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Point Beach Nuclear Plant
Operated by Nuclear Management Company, LLC

January 19, 2007

NRC 2007-0003
10 CFR 50.90

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

Point Beach Nuclear Plant, Unit 1
Docket 50-266
License No. DPR-24

Supplement 1 to License Amendment Request 248;
Technical Specification 5.5.8, Steam Generator Program

References: (1) Letter from NMC to NRC dated July 11, 2006 (NRC 2006-0061)
(2) Letter from NRC to NMC dated December 21, 2006

In Reference 1, Nuclear Management Company, LLC (NMC), submitted a request for an amendment to the Technical Specifications (TS) for Point Beach Nuclear Plant (PBNP), Unit 1. The proposed amendment would revise TS 5.5.8, "Steam Generator (SG) Program". The revision would exclude the portion of the tube below 17 inches from the top of the tubesheet from the SG tube inspection requirements for Unit 1 on a one-time basis for a single operating cycle.

In Reference 2, the NRC staff requested additional information (RAI) to complete its evaluation. The questions in Reference 2 were further clarified during a discussion with Mr. Fred Lyon of the NRC staff on January 5, 2007. Enclosure 1 provides the NMC response to the staff's questions. Based on the staff's questions, this supplement revises the proposed TS 5.5.8 as submitted in Reference 1. To facilitate NRC staff review of the proposed amendment, the marked up and clean TS pages are resubmitted in their entirety, incorporating the proposed revision.

Enclosure 2 provides a description and analysis of the revised TS. Enclosure 3 provides the TS pages marked up to show the proposed change. Enclosure 4 provides revised (clean) TS pages.

NMC has determined that this supplement to the proposed amendment remains bounded by the No Significant Hazards Consideration Determination submitted July 11, 2006 (Reference 1).

To support the Unit 1 spring 2007 refueling outage, NMC requests approval of the proposed license amendment by March 2007, with the amendment being implemented within 45 days.

Summary of Commitments

NMC will provide, in the 180-day Steam Generator Tube Inspection Report for PBNP Unit 1 Refueling Outage 30, a listing of indications detected in the upper 17 inches of the hot-leg tubesheet thickness with respect to their location, orientation, and size. NMC will also provide in this report the operational primary to secondary leakage rate observed in each steam generator during the cycle preceding the inspection, and the calculated accident induced leakage (AIL) rate for each steam generator from the lowermost 4 inches of tubing for the most limiting accident. If the calculated AIL rate for any steam generator is less than two times the total observed operational primary-to-secondary leakage rate, a description of how the AIL rate was determined will be included. This information will be provided if the alternate repair criteria for the hot leg tubesheet region are implemented.

In accordance with 10 CFR 50.91, a copy of this application, with attachments, is being provided to the designated Wisconsin Official.

I declare under penalty of perjury that the foregoing is true and correct.
Executed on January 19, 2007.

Dennis L Koehl

Dennis L. Koehl
Site Vice-President, Point Beach Nuclear Plant
Nuclear Management Company, LLC

Enclosures

cc: Regional Administrator, Region III, USNRC
Project Manager, Point Beach Nuclear Plant, USNRC
Resident Inspector, Point Beach Nuclear Plant, USNRC
PSCW

ENCLOSURE 1

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION
LICENSE AMENDMENT REQUEST 248
TECHNICAL SPECIFICATION 5.5.8
STEAM GENERATOR PROGRAM

POINT BEACH NUCLEAR PLANT, UNIT 1

The following information is provided in response to the Nuclear Regulatory Commission (NRC) staff's request for additional information (RAI) regarding Nuclear Management Company (NMC) letter dated July 11, 2006, which proposed an amendment to the license for Point Beach Nuclear Plant (PBNP) Units 1 and 2, to revise the Point Beach Nuclear Plant (PBNP), Unit 1 Technical Specifications (TS) related to steam generator tube repair. The changes would revise the repair criteria for the portion of the tubes within the hot-leg region of the tubesheet for a single operating cycle following Refueling Outage 30. The amendment defines a distance downward into the hot-leg tubesheet, below which flaws may remain in service regardless of size. As a result, tube inspection within the hot-leg region would be required only within 17 inches of the top of the tubesheet (TTS).

