ICULTIES PER YEAR AT YOUR SITE?	<***** 25.5 *****>			
NG EACH OF THE YEARS IN QUESTION, HOW MANY 4 GENERATOR TUBES HAVE BEEN PLUGGED IN EACH STEAM GENERATOR?	284	0	?	0
SLEEVED IN EACH STEAM GENERATOR?	0	0	0	0
HAVE BEEN THE TOTAL COSTS AND SPECIFICALLY ACEMENT POWER COSTS ASSOCIATED WITH STEAM RATOR MAINTENANCE, REPAIR AND REPLACEMENT OUR PLANT?	0	0	0	0
HAS BEEN THE TOTAL OCCUPATIONAL RADIATION SURE (IN PERSON - REMS) CAUSED BY STEAM RATOR MAINTENANCE?	71.14	10.16	0	0
REPAIR/REPLACEMENT?	0	0	0	0
PERCENTAGE OF TOTAL ANNUAL EMPLOYEE DOSE HAS TRIBUTABLE TO STEAM GENERATOR RELATED WORK OL SITE(S)?	29	5	0	0
NG THE YEARS IN QUESTION, HOW MANY WORKERS HAVE RECEIVED MEASUREABLE RADIATION DOSES FOR STEAM GENERATOR RELATED WORK?	337	231	0	0
WHAT PERCENTAGE OF THE TOTAL WORKFORCE DO THESE WORKERS REPRESENT?	23	10	0	0
4ANY TEMPORARY WORKERS (DEFINED BY THE NRC L WORKERS OTHER THAN THOSE HIRED DIRECTLY JCLEAR POWER PLANTS ON A CONVENTIONAL, -TERM BASIS) RECEIVED DOSES FROM STEAM <ATOR-RELATED WORK AT YOUR FACILITY EACH ?	175	208	?	?
PERCENTAGE OF TAL WORKERS INVOLVED WITH STEAM GENERATOR ELATED WORK DO TEMPORARY WORKERS REPRESENT?	52	90	?	?
IE TOTAL WORKFORCE DO TEMPORARY WORKERS EPRESENT?	37	57	61	0
'O COMPANY USED INDEPENDENT FIRMS TO FIND)I EMPLOYEES WHO HAVE RECEIVED AN OCCU- JNAL DOSE FROM STEAM GENERATOR RELATED WORK?	YES	YES		

)U ANTICIPATE MAJOR STEAM GENERATOR REPAIRS IN ANY OF YOUR UNITS IN EXT FIVE YEARS, AND IF SO HOW MUCH WOULD THESE REPAIRS COST, E SPECIFY.

NO

S. NUCLEAR REGULATORY COMMISSION
GENERATOR - RELATED - QUESTIONNAIRE
INITS 1 AND 2

	1979	1980	1981	1982
MANY DAYS OF UNSCHEDULES OUTAGES CAN BE RIBUTED TO STEAM GENERATOR - RELATED FICULTIES PER YEAR AT YOUR SITE?	<------ 26.1 ------>			
RING EACH OF THE YEARS IN QUESTION, HOW MANY EAM GENERATOR TUBES HAVE BEEN PLUGGED IN EACH STEAM GENERATOR?	26	90	0	0
SLEEVED IN EACH STEAM GENERATOR?	0	0	0	0
AT HAVE BEEN THE TOTAL COSTS AND SPECIFICALLY PLACEMENT POWER COSTS ASSOCIATED WITH STEAM ERATOR MAINTENANCE, REPAIR AND REPLACEMENT YOUR PLANT? (FIGURES IN MILLIONS OF DOLLARS)	123	63	84	
AT HAS BEEN THE TOTAL OCCUPATIONAL RADIATION POSURE (IN PERSON - REMS) CAUSED BY STEAM ERATOR MAINTENANCE?	*	*	*	
REPAIR/REPLACEMENT?	2179	792	967	
AT RCENTAGE OF TOTAL ANNUAL EMPLOYEE DOSE HAS EN ATTRIBUTABLE TO STEAM GENERATOR RELATED WORK YOUR SITE(S)?	*	*	*	*
ING THE YEARS IN QUESTION HOW MANY WORKERS HAVE RECEIVED MEASUREABLE RADIATION DOSES FOR STEAM GENERATOR RELATED WORK?	*	*	*	*
WHAT PERCENTAGE OF THE TOTAL WORKFORCE DO THESE WORKERS REPRESENT?	*	*	*	*
MANY TEMPORARY WORKERS (DEFINED BY THE NRC ALL WORKERS OTHER THAN THOSE HIRED DIRECTLY NUCLEAR POWER PLANTS ON A CONVENTIONAL, G-TERM BASIS) RECEIVED DOSES FROM STEAM ERATOR-RELATED WORK AT YOUR FACILITY EACH R?	*	*	*	*
T PERCENTAGE OF TOTAL WORKERS INVOLVED WITH STEAM GENERATOR RELATED WORK DO TEMPORARY WORKERS REPRESENT?	*	*	*	*
THE TOTAL WORKFORCE DO TEMPORARY WORKERS REPRESENT?	84	82	76	*
COMPANY USED INDEPENDENT FIRMS TO FIND PORARY EMPLOYEES WHO HAVE RECEIVED AN OCCU- IONAL DOSE FROM STEAM GENERATOR RELATED WORK?	YES	YES	YES	YES

