Approved 7/9/03 Effective 7/17/03

Condition Report Engineering Disposition Form

Assignment No: _____ Page 1 of 44

CR No.: M2-03-10511

Disposition:

☐ CRED Not Required ☐ Repair

☐ Rework ☒ Use As is

Disposition Justification

During the Secondary Side Foreign Object Search and Retrieval (FOSAR), the vendor identified four pieces of flexitallic gasket, which had not been previously identified or evaluated to remain in the steam generator. Additionally, he also identified that this material was not retrievable. Although this material was visually inspected, it remains on the tubesheet at the following locations:

Piece 1 –HL	Piece 2 –HL	Piece 3 –CL	Piece 4—HL
R123 L122	R133 L 110	R32 L5	R134 L109
R124 L123 [1]	R132 L111	R33 L4	R135 L108
		R34 L5	

Note 1 Originally identified as R123 L121. The correct tube is R124, L123.

The CRED allows the irretrievable material to remain in the steam generator. This issue was addressed during RF13 in a previous CRED for CR-00-01234. This situation (i.e., evaluation of flexatillic gasket) is bounded by that CRED and the associated FTI Evaluation. That CRED allowed two flexatillic gaskets to remain in the steam generator. ECT testing, after two operating cycles, identified zero wear rate for those components. That CRED remains valid also.

AWO#: M2-02-13339 Continuation sheets attached ☒

50.59 Screen (Required for "Non-Document or Non-Design Change" repair and use-as-is disposition) ☒ Yes ☐ No

Change Type:

☐ DCR/MMOD ☐ Specification Change

☐ EE ☐ MEPL Upgrade

☐ Temporary Modification ☐ Other: _____

☐ Calculation Change ☒ Non-Document or Non-Design Change

Preparer	Lawrence Loomis	Lawrence E Loomis	10/26/03
	print	sign	Date
If QA, DCM03 may require an IR Independent Reviewer	R.B. Dillon	R B Dillon	10/26/03
	print	sign	Date
Approver	HARVEY BEEMAN	H. Beeman	10/26/03
	print	sign	Date

Information in this record was deleted in accordance with the Freedom of Information Act, exemptions 4
FOIA- 2005-0210

E12

Condition Report Engineering Disposition Form

Assignment No: CR No.: M2-03-10511

The potential failure mechanism related to loose parts or foreign material in the steam generator is localized damage. The damage or degradation could occur as either immediate impact damage or long-term (usually years) fretting/wear damage. FTI Engineering Information Record 51-5008373-01, "Input to a Safety Evaluation for Millstone Unit 2 Steam Generators" (Attachment 1), provides reasonable assurance that, based on the part size, mass, and FTI flow induced vibration analysis, the loose parts will not result in wall degradation in excess of the tube plugging limits (i.e., 40 % nominal wall thickness) over the operating life of the steam generators. (Based on the location (i.e., tube sheet), part size, and same material, the new foreign material is bounded by this original FTI evaluation).

Potential Impact Damage

The possibility of tube damage resulting from impact does not exist. The gasket remnants, remaining in the generator, have very small mass distributed over approximately 4" in length (i.e., low density material). Consequently, movement of these parts will not result in the generation of sufficient energy to cause tube damage

Potential Fretting Damage

As identified in FTI Engineering Information Record 51-5008373-01, "Input to a Safety Evaluation for Millstone Unit 2 Steam Generators", the flex gasket is thinner and same relative hardness as the tube. Consequently, it would wear through before a tube developed significant damage. This is consistent with the historical data obtained at MP2.

During RF13, tubes at locations R50, L7, R52, L7, R44, L85, R46, L85 and R45, L86 were identified as having irretrievable foreign material. Visual inspection confirmed they were in contact with Flexitallic Gasket. These tubes were Eddy Current Tested during RF15. The results are provided in Attachment 2, which identifies no damage had incurred to these tubes over two operating cycles.

Attachment 3 provides the ECT results documenting the fact that, although the new material has been present for some undistinguished time, there has been no resulting tube damage. The location of the new gasket material is consistent with the material identified during R13. That is, as identified by visual inspection, all gaskets are located on the tubesheet. As shown on the Attachment 2 inspection sheets, material located on the tubesheet has not resulted in tube damage.