The NRC staff's request is restated below with the NMC response following.

<u>NRC Request 1</u>:

The proposed amendment is intended to allow tubes with flaws to remain in service if the flaws are located below a certain depth in the hot-leg region of the tubesheet. This will require proposing an alternative to the 40 percent through-wall depth criteria for plugging in your TS. Please discuss your plans to revise TS 5.5.8.c ("Provisions for SG tube repair criteria") to define the proposed alternatives to the 40 percent plugging criteria. It is NRC staff's understanding that two modifications to the repair criteria are needed: (1) tubes with flaws located within 17 inches of the TTS will be plugged on detection, and (2) all flaws located below this depth may remain in service, regardless of size. The following example shows a form accepted by the staff for a similar amendment from another plant with the new technical specifications for SG tube integrity (TSTF-449):

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

   The following alternate tube repair criteria may be applied as an alternative to the 40% depth-based criteria:

   1. For Refueling Outage XX and the subsequent operating cycle, flaws found in the portion of the tube below YY inches from the top of the hot leg tubesheet do not

require plugging. All tubes with flaws identified in the portion of tube within the region from the top of the hot leg tubesheet to YY inches below the top of the tubesheet shall be removed from service.

<u>NMC Response</u>:

NMC proposes to revise TS 5.5.8.c as stated below (additions are double-underlined). Tubes with flaws located within 17 inches of the TTS will be plugged on detection. Flaws located below this depth may remain in service, regardless of size.

5.5.8.c Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

<u>The following alternate tube repair criteria may be applied as an alternative to the 40% depth-based criteria:</u>

<u>1. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging. All tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged. This alternate tube repair criteria is not applicable to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.</u>

<u>NRC Request 2</u>:

According to your proposal, the 17-inch inspection criteria would not apply to the tube located at row 38, column 69 in the A steam generator because it is not expanded over the full length of the tubesheet. Please discuss your plans to exclude this tube from the proposed alternate repair criteria discussed above (TS 5.5.8.c).

<u>NMC Response</u>:

The proposed revision to TS 5.5.8.c, as discussed in the response to Question 1 above, excludes this tube from the proposed alternate repair criteria. Since the tube located at row 38, column 69 in the A steam generator hot leg is not expanded over the full length of the tubesheet, it will be inspected the full length of the hot leg tubesheet using a qualified eddy current test (ECT) method. If an axial or circumferential crack or a flaw depth equal to or exceeding 40% of the nominal tube wall thickness is found in this tube, the tube shall be plugged.

<u>NRC Request 3</u>:

A new paragraph proposed for your “Provisions for SG tube inspections” (TS 5.5.8.d) would define a minimum level of sampling with a rotating probe in the hot-leg tubesheet region. This level of detail is unnecessary since TS 5.5.8.d requires that “the number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type… that may be present along the length of the tube… and that may satisfy the applicable tube repair criteria,” and requires that the inspection scope and inspection methods, “be such as to ensure that SG tube integrity is maintained until the next SG Inspection.”

Please discuss your plans to modify your proposal to address this concern. The following example shows technical specification wording accepted by the staff for a similar amendment from another plant. The staff notes that consistent with your original proposal you should indicate that the tube without full expansion (row 38, column 69) will need to be inspected through the full length of the tubesheet (i.e., not subject to the proposed exclusion).

d. Provisions for SG tube inspections. Periodic SG inspections shall be performed. The number and portions… and that may satisfy the applicable tube repair criteria. For Refueling Outage XX and the subsequent operating cycle, the portion of the tube below YY inches from the top of the hot leg tubesheet is excluded. The tube-to-tubesheet weld… .

<u>NMC Response</u>:

NMC proposes to revise TS 5.5.8.d as stated below (additions are double-underlined). Based on the proposed revision, the tube without full expansion (row 38, column 69) is not subject to the proposed exclusion.