YOU ANTICIPATE MAJOR STEAM GENERATOR REPAIRS IN ANY OF YOUR UNITS IN HE NEXT FIVE YEARS, AND IF SO HOW MUCH WOULD THESE REPAIRS COST,

VO

SURRY : NORTH ANNA QUESTIONAIRES

SUBMITTED W/O COVER LETTER

U. S. NUCLEAR REGULATORY COMMISSION

Approved by OMB 3150-0092

STEAM GENERATOR-RELATED - QUESTIONNAIRE

SEQUOYAH 1,2	RESPONSE BY YEAR			
	1979	1980	1981	1982
HOW MANY DAYS OF UNSCHEDULES OUTAGES CAN BE ATTRIBUTED TO STEAM GENERATOR-RELATED DIFFICULTIES PER YEAR AT YOUR SITE?			10.6	0
DURING EACH OF THE YEARS IN QUESTION, HOW MANY STEAM GENERATOR TUBES HAVE BEEN PLUGGED IN EACH STEAM GENERATOR?			0	0
SLEEVED IN EACH STEAM GENERATOR?			0	0
WHAT HAVE BEEN THE TOTAL COSTS AND SPECIFICALLY REPLACEMENT POWER COSTS ASSOCIATED WITH STEAM GENERATOR MAINTENANCE, REPAIR AND REPLACEMENT AT YOUR PLANT?			5.86 M	0
WHAT HAS BEEN THE TOTAL OCCUPATIONAL RADIATION EXPOSURE (IN PERSON-REMS) CAUSED BY STEAM GENERATOR MAINTENANCE?			14.3	71.93
REPAIR/REPLACEMENT?			0	0
WHAT PERCENTAGE OF TOTAL ANNUAL EMPLOYEE DOSE HAS BEEN ATTRIBUTABLE TO STEAM GENERATOR RELATED WORK AT YOUR SITE(S)?			14.9	23.9
DURING THE YEARS IN QUESTION HOW MANY WORKERS HAVE RECEIVED MEASUREABLE RADIATION DOSES FOR STEAM GENERATOR RELATED WORK?			134	200
WHAT PERCENTAGE OF THE TOTAL WORKFORCE DO THESE WORKERS REPRESENT?			8.9	7.6
HOW MANY TEMPORARY WORKERS (defined by the NRC as all workers other than those hired directly by nuclear power plants on a conventional, long-term basis) RECEIVED DOSES FROM STEAM GENERATOR-RELATED WORK AT YOUR FACILITY EACH YEAR?			32	38
WHAT PERCENTAGE OF TOTAL WORKERS INVOLVED WITH STEAM GENERATOR-RELATED WORK DO TEMPORARY WORKERS REPRESENT?			23.8	19.0
THE TOTAL WORKFORCE DO TEMPORARY WORKERS REPRESENT?			1.0	0.6
HAS YOUR COMPANY USED INDEPENDENT FIRMS TO FIND TEMPORARY EMPLOYEES WHO HAVE RECEIVED AN OCCUPATIONAL DOSE FROM STEAM GENERATOR-RELATED WORK?			No	No

DO YOU ANTICIPATE MAJOR STEAM GENERATOR REPAIRS IN ANY OF YOUR UNITS IN THE NEXT FIVE YEARS, AND IF SO HOW MUCH WOULD THESE REPAIRS COST, PLEASE SPECIFY.