During R15, MP2 identified minor tube damage resulting from tube to flexitallic interaction. All damage was associated with flexitallic gaskets located within 7 inches of the lower support plate (Hot or Cold). The five flexitallic gaskets causing the damage were removed and determined to be greater than 7 inches in length. To date no tube damage has been identified relating to any flexitallic gasket removed, or remaining, on the tube sheet. However, Eddy Current Examinations, in accordance with NEI 97-06, will provide assurance that preventive actions can be taken prior to degradation, which could result in tube leakage. Millstone performs all SG ECT Examinations in accordance with NEI 97-06.

Conclusion/Disposition

USE-AS_IS

Based on the discussion above, historical data, and the referenced FTI Report, leaving the foreign material in the steam generators is acceptable and will not result in unacceptable tube degradation. Although not expected, degradation could occur over time. However, Eddy Current Examinations, in accordance with NEI 97-06, will provide assurance that preventive actions can be taken prior to tube leakage.

Attachment 1

FTI Engineering Information Record
51-5008373-01

INPUT TO A SAFETY EVALUATION FOR MILLSTONE UNIT 2 STEAM GENERATORS

PKD

FRAMATOME
TECHNOLOGIES

May 15, 2000
FTI-00-1353

Mr. J. P. Johannemann
Northeast Utilities Services Company
Millstone Unit 2
P.O. Box 128
Rope Ferry Road
Waterford, Connecticut 06385

Reference: P.O. 02126322 Rev. 001, Release 001 dated 01/03/00

Subject: Millstone 2 – Safety Evaluation of Foreign Objects

Dear Jack:

Enclosed please find FTI Document No. 51-5008373-01, "Input to a Safety Evaluation for Millstone Unit 2 Steam Generators." This report addresses operation of Millstone 2 with known and potential loose parts at the secondary face of the steam generator tubesheet. The evaluation concludes that leaving known or unidentified objects similar to those removed from the SG's during 2R13 does not represent an unreviewed safety question for two cycles of future operation.

Please call either R. Schaefer at (804) 832-4009 or me if you have questions or require additional information.

Very truly yours,

Frank J. Levandoski
Sr. Project Manager

FJL-66:gl
Enclosure

c: L. E. Loomis, Millstone
K. A. Colgan, Millstone

155 Mill Ridge Road, Lynchburg, VA 24502-4341
Telephone: 804-832-3700 Fax: 804-832-0622
Internet: http://www.framatech.com

FRAMATOME TECHNOLOGIES

ENGINEERING INFORMATION RECORD

Document Identifier 51 - 5008373-01

Title Input to a Safety Evaluation for Millstone Unit 2 Steam Generators

PREPARED BY:		REVIEWED BY:	
Name	MS Leenierts	Name	JA Crockett
Signature		Signature	
Date	5-16-00	Date	5-16-00

Technical Manager Statement: Initials WDB

Reviewer is Independent.

Remarks:

This Safety Evaluation addresses the safety significance of operating the Millstone Unit 2 Nuclear Power Station with known foreign objects on the tubesheet secondary face in steam generator 22 (SG22) and other potential loose objects in both steam generators. Although none of the foreign objects has caused known tube degradation, a safety evaluation is being performed to document the location and characterization of each object and to assess its safety significance. This evaluation also addresses the safety significance of operating during the last two operating cycles with other objects that were removed from the steam generators. The evaluation also addresses the safety significance if these parts had not been removed from the steam generators.

Conclusions:

Based upon the evaluations presented herein, leaving the known objects on the SG22 tubesheet secondary face, as they currently exist and leaving in either steam generator other unidentified objects similar to those removed from both steam generators satisfies all parts of the 50.59 safety evaluation and is not an unreviewed safety question for two cycles of operation. However, for this evaluation to remain valid for more than two cycles of operation, ECT of the tube locations listed in Table 1 is required at a minimum to verify that conditions evaluated have not changed.

FRAMATOME TECHNOLOGIES

WORK INSTRUCTION WI-31
CONDITION REPORT

2306 4044

CR# 6003118 REV # 0 PAGE 1 OF 4

SECTION 1 INITIATION

CONTRACT 1011093 CUSTOMER/SITE/UNIT: Northeast Nuclear Energy / Millstone / 2

TECHNICAL DOCUMENT#: 1278909A Rev. 1 SEQUENCE/STEP #: 5

DESCRIPTION OF CONDITION:

Identified foreign material in the secondary side of the steam generators at Millstone Unit 2. See attached list.

