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An Exelon/British Energy Company

10 CFR 50.90

September 6, 2001
5928-01-20238

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

SUBJECT: ADDITIONAL INFORMATION - LICENSE CHANGE APPLICATION NO. 291 – ONCE THROUGH STEAM GENERATOR (OTSG) SURVEILLANCE SPECIFICATIONS APPLICABILITY FOLLOWING CYCLE 13

THREE MILE ISLAND, UNIT 1 (TMI UNIT 1)
OPERATING LICENSE No. DPR-50
NRC DOCKET No. 50-289

On December 6, 2000, AmerGen Energy Company, LLC (AmerGen) submitted TMI Unit 1 License Change Application No. 291, requesting an amendment to the TMI Unit 1 Technical Specifications (TS) Surveillance Requirements for inservice inspection of the Once Through Steam Generators regarding inspection and repair of tubes having volumetric Inside Diameter Intergranular Attack (ID IGA) degradation. In response to an NRC request for additional information dated May 22, 2001, AmerGen submitted responses on July 13, 2001 including the Engineering Report ECR No. TM 01-00328, "Three Mile Island Unit 1, Management Program for Volumetric Inside Diameter Intergranular Attack (ID IGA) in the Once-Through Steam Generators." During conference calls on August 21, 2001 and August 23, 2001 AmerGen responded to additional requests from the NRC reviewers. The purpose of this letter is to document the AmerGen response to NRC requests that were addressed in those conference calls.

1) The NRC requested additional detail regarding the statistical tests related to the management program for volumetric ID IGA. Attachment 1 provides the additional information, which was faxed to the NRC after the conference call on August 21, 2001.

2) Technical Specification section 4.19.5.b.6 is being changed to read, "An assessment of growth of inside diameter IGA degradation in accordance with the volumetric ID IGA management program contained in AmerGen Engineering Report,

A047

ECR No. TM 01-00328, and" in the reporting requirements. Attachment 2 provides a hand markup showing the additional wording.

3) Two pages of the AmerGen Engineering Report ECR No. TM 01-00328 will be revised prior to the TMI Unit 1 refueling outage 1R14 to incorporate the following clarifications:

   Page 33: In section 8.3.3, "Step Ic. Perform Paired t-Tests for Change in ID IGA Population," to correct errors indicating that the test is a two-sided test rather than a one-sided test; the mathematical expression "$\alpha/2$" is being changed to "α" in two equations on that page.

   Page 39: In section 9.6.3.2, "Determine Required Number of In Situ Tests," the last sentence in that section is being changed to read: "That is, if in situ pressure tests were performed on these 39 indications, with no leaks, the maximum number of leaking indications in the total population of indications is no more than 105, and the maximum leakage from the generator during an MSLB for the ID IGA indications is no more than 0.1 gpm with 95% confidence."

   Attachment 3 provides a hand markup of pages 33 and 39 of the engineering report showing these changes.

4) NRC Question:

   Provide the technical basis for why the TMI Unit 1 management program for ID IGA does not require statistical tests on axial extent data.

   AmerGen Response:

   In accordance with the AmerGen program for management of TMI Unit 1steam generator tube ID IGA indications, three parameters (bobbin coil voltage, bobbin coil depth, and circumferential length) are being used for statistical analysis to assess the growth of ID IGA using the Sign test and Paired t-test. The reason that axial extent is not used for the statistical tests to assess growth is that the repeatability of circumferential extent measurements is greater than that of the axial extent measurements.

   Repeatability of the axial and circumferential measurements is approximately the same in straight tubing as discussed on Pages 5 and 6 of 62 in our July 13, 2001 letter. At other locations such as tube expansions and near the tube ends, the circumferential extent measurement repeatability is superior to that of the axial extent measurement since there is less variation in the rotational speed of the probe (at approximately 1000 revolutions per minute) than in the axial speed as the probe moves through the tube at approximately 0.5 inches per second. The axial speed may also be potentially influenced by outside factors (e.g., snorkel conditions). The TMI Unit 1 eddy current examination techniques are controlled to assure that at

least 30 samples of eddy current data are acquired per inch of tubing in both the axial and circumferential directions.

Additionally, volumetric ID IGA indications in service at TMI Unit 1 would not grow axially without growing circumferentially. Therefore, AmerGen concludes that the six statistical tests (two tests of three parameters) are sufficient to conservatively assess the growth of ID IGA.