No Major SG Repairs Are Planned and/or Anticipated in the Next Five Years

Northern States Power Company

414 Nicollet Mall
Minneapolis, Minnesota 55401
Telephone (612) 330-5500

November 11, 1982

Director
Office of Nuclear Reactor Regulation
U S Nuclear Regulatory Commission
Washington, DC 20555

PRAIRIE ISLAND NUCLEAR GENERATING PLANT
Docket Nos. 50-282 License Nos. DPR-42
50-306 DPR-60

Reply to Request for Information on Steam Generator Tube Integrity (Generic Letter No. 82-22)

Your letter to us dated October 26, 1982, "Congressional Request for Information Concerning Steam Generator Tube Integrity (Generic Letter No. 82-22)" requested answers to questions generated by Mr E J Markey, Chairman of the Congressional Subcommittee on Oversight and Investigations. Our answers to these questions are tabulated by year on the attached table. The questions were answered as accurately as possible using the records that were available to us.

Please contact us if you have any questions concerning the information we have submitted.

David Musolf
Manager - Nuclear Support Services

DMM/SAF/bd

cc: Regional Admin-III, NRC
NRR Project Manager, NRC
NRC Resident Inspector
G Charnoff

Attachment

8212150246, 2pp.

Question Number

PRAIRIE ISLAND NUCLEAR GENERATING PLANT - UNITS 1 & 2

U. S. NUCLEAR REGULATORY COMMISSION

Approved by OMB 3150-0092

STEAM GENERATOR-RELATED - QUESTIONNAIRE

		RESPONSE BY YEAR			
		1979	1980	1981	1982
1.	HOW MANY DAYS OF UNSCHEDULES OUTAGES CAN BE ATTRIBUTED TO STEAM GENERATOR-RELATED DIFFICULTIES PER YEAR AT YOUR SITE?	21 (3)	34 (3)	24 (3)	0
2.	DURING EACH OF THE YEARS IN QUESTION, HOW MANY STEAM GENERATOR TUBES HAVE BEEN PLUGGED IN EACH STEAM GENERATOR?	S/G 11: 6 S/G 12: 0 S/G 21: 8 S/G 22: 0	S/G 11: 0 S/G 12: 1 S/G 21: 3 S/G 22: 15	S/G 11: 25 S/G 12: 2 S/G 21: 4 S/G 22: 38	S/G 11: N/A (1) S/G 12: N/A (1) S/G 21: 15 S/G 22: 12
	SLEEVED IN EACH STEAM GENERATOR?	0	0	0	0
4	WHAT HAVE BEEN THE TOTAL COSTS AND SPECIFICALLY REPLACEMENT POWER COSTS ASSOCIATED WITH STEAM GENERATOR MAINTENANCE, REPAIR AND REPLACEMENT AT YOUR PLANT?	(in 1000 dollars) 1,560	3,888	2,786	1,141
5	WHAT HAS BEEN THE TOTAL OCCUPATIONAL RADIATION EXPOSURE (IN PERSON-REMS) CAUSED BY STEAM GENERATOR MAINTENANCE?	14.6 Rem	32 Rem	33 Rem	17.6 Rem (2)
	REPAIR/REPLACEMENT?	0	0	0	0
6	WHAT PERCENTAGE OF TOTAL ANNUAL EMPLOYEE DOSE HAS BEEN ATTRIBUTABLE TO STEAM GENERATOR RELATED WORK AT YOUR SITE(S)?	9.5%	16.3%	17.9%	N/A (1)
7	DURING THE YEARS IN QUESTION HOW MANY WORKERS HAVE RECEIVED MEASUREABLE RADIATION DOSES FOR STEAM GENERATOR RELATED WORK?	60 (4)	110 (4)	90 (4)	N/A (1)
	WHAT PERCENTAGE OF THE TOTAL WORKFORCE DO THESE WORKERS REPRESENT?	5.5%	7.1%	6.7%	N/A (1)
8	HOW MANY TEMPORARY WORKERS (defined by the NRC as all workers other than those hired directly by nuclear power plants on a conventional, long-term basis) RECEIVED DOSES FROM STEAM GENERATOR-RELATED WORK AT YOUR FACILITY EACH YEAR?	50 (4)	100 (4)	80 (4)	N/A (1)
9	WHAT PERCENTAGE OF TOTAL WORKERS INVOLVED WITH STEAM GENERATOR-RELATED WORK DO TEMPORARY WORKERS REPRESENT?	83%	90%	90%	N/A (1)
	THE TOTAL WORKFORCE DO TEMPORARY WORKERS REPRESENT?	15%	15%	15%	15%
10	HAS YOUR COMPANY USED INDEPENDENT FIRMS TO FIND TEMPORARY EMPLOYEES WHO HAVE RECEIVED AN OCCUPATIONAL DOSE FROM STEAM GENERATOR-RELATED WORK?	Yes	Yes	Yes	Yes
3	DO YOU ANTICIPATE MAJOR STEAM GENERATOR REPAIRS IN ANY OF YOUR UNITS IN THE NEXT FIVE YEARS, AND IF SO HOW MUCH WOULD THESE REPAIRS COST, PLEASE SPECIFY.	No			