INITIATOR: Joseph A. Crockett (NAME) DATE/TIME: 5/13/00

PRIORITY ☒ 1 ☐ 2 ☐ 3

SENT TO: Joseph A. Crockett (NAME) REQUESTED COMPLETION DATE: 5/16/00

☐ FOR TRENDING/TRACKING ONLY – NO RESPONSE REQUIRED

SECTION 2 IMPLICATION RESOLUTION/DISPOSITION/PREVENTATIVE ACTION

IMPLICATION: ☒ SAFETY-RELATED ☐ ASME CODE ☐ NON SAFETY-RELATED ☐ NON QA PROGRAM

☐ IMPROVEMENT ☐ OTHER:

TYPE: ☒ CUSTOMER "AS FOUND" ☐ INTERNAL ITEM ☐ OTHER:

NOTIFICATION/RECOMMENDED RESOLUTION/DISPOSITION:

Material was retrieved where possible. The foreign material and steam generator condition were evaluated and found acceptable, reference: document #51-5008373., Input To A Safety Evaluation For Millstone Unit 2.

CAUSE CODE: None

PREVENTATIVE ACTION: ☐ REQUIRED ☒ NONE REQUIRED

APPLICABLE TO OTHER CONTRACTS: ☐ YES ☒ NO

RESOLUTION:

AFFECTED ORGANIZATION: SG Operations SCHEDULED COMPLETION DATE: 5/16/00

RESPONSIBLE INDIVIDUAL/ENGINEER: [signature] (SIGNATURE) Joseph A. Crockett (NAME) 5/13/00 (DATE)

ACTION REQUIRED BY: ☐ CUSTOMER ☐ QA ☐ OTHER

FRAMATOME TECHNOLOGIES

WORK INSTRUCTION WI-31
CONDITION REPORT CONTINUATION

24 of 4944
DRD

CR# 6003118 REV # 0 PAGE 2 OF 4

SECTION 3 APPROVAL/ACKNOWLEDGEMENT/CONCURRENCE

REVIEWER:	(SIGNATURE)	MS Egnezis (NAME)	5/13/00 (DATE)
UNIT MANAGER:	(SIGNATURE)	Per Telecon w/ WD Belden (NAME)	5/13/00 (DATE)
CUSTOMER (If required) ☒ APPROVAL ☐ ACKNOWLEDGEMENT	(SIGNATURE)	Lawrence E Loomis (NAME)	5/16/00 (DATE)
QA Approval (If required)	N/A (SIGNATURE)	(NAME)	(DATE)
OTHER (If required) ☐ APPROVAL ☐ ACKNOWLEDGEMENT ☐ CONCURRENCE	N/A (SIGNATURE)	(NAME/TITLE/ORGANIZATION)	(DATE)

SECTION 4 ENGINEERING EVALUATION/NOTIFICATION/ACTIONS COMPLETED

THE ACTIONS SPECIFIED IN SECTION 2 HAVE BEEN COMPLETED.

VERIFIED BY:	(SIGNATURE)	GARY R. LIVESAY (NAME)	5/16/00 (DATE)
QA (OTHER) if required:	N/A (SIGNATURE)	(NAME)	(DATE)

SECTION 5 PREVENTATIVE ACTION COMPLETION

THE PREVENTATIVE ACTIONS SPECIFIED IN SECTION 2 HAVE BEEN COMPLETED. THIS CR IS CLOSED.

VERIFIED BY:	(SIGNATURE)	GARY R. LIVESAY (NAME)	5/16/00 (DATE)
QA (OTHER) if required:	N/A (SIGNATURE)	(NAME)	(DATE)

DISTRIBUTION:

Project Engineer JA Crockett	Records Management -- T6.18	Other
Unit Technical Manager WD Belden	QA Manager Performance & Analysis	Specify

CR #6003118
Millstone Unit 2 Foreign Objects
Page 3 of 4

OBJECT	LOCATION	DISPOSITION
Wedged Hex Piece	SG 2 Hot Leg R94 - L139 R93 – L140 R95 – L140	Unable to retrieve
Weld Wire	SG 2 Hot Leg R26 – L21 R27 – L20 R28 – L21 R29 – L20	Unable to retrieve
Weld Wire	SG 2 Cold Leg R93 – L130 R94 – L129 R95 – L130 R96 – L129 R97 – L130 R98 – L129 R99 – L130 R100 – L129 R101 – L130 R102 – L129	Unable to retrieve
Weld Wire	SG 2 Hot Leg R47 – L36 R45 – L36 R46 – L37	Unable to retrieve
Gasket Material	SG 2 Hot Leg R50 – L7 R52 – L7	Unable to retrieve
Flat Metal Piece ~1 ½ L x ½ x 1/32 thick	Hot Leg SG 1	Removed from SG 1
Gasket Material 12" long	Hot Leg SG 2	Removed from SG 2
Gasket Material ~4 " long	Hot Leg SG 2	Removed from SG 2
Gasket Material ~5" long	Cold Leg SG 2	Removed from SG 2