5) Engineering Report ECR No. TM 01-00328, Section 4.4 defines the applicability of the acceptance criteria and states that the criteria also applies to volumetric ID IGA indications located in the lower 5" length of inservice upper tubesheet kinetic expansions within a limited population of tubes having 22" long kinetic expansions within a radial location within 47" of the center of the tubesheet. In response to a request by the NRC, AmerGen has confirmed that this radial distance of 47" (or 0.79 relative radius) is conservative with respect to Figure 3-20 of the contractor report, MPR-1820, Revision 1, "Three Mile Island Nuclear Generating Station OTSG Kinetic Expansion Inspection Criteria Analysis," that was referenced in a July 30, 1999 submittal unrelated to LCA No. 291.

Attachment 4 provides the camera-ready Technical Specification pages to support NRC issuance of an amendment approving TMI Unit 1 LCA No. 291 and Attachment 5 provides a summary of commitments contained in this letter. If you have any questions, please do not hesitate to contact us.

I declare under penalty of perjury that the foregoing is true and correct.

Very truly yours,

Executed on 9/6/01

Mark E. Warner
Vice President, TMI Unit 1

Enclosure: 1) Additional Details Regarding Statistical Tests for the Assessment of Growth of Volumetric Inside Diameter Intergranular Attack (ID IGA)
2) Additional Change to TMI Unit 1 Technical Specification Page 4-81 (Hand Marked)
3) Changes to AmerGen Engineering Report ECR No. 01-00328 (Hand Marked)
4) Camera Ready TMI Unit 1 Technical Specification Pages for Issuance of the Amendment
5) Summary of Regulatory Commitments

cc: H. J. Miller, Administrator, Region I, NRC
J. D. Orr, NRC Senior Resident Inspector, TMI Unit 1

ATTACHMENT 1

ADDITIONAL INFORMATION – LICENSE CHANGE APPLICATION NO. 291

Additional Details Regarding Statistical Tests for the Assessment of Growth of Volumetric Inside Diameter Intergranular Attack (ID IGA)

August 22, 2001

As discussed in the TMI response to RAI No. 5 (see page 34 of 62), the power of paired-t test was considered in the statistical tests which were performed using historical data from Steam Generator A for the outage interval 12R to 13R. This evaluation was performed following the methodology in Chapter 9 of NUREG-1475, "Applying Statistics," January 1995. The actual growth that must exist for the power of the test to be 95% is calculated from the following relationship:

$$u_{.95} = m_0 + u_{crit} + \frac{t_{.95}\, s}{\sqrt{n}}$$

Where:

$u_{.95}$	=	growth based on the power of 95%
u_{crit}, $t_{.95}$, s, n	=	(see Section 8.3.3 of the engineering report)

The results of the evaluation are provided in the attached Table 8 from the statistical calculation. As discussed in the TMI response to RAI No. 5, the calculated cycle growth values for the parameters to provide 95% power for the test are less than the reference values of one-half of the technical specification degraded tube values for bobbin voltage, percent through wall and circumferential extent. In addition, attached is Table 7 from the calculation which provides results of the sign test that was performed using historical data from Steam Generator A for the12R to 13R outage interval.

Table 7. Summary of Results (Sign Test) for Steam Generator A for the Outage Interval 12R to 13R

Does the measured parameter change exceed a small positive value? The significance level selected for the tests is $\alpha = 0.05$.

Statistical Test	Parameter	Δ Bobbin Voltage, volts	Δ % Through–Wall	Δ Circumferential Length, inches
Sign Test	Small Positive Value, m_o	0.05	1	0.01
	Number of Observations, n_{total}	313	146	572
	Number of Observations less than m_o, r	259	90	303
	Critical Value of r, r_{crit}	141	62	265
	Result of Test(1)	$r > r_{crit}$	$r > r_{crit}$	$r > r_{crit}$
	Interpretation of Test Result(1)	**No reason to believe defects are growing**	**No reason to believe defects are growing**	**No reason to believe defects are growing**

Note:

(1) If r is greater than r_{crit}, the conclusion is that there is no reason to believe that the measured parameter change exceeds the small positive value (Reference 2) and, therefore, there is no reason to believe the defects are growing.

Table 8. Summary of Results (Pair-t Test) for Steam Generator A for the Outage Interval 12R to 13R

Does the measured parameter change exceed a small positive value? The significance level selected for the tests is $\alpha = 0.05$.