(1) This data is not available since Unit 1 1982 refueling outage is not complete.

(2) This exposure was the amount received by personnel working on the steam generators for Unit 2 during 1982.

(3) Includes the days a refueling outage was extended due to problems discovered with the steam generator during the outage.

(4) These numbers are approximate.

Telephone (617) 872-8
TWX 710-380-7811

YANKEE ATOMIC ELECTRIC COMPANY

1671 Worcester Road, Framingham, Massachusetts 01701

November 29, 1982

United States Nuclear Regulatory Commission
Washington, D. C. 20555

Attention: Mr. Dennis M. Crutchfield, Chief
Operating Reactors Branch No. 5
Division of Licensing

References: (a) License No. DPR-3 (Docket No. 50-29)
(b) USNRC Letter to All Licensees, dated October 26, 1982
(c) USNRC Letter to YAEC, dated April 12, 1982

Subject: Request for Information on Steam Generator Tube Integrity

Dear Sir:

The Yankee Plant has a 22-year operating record clearly indicating no appreciable problem in the area of steam generator tube integrity. In response to the request in Reference (b), the following information is provided.

1. For the years requested (1979-1982) there were no steam generator-related difficulties sufficient to cause an unscheduled outage. The original steam generators remain operational with an excellent performance record, and we anticipate no major steam generator repairs during the next five years.

2. The history on steam generator tube plugging is documented in Reference (c). No steam generator inspections were performed in 1979. For 1980, 1981, and 1982, the total number of tubes plugged were 0, 3, and 9, respectively. To date, less than 2% of the total number of steam generator tubes have been plugged (125 out of 6,480 total tubes). No tubes have been sleeved.

3. Steam generator maintenance and tube inspection is normally performed during a refueling outage. The total costs associated with tube plugging occurring in 1981 and 1982 were approximately $50,000 and $125,000, respectively. Replacement power costs are associated with the scheduled shutdown and, therefore, not included.

4. The occupational exposures (in person-rems) for steam generator tube inspections and plugging for 1980, 1981, and 1982 are 3.8, 21, and 30.15, respectively.

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3. The total number of workers receiving measureable radiation doses for steam generator inspection and tube plugging for 1980, 1981, and 1982 were 15, 50, and 78, respectively, representing 0.8%, 2.4%, and 6% of the total work force for those years. Sixty-four percent (64%) of those workers who performed the steam generator inspections and tube plugging represented temporary or contractor workers.

We trust this information satisfies your request.

Very truly yours,

YANKEE ATOMIC ELECTRIC COMPANY

J. A. Kay

J. A. Kay
Senior Engineer - Licensing

JAK/dd

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

October 26, 1982

TO ALL PRESSURIZED POWER REACTOR LICENSEES

Gentlemen:

SUBJECT: CONGRESSIONAL REQUEST FOR INFORMATION CONCERNING STEAM GENERATOR TUBE INTEGRITY (GENERIC LETTER NO. 82-22)

Representative Edward J. Markey, Chairman of the Subcommittee on Oversight and Investigation has, by letter dated October 19, 1982, requested that the NRC submit questions to utilities regarding steam generator tube integrity. His letter, copy enclosed, specifically identifies the information requested.

In order to obtain answers to these questions before Congressional hearings on this subject tentatively scheduled for December 2, 1982, it would be most helpful if the answers were mailed to NRC no later than November 25, 1982. Please let us know your plans concerning this request.

This request for information was approved by the Office of Management & Budget under clearance number 3150-0092 which expires November 30, 1982.

Sincerely,

Darrell G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation

Enclosure:
As Stated

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