CR #6003118
Millstone Unit 2 Foreign Objects

OBJECT	LOCATION	DISPOSITION
Gasket Material ~5" long	Cold Leg SG 2	Removed from SG 2
Gasket Material ~6" long	Cold Leg SG 2	Removed from SG 2
Gasket Material ~4" long	Cold Leg SG 2	Removed from SG 2
Gasket Material ~2" long	Cold Leg SG 2	Removed from SG 2
Gasket Material 6" long	Hot Leg SG 2	Removed from SG 2
Gasket Material 6" long	Hot Leg SG 2	Removed from SG 2
Gasket Material 6" long	Hot Leg SG 2	Removed from SG 2
Gasket Material 3 ½" Long	Cold Leg SG 2	Removed from SG 2
Gasket Material	SG 2 Cold Leg R44 – L85 R46 – L86	Unable to retrieve
Gasket Material 6 - 7" long	Hot Leg SG 2	Removed from SG 2
Gasket Material 7 - 8" long	Hot Leg SG 2	Removed from SG 2
Gasket Material 7" long	Hot Leg SG 2	Removed from SG 2
Weld Wire 2" Long	Hot Leg SG 2	Removed from SG 2
Gasket Material 1" long	Hot Leg SG 2	Removed from SG 2

27 of 404
RED

Attachment 2

RF15 ECT RESULTS

TUBES IDENTIFIED WITH FLEXATELLIC GASKETS DURING RF13

Note: No defect identified

ECT Inspection Results for 2RFO14 H/L FOSAR reporting

Millstone Unit 2
Steam Generator No. 2

Cycle 2 RFO 15

Row	Col	Volts	Deg	Chan	Indn	Percent	Location	Util1	Util2	Cal	Probe	Extent Tested	Plan	Date
44	85													
								0	SG2H003A	SG2H030	610BOB	TECTEH	SG2-H-BOB	0/21/2003
								0	SG2C001A	SG2C001	610RPC	TSCTSC	SG2-C-RPCP	0/24/2003
45	86													
								0	SG2H003A	SG2H029	610BOB	TECTEH	SG2-H-BOB	0/21/2003
								0	SG2C001A	SG2C001	610RPC	TSCTSC	SG2-C-RPCP	0/24/2003
46	85													
								0	SG2H003A	SG2H029	610BOB	TECTEH	SG2-H-BOB	0/21/2003
								0	SG2C001A	SG2C001	610RPC	TSCTSC	SG2-C-RPCP	0/24/2003
50	7													
								0	SG2H002A	SG2H012	610BOB	TECTEH	SG2-H-BOB	0/19/2003
								0	SG2H006A	SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
52	7													
								0	SG2H002A	SG2H011	610BOB	TECTEH	SG2-H-BOB	0/19/2003
								0	SG2H006A	SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003

Total Tubes: 5

Attachment 3

RF15 ECT DATA

TUBES ASSOCIATED WITH FOREIGN MATERIAL

ECT Inspection Results for H/L FOSAR reporting Millstone Unit 2

Cycle 2RFO15 Steam Generator No. 2

Row	Col	Volts	Deg	Chan	Indn	Percent	Location	Util1	Util2	Cal	Probe	Extent Tested	Plan	Date
26	21													
		0.45	97	14	PLP		TSH	0.48		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
		0.39	230	8	PLP		TSH	0.76	LA	SG2H010	610BOB	TECTEH	SG2-H-BOB	0/19/2003
		0.45	94	14	PID		TSH	0.48		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
27	20													
		0.47	95	14	PLP		TSH	0.75		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
					NDF		TSH	1.55		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
		0.46	93	14	PID		TSH	0.75		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
		0.6	229	8	PLP		TSH	1.55	LA	SG2H009	610BOB	TECTEH	SG2-H-BOB	0/19/2003
28	21													
		0.41	92	14	PID		TSH	0.96		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
		0.48	232	8	PLP		TSH	2.22	LA	SG2H009	610BOB	TECTEH	SG2-H-BOB	0/19/2003
					NDF		TSH	2.22		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
		0.43	95	14	PLP		TSH	0.96		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
29	20													
		0.47	236	8	PLP		TSH	2.76	LA	SG2H010	610BOB	TECTEH	SG2-H-BOB	0/19/2003
		0.42	94	14	PID		TSH	1.27		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
					NDF		TSH	2.76		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
		0.45	97	14	PLP		TSH	1.27		SG2H065	610RPC	TSHTSH	SG2-H-RPCP	0/24/2003
123	122													
								0		SG2H077	610RPC	TSHTSH	SG2-H-PLP	0/25/2003
								0		SG2H045	610BOB	TECTEH	SG2-H-BOB	0/22/2003
124	123													
								0		SG2H046	610BOB	TECTEH	SG2-H-BOB	0/22/2003
132	111													
								0		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
								0		SG2H040	610BOB	TECTEH	SG2-H-BOB	0/22/2003
133	110													
								0		SG2H040	610BOB	TECTEH	SG2-H-BOB	0/22/2003
								0		SG2H077	610RPC	TSHTSH	SG2-H-PLP	0/25/2003
134	109													
								0		SG2H077	610RPC	TSHTSH	SG2-H-PLP	0/25/2003
								0		SG2H040	610BOB	TECTEH	SG2-H-BOB	0/22/2003
135	108													
								0		SG2H069	610RPC	TSHTSH	SG2-H-PLP	0/24/2003
								0		SG2H040	610BOB	TECTEH	SG2-H-BOB	0/22/2003