Statistical Test	Parameter	Δ Bobbin Voltage, volts	Δ % Through–Wall	Δ Circumferential Length, inches
Pair-t Test	Small Positive Value, m_o	0.05	1	0.01
	Standard Deviation, s	0.071	8.12	0.0635
	Difference Between Average and Small Positive Growth, u	-0.046	-0.75	-0.0046
	Critical Statistic, u_{crit}	0.007	1.11	0.0044
	Result of Test(1)	$u < u_{crit}$	$u < u_{crit}$	$u < u_{crit}$
	Interpretation of Test Result(1)	**No reason to believe defects are growing**	**No reason to believe defects are growing**	**No reason to believe defects are growing**
Power of the test	Actual growth range to detect with 95% probability, $u_{95\%}$ (2)	0.063	3.22	0.019

Notes:

(1) If u is less than u_{crit}, the conclusion is that there is no reason to believe that the measured parameter change exceeds the small positive value (Reference 2) and, therefore, there is no reason to believe the defects are growing.

(2) If the actual growth is greater than or equal to $u_{95\%}$, then the probability of failing to detect growth or concluding there is no growth when in fact there is growth (i.e. probability of a Type II error, β) is 5%.

ATTACHMENT 2

ADDITIONAL INFORMATION – LICENSE CHANGE APPLICATION NO. 291

Additional Change to TMI unit 1 Technical Specification Page 4-81 (Hand Marked Page)

4.19.4 Acceptance Criteria (Continued)

5. Defect means an imperfection of such severity that it exceeds the repair limit. A tube containing a defect is defective.

6. Repair Limit means the extent of degradation at or beyond which the tube shall be repaired or removed from service because it may become unserviceable prior to the next inspection.

   This limit is equal to 40% of the nominal tube wall thickness. ~~For operation through Cycle 13 only,~~ inside diameter IGA indications shall be repaired or removed from service if they exceed an axial extent of 0.25 inches, or a circumferential extent of 0.52 inches, or a through wall degradation dimension of ≥ 40% if assigned.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss of coolant accident, or a steam line or feedwater line break as specified in 4.19.3.c., above.

8. Tube Inspection means an inspection of the steam generator tube from the bottom of the upper tubesheet completely to the top of the lower tubesheet, except as permitted by 4.19.2.b.2, above.

9. Inside Diameter Inter-Granular Attack (IGA) Indication means ~~a bobbin coil~~ an indication initiating on the inside diameter surface and confirmed by diagnostic ECT to have a volumetric morphology characteristic of IGA.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (removal from service by plugging, or repair by kinetic expansion, sleeving, or other methods, of all tubes exceeding the repair limit and all tubes containing throughwall cracks) required by Table 4.19-2.

4.19.5 Reports

DELETED

a. ~~After the completion of each inservice inspection of steam generator tubes, prior to exceeding a reactor coolant system (RCS) temperature of 250 °F, the NRC shall be notified of the following:~~

5. ~~X~~ The number of tubes repaired or removed from service in each steam generator,

6. ~~X~~ An assessment of growth of inside diameter IGA degradation, and

7. ~~X~~ Results of in-situ pressure testing, if performed.

in accordance with the volumetric ID IGA management program contained in AmerGen Engineering Report, ECR No. TM 01-00328

MOVE TO 4.19.5 (b), on next page.

ATTACHMENT 3

ADDITIONAL INFORMATION – LICENSE CHANGE APPLICATION NO. 291

Changes to AmerGen Engineering Report, ECR No. TM 01-00328 (Hand Marked Pages)

$t_{1-\alpha}$

$t_{1-\alpha/2}$ = percentile of the t distribution, taken from Table A-4 of Reference 2.14, as a function of level of significance, α and degrees of freedom, df

$u_{crit} = t_{1-\alpha} \frac{s}{\sqrt{n}}$

$u_{crit} = t_{1-\frac{\alpha}{2}} \frac{s}{\sqrt{n}}$

s = standard deviation

df = degrees of freedom = n - 1

If u is less than u_{crit}, it is concluded that there is no reason to believe the measured parameter change is different from zero and there is no reason to believe the defects were growing in the given outage interval. If u is greater than u_{crit}, it is concluded that the defects were growing in the given outage interval.

8.3.4 Step II. Develop Cycle Specific Growth Model

If Step I, above, is successful in demonstrating the lack of statistically significant growth in the ID IGA population, Step II is not necessary. However, in the event that future TMI-1 ID IGA field data indicates that growth is greater than a small positive value change from the historical population, or apparent growth as evidenced by the inability to demonstrate statistically insignificant growth via the procedures in Step I, it will be necessary to develop a cycle-specific model of growth. It may also be necessary to perform additional in situ tests of the larger flaws. This growth model will characterize changes in the mean, variability and extremes of apparent growth and will be important as a basis for a cycle-specific growth allowance to be used in operational assessments for forthcoming cycles.