5.5.8.d Provisions for SG tube inspections. Periodic SG inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. <u>For Unit 1 Refueling Outage 30 and the subsequent operating cycle, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded when the alternate repair criteria in TS 5.5.8.c are implemented. This exclusion does not apply to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.</u> The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

NRC Request 4:

Please discuss your plans to provide, in your 180-day Steam Generator Tube Inspection Report (i.e., TS 5.6.8), the following information applicable to implementation of the tubesheet inspection and alternate repair criteria. The following is an example of reporting requirements for other plants requesting similar amendments:

- A listing of indications detected in the upper 17 inches of the hot-leg tubesheet thickness with respect to their location, orientation, and size. (This differs from the existing TS reporting requirements in that indications within the tubesheet region would be reported separately from those in other locations.)

- The operational primary to secondary leakage rate observed in each steam generator during the cycle preceding the inspection, and the calculated accident induced leakage (AIL) rate for each steam generator from the lowermost 4 inches of tubing for the most limiting accident. If the calculated AIL rate for any steam generator is less than two times the total observed operational primary-to-secondary leakage rate, a description of how the AIL rate was determined.

NMC Response:

NMC hereby commits to provide, in the 180-day Steam Generator Tube Inspection Report for PBNP Unit 1 Refueling Outage 30, a listing of indications detected in the upper 17 inches of the hot-leg tubesheet thickness with respect to their location, orientation, and size. NMC will also provide in this report the operational primary to secondary leakage rate observed in each steam generator during the cycle preceding the inspection, and the calculated accident induced leakage (AIL) rate for each steam generator from the lowermost 4 inches of tubing for the most limiting accident. If the calculated AIL rate for any steam generator is less than two times the total observed operational primary-to-secondary leakage rate, a description of how the AIL rate was determined will be included. This information will be provided if the alternate repair criteria for the hot leg tubesheet region are implemented.

Please note that any primary-to-secondary leakage for the Unit 1 steam generators will conservatively be assumed to be from the lowermost 4 inches of tubing unless proven otherwise. Leakage from the lowermost 4 inches will be doubled to account for the AIL rate for each steam generator. The current Unit 1 primary-to-secondary leak rate is approximately 0.3 gallons per day. Such low leakage rates preclude accurately differentiating leakage between individual steam generators. Therefore, if the primary-to-secondary leak rate remains too low to individually characterize, total leakage will be conservatively reported as being from only a single steam generator and values will not be separately assigned to each steam generator.

ENCLOSURE 2

DESCRIPTION AND ANALYSIS OF CHANGE

SUPPLEMENT 1 TO LICENSE AMENDMENT REQUEST 248
TECHNICAL SPECIFICATION 5.5.8
STEAM GENERATOR PROGRAM

POINT BEACH NUCLEAR PLANT, UNIT 1

The proposed amendment would revise Technical Specification (TS) 5.5.8, "Steam Generator (SG) Program", to exclude the portion of the tube below 17 inches from the top of the tubesheet from the SG tube inspection requirements for Unit 1 on a one-time basis for Unit 1 Refueling Outage 30 and the subsequent operating cycle. The revision would exclude the portion of the tube below 17 inches from the top of the tubesheet from the SG tube inspection requirements on a one-time basis for Unit 1 Refueling Outage 30 and the subsequent operating cycle.

TS 5.5.8 is proposed for modification as follows (additions are double-underlined).

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

<u>The following alternate tube repair criteria may be applied as an alternative to the 40% depth-based criteria:</u>

<u>1. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging. All tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged. This alternate tube repair criteria is not applicable to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.</u>

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. <u>For Unit 1 Refueling Outage 30 and the subsequent operating cycle, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded when the alternate repair criteria in TS 5.5.8.c are implemented. This exclusion does not apply to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.</u> The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

Additionally, administrative editorial changes are made to correct a page number in the TS table of contents and delete two blank pages in TS Section 5.

The technical justification to limit the examination of Point Beach Unit 1 SG tubes to a depth of only 17 inches below the top of the tubesheet on a one time basis for Unit 1 Refueling Outage 30 and the subsequent operating cycle is provided in the Westinghouse technical evaluation submitted with the original proposed amendment. This justification is based on the use of a bounding leak rate evaluation and the application of a structural analysis of the tube-to-tubesheet joint for the Point Beach Unit 1 Model 44F steam generators. The justification includes a redefinition of the steam generator tube primary-to-secondary pressure boundary.