Total Tubes: 10

ECT Inspection Results for C/L FOSAR reporting Millstone Unit 2

Cycle 03-1 Steam Generator No. 2

Row	Col	Volts	Deg	Chan	Indn	Percent	Location	Util1	Util2	Cal	Probe	Extent Tested	Plan	Date
28	5													
		0.19	100	5		23	01C	-2.44		SG2C003S	610RPC	01C01C	SG2-C-SIZ	0/25/2003
		0.19	109	5	VOL		01C	-2.49		SG2C002	610RPC	01C01C	SG2-C-RPCI	0/25/2003
					PRC		01C	-2.49		SG2C003	610RPC	01C01C	SG2-C-RPCI	0/25/2003
		0.44	132	3	LPI		TSC	21.59	LA	SG2H011	610BOB	TECTEH	SG2-H-BOB	0/25/2003
		0.54	121	3	PID		TSC	21.59		SG2H057	610BOB	TECTEH	SG2-H-BOB	0/25/2003
32	5													
								0		SG2H011	610BOB	TECTEH	SG2-H-BOB	0/19/2003
33	4													
								0		SG2H012	610BOB	TECTEH	SG2-H-BOB	0/19/2003
34	5													
								0		SG2H012	610BOB	TECTEH	SG2-H-BOB	0/19/2003
59	10													
					PRC		01C	-6.89		SG2C003	610RPC	01C01C	SG2-C-RPCI	0/25/2003
		0.13	84	5		21	01C	-6.69		SG2C003S	610RPC	01C01C	SG2-C-SIZ	0/25/2003
		0.13	84	5	VOL		01C	-6.89		SG2C002	610RPC	01C01C	SG2-C-RPCI	0/25/2003
		0.51	109	3	PID		TSC	17.28		SG2H057	610BOB	TECTEH	SG2-H-BOB	0/25/2003
		0.46	113	3	LPI		TSC	17.28	LA	SG2H009	610BOB	TECTEH	SG2-H-BOB	0/25/2003

Total Tubes: 5

TUBE HISTORY 123 122

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/03/2000	123	122	0	0			0		0	0	TECTEH	SG2H061	600BOB		SG2-H-SLG
00-1	05/04/2000	123	122	0.44	133	3	INR	0	F05	14.76	0	TECTEH	SG2H061	600BOB		SG2-H-BOB
03-1	10/25/2003	123	122	0	0			0		0	0	TSHTSH	SG2H077	610RPC		SG2-H-PLP
03-1	10/22/2003	123	122	0	0			0		0	0	TECTEH	SG2H045	610BOB		SG2-H-BOB
91-1	08/15/1991	123	122	3.23	0	4	MBH	0	F05	14.76	0	TECTEH	068A-02	600BOB		SG2-H-BOB
92-1	12/14/1992	123	122	0	0			0		0	0	TEHTEC	00034	600BOB		SG2-C-BOB

TUBE HISTORY 124 123

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDH	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	124	123	0	0			0		0	0	TECTEH	SG2H060	600BOB		SG2-H-SLG
00-1	05/04/2000	124	123	0	0			0		0	0	TECTEH	SG2H060	600BOB		SG2-H-BOB
03-1	10/22/2003	124	123	0	0			0		0	0	TECTEH	SG2H046	610BOB		SG2-H-BOB
91-1	08/08/1991	124	123	0	0			0		0	0	TECTEH	070A-01	600BOB		SG2-H-BOB
92-1	12/14/1992	124	123	0	0			0		0	0	TEHTEC	00034	600BOB		SG2-C-BOB
94-1	10/19/1994	124	123	0	0			0		0	0	TECTEH	041	600BOB		SG2-H-BOB
97-1	06/21/1997	124	123	0	0			0		0	0	TECTEH	SG2H035	600BOB		SG2-H-BOB