It may be necessary to re-verify the analyst-to-analyst variability that is applicable to the field data at hand and to evaluate the components of variability so that an accurate model of actual growth can be obtained. Any growth analysis performed using the cycle specific growth model described here will require a revision to this report to include information substantiating the growth conclusions reached and the basis for the conclusions. The revised report will be submitted in a license amendment to the NRC well ahead of the subsequent refueling outage with any actions to address potential growth.

0.1 gpm, resulting in an allowable number of potentially leaking indications equal to 105. [Refer to Section 6.3 for a description of the calculation of the allowable number of potentially leaking indications.] Also, in this example the analysis assumes that zero leaking throughwall indications are expected during the in situ pressure tests. With these assumptions, the final sample size to be tested is equal to 39. That is, if in situ pressure tests were performed on these 39 indications, with no leaks, the ~~expected~~ number of leaking indications in the total population of indications is ~~less~~ than 105, and the ~~expected~~ leakage from the generator during an MSLB for the ID IGA indications is ~~less~~ than 0.1 gpm with 95% confidence.

maximum
no more
no more
maximum

9.6.4 In situ Leak Testing

As described above, the purpose of the in situ pressure testing is to provide a means of validating the premise that leaving tubes with volumetric ID IGA in service will not cause MSLB primary-to-secondary leakage rates in excess of the plant technical specification allowable. The testing will be conducted to demonstrate that the limiting SG with the greatest number of ID IGA indications will meet the leakage criteria at the end of the next cycle of operation. As discussed in Section 6.3, the most probable cause of leakage is through the development of an axial crack in the volumetric ID IGA during plant operation. Therefore, leak tests will be conducted at the MSLB pressure differential of 2,575 psig (with additional allowance for temperature correction and test instrumentation error) without a specific axial load in order to maximize the hoop stress in the tube.

Upon completion of the leak testing, the hypergeometric distribution assumptions (Section (9.6.3.2) will be verified. If the assumptions have changed such that a 95% confidence level is not achieved, then more samples will be tested in order to reach the 95% confidence. If the assumption about the number of leaking indications found during in situ pressure testing proves to be non-conservative, then the procedure of Section 9.6 must be repeated with the reduced population. The mathematical procedures are repeated using the population of indications that have not yet been tested and more tests are performed as necessary to achieve 95% confidence. In this case, however, previous testing performed in accordance with Section 9.6 will not be credited.

ATTACHMENT 4

ADDITIONAL INFORMATION – LICENSE CHANGE APPLICATION NO. 291

Camera Ready TMI Unit 1 Technical Specification Pages for Issuance of the Amendment

each inservice inspection shall include at least 3% of the total number of tubes in all steam generators; the tubes selected for these inspections shall be selected on a random basis except:

a. The first sample of tubes selected for each inservice inspection (subsequent to the preservice inspection) of each steam generator shall include:

1. All nonplugged tubes that previously had detectable wall penetrations (>20%).

2. At least 50% of the tubes inspected shall be in those areas where experience has indicated potential problems.

3. A tube inspection (pursuant to Specification 4.19.4.a.8) shall be performed on each selected tube. If any selected tube does not permit the passage of the eddy current probe for a tube inspection, this shall be recorded and an adjacent tube shall be selected and subjected to a tube inspection.

4. Tubes in the following groups may be excluded from the first random sample if all tubes in a group in both steam generators are inspected. No credit will be taken for these tubes in meeting minimum sample size requirements.

(1) Group A-1: Tubes in rows 73 through 79 adjacent to the open inspection lane, and tubes between and on lines drawn from tube 66-1 to tube 75-15 and from 86-1 to 77-15.

(2) Group A-2: Tubes having a drilled opening in the 15th support plate.

b. The tubes selected as the second and third samples (if required by Table 4.19.2) during each inservice inspection may be subjected to a partial tube inspection provided:

1. The tubes selected for these second and third samples include the tubes from those areas of the tube sheet array where tubes with imperfections were previously found.

2. The inspection includes those portions of the tubes where imperfections were previously found.

c. Implementation of the repair criteria for Inside Diameter (ID) Inter-Granular Attack (IGA) requires 100% bobbin coil inspection of all non-plugged tubes in accordance with AmerGen Engineering Report, ECR No. TM 01-00328, during all subsequent steam generator inspection intervals pursuant to Section 4.19.3. ID IGA indications detected by the bobbin coil probe shall be characterized using rotating coil probes, as defined in that report.

The results of each sample inspection shall be classified into one of the following three categories:

Category	Inspection Results
C-1	Less than 5% of the total tubes inspected in a steam generator are degraded tubes and none of the inspected tubes are defective.

4.19.3 Inspection Frequency (Continued)

c. Additional, unscheduled inservice inspections shall be performed on each steam generator in accordance with the first sample inspection specified in Table 4.19-2 during the shutdown subsequent to any of the following conditions:

1. A seismic occurrence greater than the Operating Basis Earthquake.

2. A loss of coolant accident requiring actuation of engineering safeguards, or

3. A major main steam line or feedwater line break.

d. After primary-to-secondary tube leakage (not including leaks originating from tube-to-tube sheet welds) in excess of the limits of Specification 3.1.6.3, an inspection of the affected steam generator will be performed in accordance with the following criteria:

1. If the leak is above the 14th tube support plate in a Group as defined in Section 4.19.2.a.4(1) all of the tubes in this Group in the affected steam generator will be inspected above the 14th tube support plate. If the results of this inspection fall into the C-3 category, additional inspections will be performed in the same Group in the other steam generator.

2. If the leaking tube is not as defined in Section 4.19.3.d.1, then an inspection will be performed on the affected steam generator(s) in accordance with Table 4.19-2.

4.19.4 Acceptance Criteria

a. As used in this Specification:

1. Imperfection means an exception to the dimensions, finish, or contour of a tube from that required by fabrication drawing or specifications. Eddy current testing indications less than degraded tube criteria specified in a.3 below may be considered imperfections.

2. Degradation means a service-induced cracking, wastage, wear or general corrosion occurring on either inside or outside of a tube.

3. Degraded Tube means a tube containing:

(a) an inside diameter (I.D.) IGA indication with a bobbin coil indication ≥ 0.2 volt or ≥ 0.13 inches axial extent or ≥ 0.26 inches circumferential extent, or

(b) imperfections $\geq 20\%$ of the nominal wall thickness caused by degradation.

4. % Degradation means the percentage of the tube wall thickness affected or removed by degradation.

4.19.4 Acceptance Criteria (Continued)

5. Defect means an imperfection of such severity that it exceeds the repair limit. A tube containing a defect is defective.

6. Repair Limit means the extent of degradation at or beyond which the tube shall be repaired or removed from service because it may become unserviceable prior to the next inspection.

   This limit is equal to 40% of the nominal tube wall thickness. Inside diameter IGA indications shall be repaired or removed from service if they exceed an axial extent of 0.25 inches, or a circumferential extent of 0.52 inches, or a through wall degradation dimensions of $\geq$ 40% if assigned.

7. Unserviceable describes the condition of a tube if it leaks or contains a defect large enough to affect its structural integrity in the event of an Operating Basis Earthquake, a loss of coolant accident, or a steam line or feedwater line break as specified in 4.19.3.c., above.

8. Tube Inspection means an inspection of the steam generator tube from the bottom of the upper tubesheet completely to the top of the lower tubesheet, except as permitted by 4.19.2.b.2, above.

9. Inside Diameter Inter-Granular Attack (IGA) Indication means an indication initiating on the inside diameter surface and confirmed by diagnostic ECT to have a volumetric morphology characteristic of IGA.

b. The steam generator shall be determined OPERABLE after completing the corresponding actions (removal from service by plugging, or repair by kinetic expansion, sleeving, or other methods, of all tubes exceeding the repair limit and all tubes containing throughwall cracks) required by Table 4.19-2.

4.19.5 Reports

a. DELETED

4.19.5 Reports (Continued)

b. The complete results of the steam generator tube inservice inspection shall be reported to the NRC within 90 days following completion of the inspection and repairs (main generator breaker closure). The report shall include:

1. Number and extent of tubes inspected.

2. Location and percent of wall-thickness penetration for each indication of an imperfection.

3. Location, bobbin coil depth estimate (if determined), bobbin coil amplitude (if determined), and axial and circumferential extent for each inside diameter IGA indication, and

4. Identification of tubes repaired or removed from service.

5. The number of tubes repaired or removed from service in each steam generator,

6. An assessment of growth of inside diameter IGA degradation in accordance with the volumetric ID IGA management program contained in AmerGen Engineering Report, ECR No. TM 01-00328, and

7. Results of in-situ pressure testing, if performed.

c. Results of steam generator tube inspections which fall into Category C-3 require notification in accordance with 10 CFR 50.72 prior to resumption of plant operation. The written follow-up of this report shall provide a description of investigations conducted to determine the cause of the tube degradation and corrective measures taken to prevent recurrence in accordance with 10 CFR 50.73.