TUBE HISTORY 133 110

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	133	110	0	0			0		0	0	TEHTEC	SG2H052	600B08		SG2-H-SLG
00-1	05/04/2000	133	110	0	0			0		0	0	TECTEH	SG2H052	600B08		SG2-H-BOB
03-1	10/25/2003	133	110	0	0			0		0	0	TSHTSH	SG2H077	610RPC		SG2-H-PLP
03-1	10/22/2003	133	110	0	0			0		0	0	TECTEH	SG2H040	610B08		SG2-H-BOB
91-1	08/10/1991	133	110	0	0			0		0	0	TECTEH	094A-01	600B08		SG2-H-BOB
92-1	12/13/1992	133	110	0	0			0		0	0	TEHTEC	00024	600B08		SG2-C-BOB
94-1	10/19/1994	133	110	0	0			0		0	0	TECTEH	043	600B08		SG2-H-BOB
97-1	06/21/1997	133	110	0	0			0		0	0	TECTEH	SG2H033	600B08		SG2-H-BOB

S706 SG 47

TUBE HISTORY 132 111

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	132	111	0	0			0		0	0	TEHTEC	SG2H052	600BOB		SG2-H-SLG
00-1	05/04/2000	132	111	0	0			0		0	0	TECTEH	SG2H052	600BOB		SG2-H-BOB
03-1	10/24/2003	132	111	0	0			0		0	0	TSHTSH	SG2H069	610RPC		SG2-H-PLP
03-1	10/22/2003	132	111	0	0			0		0	0	TECTEH	SG2H040	610BOB		SG2-H-BOB
91-1	08/15/1991	132	111	0	0			0		0	0	TECTEH	092A-01	600BOB		SG2-H-BOB
92-1	12/13/1992	132	111	0	0			0		0	0	TEHTEC	00024	600BOB		SG2-C-BOB
94-1	10/19/1994	132	111	0	0			0		0	0	TECTEH	041	600BOB		SG2-H-BOB
97-1	06/21/1997	132	111	0	0			0		0	0	TECTEH	SG2H033	600BOB		SG2-H-BOB

TUBE HISTORY 32 5

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	IMDH	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	32	5	0	0			0		0	0	TECTEH	SG2H013	600BOB		SG2-H-SLG
00-1	05/04/2000	32	5	0	0			0		0	0	TECTEH	SG2H013	600BOB		SG2-H-BOB
03-1	10/19/2003	32	5	0	0			0		0	0	TECTEH	SG2H011	610BOB		SG2-H-BOB
91-1	08/03/1991	32	5	0	0			0		0	0	TECTEH	009A-01	600BOB		SG2-H-BOB
92-1	12/12/1992	32	5	0	0			0		0	0	TEHTEC	00004	600BOB		SG2-C-BOB

TUBE HISTORY 33 4

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	33	4	0	0			0		0	0	TECTEH	SG2H014	600BOB		SG2-H-SLG
00-1	05/04/2000	33	4	0	0			0		0	0	TECTEH	SG2H014	600BOB		SG2-H-BOB
03-1	10/19/2003	33	4	0	0			0		0	0	TECTEH	SG2H012	610BOB		SG2-H-BOB
91-1	08/03/1991	33	4	0	0			0		0	0	TECTEH	009A-01	600BOB		SG2-H-BOB
92-1	12/12/1992	33	4	0	0			0		0	0	TEHTEC	00004	600BOB		SG2-C-BOB
94-1	10/18/1994	33	4	0	0			0		0	0	TECTEH	009	600BOB		SG2-H-BOB
97-1	06/20/1997	33	4	0	0			0		0	0	TECTEH	SG2H012	600BOB		SG2-H-BOB

TUBE HISTORY 34 5

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	34	5	0	0			0		0	0	TECTEH	SG2H014	600B08		SG2-H-SLG
00-1	05/04/2000	34	5	0	0			0		0	0	TECTEH	SG2H014	600B08		SG2-H-B08
03-1	10/19/2003	34	5	0	0			0		0	0	TECTEH	SG2H012	610B08		SG2-H-B08
91-1	08/03/1991	34	5	0	0			0		0	0	TECTEH	009A-01	600B08		SG2-H-B08
92-1	12/12/1992	34	5	0	0			0		0	0	TEHTEC	00004	600B08		SG2-C-B08
94-1	10/18/1994	34	5	0	0			0		0	0	TECTEH	009	600B08		SG2-H-B08