Bases

The Surveillance Requirements for inspection of the steam generator tubes ensure that the structural integrity of this portion of the RCS will be maintained.

The program for inservice inspection of steam generator tubes is based on modification of Regulatory Guide 1.83, Revision 1. In-service inspection of steam generator tubing is essential in order to maintain surveillance of the conditions of the tubes in the event that there is evidence of mechanical damage or progressive degradation due to design, manufacturing errors, or inservice conditions. Inservice inspection of steam generator tubing also provides a means of characterizing the nature and cause of any tube degradation so that corrective measures can be taken.

The Unit is expected to be operated in a manner such that the primary and secondary coolant will be maintained within those chemistry limits found to result in negligible corrosion of the steam generator tubes. If the primary or secondary coolant chemistry is not maintained within these chemistry limits, localized corrosion may likely result.

The extent of steam generator tube leakage due to cracking would be limited by the secondary coolant activity, Specification 3.1.6.3.

The extent of cracking during plant operation would be limited by the limitation of total steam generator tube leakage between the primary coolant system and the secondary coolant system (primary-to-secondary leakage = 1 gpm). Leakage in excess of this limit will require plant shutdown and an unscheduled inspection, during which the leaking tubes will be located and repaired or removed from service.

Wastage-type defects are unlikely with proper chemistry treatment of the primary or the secondary coolant. However, even if a defect would develop in service, it will be found during scheduled inservice steam generator tube examinations. For tubes with ID IGA indications, additional conservatism is being applied to evaluate circumferential and axial dimensions for determining final disposition of the tube. For ID IGA indications through wall dimension will continue to be assigned to those indications where amplitude response permits measuring through wall dimension. Steam generator tube inspections of operating plants have demonstrated the capability to reliably detect degradation that has penetrated 20% of the original tube wall thickness.

Removal from service by plugging, or repair by kinetic expansion, sleeving, or other methods, will be required for degradation equal to or in excess of 40% of the tube nominal wall thickness. Tubes with I.D. initiated intergranular degradation may remain in service without % T.W. sizing if the degradation morphology has been characterized as not crack-like by diagnostic eddy current inspection and the degradation is of limited circumferential and axial length to ensure tube structural integrity. Additionally, serviceability for accident leakage under the limiting postulated Main Steam Line Break (MSLB) accident will be evaluated by determining that this I.D. initiated degradation mechanism is inactive (e.g. comparison of the outage examination

Bases (Continued)

results with the results from past outages meets the requirements of AmerGen Engineering Report, ECR No. TM 01-00328) and by successful in-situ pressure testing of a sample of these degraded tubes to evaluate their accident leakage potential when in-situ pressure tests are performed.

Where experience in similar plants with similar water chemistry, as documented by USNRC Bulletins/Notices, indicate critical areas to be inspected, at least 50% of the tubes inspected should be from these critical areas. First sample inspections sample size may be modified subject to NRC review and approval.

Whenever the results of any steam generator tubing inservice inspection fall into Category C-3 on the first sample inspection (See Table 4.19.2), these results will be reported to NRC pursuant to the requirements of Specification 4.19.5.c. Such cases will be considered by the NRC on a case-by-case basis and may result in a requirement for analysis, laboratory examinations, tests, additional eddy current inspection, and revision of the Technical Specifications, if necessary.

NOTE: The eddy current examination voltages referred to in this section (section 4.19) are based on a normalization procedure that sets the bobbin coil prime frequency peak-to-peak response from the four 20% through-wall holes of an ASME calibration standard to 4 volts.

ATTACHMENT 5

SUMMARY OF REGULATORY COMMITMENTS

The following table identifies commitments made in this document by AmerGen. (Any other actions discussed in the submittal represent intended or planned actions by AmerGen. They are described to the NRC for the NRC's information and are not regulatory commitments.)

COMMITMENT	COMMITTED DATE OR "OUTAGE"
1. AmerGen Engineering Report ECR No. TM 01-00328 will be revised prior to the TMI Unit 1 refueling outage 1R14 to incorporate the changes shown on the hand marked pages in Attachment 3.	1R14