TUBE HISTORY 134 109

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	INDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	134	109	0	0			0		0	0	TECTEH	SG2H053	600BOB		SG2-H-SLG
00-1	05/02/2000	134	109	0.18	65	3	INR	0	06H	4.07	0	TECTEH	SG2H053	600BOB		SG2-H-BOB
00-1	05/02/2000	134	109	0.46	102	6	INR	0	01C	13.59	0	TECTEH	SG2H053	600BOB		SG2-H-BOB
03-1	10/25/2003	134	109	0	0			0		0	0	TSHTSH	SG2H077	610RPC		SG2-H-PLP
03-1	10/22/2003	134	109	0	0			0		0	0	TECTEH	SG2H040	610BOB		SG2-H-BOB
91-1	08/10/1991	134	109	3.97	0	4	MBM	0	06H	3.97	0	TECTEH	094A-01	600BOB		SG2-H-BOB
91-1	08/10/1991	134	109	3.8	0	4	MBM	0	01C	13.54	0	TECTEH	094A-01	600BOB		SG2-H-BOB
92-1	12/13/1992	134	109	3.39	0	4	MBM	0	01C	13.57	0	TEHTEC	00022	600BOB		SG2-C-BOB
92-1	12/13/1992	134	109	3.52	0	4	MBM	0	06H	3.73	0	TEHTEC	00022	600BOB		SG2-C-BOB
94-1	10/19/1994	134	109	0.53	185	1	INR	0	06H	3.78	0	TECTEH	041	600BOB		SG2-H-BOB
94-1	10/19/1994	134	109	0.17	162	1	INR	0	01C	13.45	0	TECTEH	041	600BOB		SG2-H-BOB
97-1	06/21/1997	134	109	0.8	168	1	INR	0	01C	13.45	0	TECTEH	SG2H033	600BOB		SG2-H-BOB
97-1	06/21/1997	134	109	0.6	174	1	INR	0	06H	3.78	0	TECTEH	SG2H033	600BOB		SG2-H-BOB

TUBE HISTORY 135 108

Steam Generator No. 2
Millstone Unit 2

OUTAGE	DATE	ROW	COL	VOLTS	ANGLE	CHANNEL	IMDN	PCT	LOCATION	ELEVATION		EXTENT	CAL	PROBE	COMMENT	PLAN
00-1	05/02/2000	135	108	0	0			0		0	0	TECTEH	SG2H053	600B08		SG2-H-SLG
00-1	05/02/2000	135	108	0	0			0		0	0	TECTEH	SG2H053	600B08		SG2-H-B08
03-1	10/24/2003	135	108	0	0			0		0	0	TSHTSH	SG2H069	610RPC		SG2-H-PLP
03-1	10/22/2003	135	108	0	0			0		0	0	TECTEH	SG2H040	610B08		SG2-H-B08
91-1	08/10/1991	135	108	0	0			0		0	0	TECTEH	096A-01	600B08		SG2-H-B08
92-1	12/13/1992	135	108	0	0			0		0	0	TEHTEC	00022	600B08		SG2-C-B08
94-1	10/19/1994	135	108	0	0			0		0	0	TECTEH	041	600B08		SG2-H-B08
97-1	06/21/1997	135	108	0	0			0		0	0	TECTEH	SG2H033	600B08		SG2-H-B08

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A. BRIEF DESCRIPTION OF ACTIVITY (Completed by Preparer)

(What is being changed)

The subject CRED identifies the acceptability foreign material (i.e., 4 pieces of flexatillic gaskets) to remain in the steam generator during the next two operating cycles. The CRED documents that, based on the mass and the size of the parts, there will be no adverse impact on the RCS pressure boundary. Additionally, the fact that 100 percent of the tubes in S/G number 2 will be ECT testing, during RF17 to comply with the requirements of NEI 97-06, provides assurance that preventive actions can be taken long before any potential tube leakage.

During the Secondary Side Foreign Object Search and Retrieval (FOSAR), the vendor identified four pieces of irretrievable flexitallic gasket, which had not been previously identified. Although this material was visually inspected, it remains on the tubesheet at the following locations:

Piece 1 –HL
R123 L122
R123 L121

Piece 2 –HL
R133 L110
R132 L111

Piece 3 –CL
R32 L5
R33 L4
R34 L5

Piece 4—HL
R134 L109
R135 L108

The change allows the irretrievable material to remain in the steam generator. This issue was addressed during RF13 in a previous CRED for CR-00-01234. This situation (i.e., evaluation of flexatillic gasket) is bounded by that CRED and the associated FTI Evaluation. That CRED allowed two flexatillic gaskets to remain in the steam generator.. ECT testing, after two operating cycles, identified zero wear rate for those components .

B. SCREENING QUESTIONS (Completed by the Preparer)

1. Does the proposed activity require a change to the Operating License or the Technical Specifications?

[If yes, prepare OL/TS change. If no, document below and continue.]

a. *Justification for determination:*

Technical Specifications and the Operating License do not address secondary side steam generator loose parts. Technical Specification 3.4.5 requires each Steam Generators to be operable based on Inservice Inspection (i.e., ECT). This testing was satisfactory completed.

The CRED identifies that the loose parts, on the secondary side of S/G 2, will not have an adverse impact on the results of the ECT or the RCS Pressure boundary. Therefore, no change in the OL or TS are required.

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2. **Does the proposed activity involve a change to an SSC that adversely affects an UFSAR described *design function*?**

   [If yes, prepare 50.59 evaluation. If no, document below and continue.]

   a. *Justification for determination:*

   This CRED is administrative. The FSAR does not address foreign material within the steam generator. Therefore, acceptance of this CRED will not result in a modification of the facility or change in the operation of a SSC, which would change the design function, as described in the SAR.

   The CRED documents both that the foreign material will have no adverse impact on the S/G (based on the FTI Evaluation, and historical data which established zero growth rate over two operating cycles (i.e.,similar existing material and location) and it being permanently lodged at this location) and the acceptability of the material to remain in the S/G. Consequently, the CRED will not adversely change the Steam Generator design function (i.e., RCS Pressure Boundary), as described in the SAR.

3. **Does the proposed activity involve a change to a procedure that adversely affects how UFSAR described SSC design functions are performed or controlled?**

   [If yes, prepare 50.59 evaluation. If no, document below and continue.]

   a. *Justification for determination:*

   This CRED is administrative in that it documents that the foreign material, based on a Location, Size, FTI report, and historical data, will have no adverse impact on the S/G. That it is acceptable for the material to remain in the S/G. The CRED does not adversely affect any design functions.

4. **Does the proposed activity involve revising or replacing an UFSAR described evaluation methodology that is used in establishing *design bases* or used in the *safety analyses*?**

   [If yes, prepare 50.59 evaluation. If no, document below and continue.]

   a. *Justification for determination:*
   This CRED is administrative in that it documents that the identified foreign material will have no adverse impact on the S/G and that it is acceptable to remain in the S/G. The CRED does not change any evaluation methodology used in establishing design basis

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5. **Does the proposed activity involve a test or experiment not described in the UFSAR where an SSC is utilized or controlled in a manner that is outside the reference bounds of the design for that SSC or is inconsistent with analyses or descriptions in the UFSAR?**

   [If yes, prepare 50.59 evaluation. If no, document below and continue.]

   a. *Justification for determination:*

   This CRED does not involve a test or experiment. It documents that the foreign material will have no adverse impact on the S/G and that it is acceptable to allow it to remain in the S/G. Consequently, it does not involve any test or experiment not addressed in the SAR.

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C. CONCLUSIONS

1. **A O/L or T/S change is required?**

   ☒ No (Screen question 1 answered No)

2. **A 10CFR50.59 Evaluation is required?**

   ☒ No (Screen questions 2, 3, 4 and 5 answered No)

If both 1 and 2 are answered NO, then implement the activity per the applicable procedure for the type of activity.

D. REFERENCES

List the documents (e.g., licensing basis, technical commitments) reviewed, including section numbers where relevant information was found.

Technical Specifications. Section Reviewed:
3/4.4-Reactor Coolant System Coolant Loops and Circulation
3 /4.5 ECCS,
6.9.2.a Special Reports
FSAR Review
4.3 System Design Table 4.3-2 S/G parameters
14.2 Decrease in Heat Removal by Secondary Side
14.3 Decrease in Reactor Inventory
14.6-3 SGTR

E. REVIEW AND APPROVAL

Preparer: Lawrence E Loomis Lawrence E Loomis Date: 10/24/03
Print Name Signature

Reviewer HARVEY BEEMAN H Beeman Date: 10/26/03
Print Name Signature