During Unit 1 Refueling Outage 30, a 20% minimum sample of the total population of bulges and overexpansions within the steam generators from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet will be inspected with a rotating pancake probe.

Where:

Bulge refers to a tube diameter deviation within the tubesheet of 18 volts or greater as measured by bobbin probe; and,

Overexpansion refers to a tube diameter deviation within the tubesheet of 1.5 mils or greater as measured by bobbin probe.

Overexpansions and bulges within the tubesheet are not considered flaws for purposes of applying the proposed TS 5.5.8.c alternate tube repair criteria.

The conclusion of the technical justification is that the structural and leak rate integrity of the steam generator tube primary-to-secondary pressure boundary is unaffected by degradation at any level below a depth of 17 inches from the top of the tubesheet or the tube end welds. The tube-to-tubesheet hydraulically expanded joints make it extremely unlikely that any operating or faulted condition loads are applied to the tube tack expanded region or the tube welds.

The steam generator tube rupture (SGTR) accident is the limiting design basis event for SG tubes and avoiding a SGTR is the basis for the SG tube integrity Specification. The analysis of a SGTR event assumes a bounding primary to secondary LEAKAGE rate equal to or greater than the operational LEAKAGE rate limits in LCO 3.4.13, “RCS

Operational LEAKAGE," plus the leakage rate associated with a double-ended rupture of a single tube. The accident analysis for a SGTR assumes the contaminated secondary fluid is released to the atmosphere via safety valves.

The analysis for design basis accidents and transients other than a SGTR assume the SG tubes retain their structural integrity (i.e., they are assumed not to rupture.) In these analyses, the steam discharge to the atmosphere is based on primary to secondary LEAKAGE from each SG of 500 gallons per day or is assumed to increase to 500 gallons per day as a result of accident induced conditions. For accidents that do not involve fuel damage, the primary coolant activity level of DOSE EQUIVALENT I-131 is assumed to be equal to the LCO 3.4.16, "RCS Specific Activity," limits. For accidents that assume fuel damage, the primary coolant activity is a function of the amount of activity released from the damaged fuel. The dose consequences of these events are within the limits of GDC 19, 10 CFR 100 or the NRC approved licensing basis (e.g., a small fraction of these limits).

Results and Conclusion

Based on the above justification, implementation of the proposed TS change is consistent with the analysis and demonstrates that the operational readiness of the steam generators, the ability to detect component degradation that might affect component OPERABILITY, and safety margins, will be maintained.

The NRC has previously granted similar amendments, on a one-time basis, for Wolf Creek Generating Station in a letter dated October 10, 2006, as well as for Braidwood Station, Unit 2, and Byron Station, Unit 2, in letters dated April 25, 2005, and September 19, 2005, respectively.

ENCLOSURE 3

PROPOSED (MARKED-UP) TECHNICAL SPECIFICATION CHANGES

SUPPLEMENT 1 TO LICENSE AMENDMENT REQUEST 248
TECHNICAL SPECIFICATION 5.5.8
STEAM GENERATOR PROGRAM

POINT BEACH NUCLEAR PLANT, UNIT 1

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for all SGs and leakage rate for an individual SG. Leakage is not to exceed 500 gallons per day per SG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

The following alternate tube repair criteria may be applied as an alternative to the 40% depth-based criteria:

1. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging. All tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged. This alternate tube repair criteria is not applicable to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded when the alternate repair criteria in TS 5.5.8.c are implemented. This exclusion does not apply to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) Program (continued)

2. i. Unit 1 (alloy 600 Thermally Treated tubes): Inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

   ii. Unit 2 (alloy 690 Thermally Treated tubes): Inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

5.5 Programs and Manuals

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ENCLOSURE 4

REVISED (CLEAN) TECHNICAL SPECIFICATION PAGES

SUPPLEMENT 1 TO LICENSE AMENDMENT REQUEST 248
TECHNICAL SPECIFICATION 5.5.8
STEAM GENERATOR PROGRAM

POINT BEACH NUCLEAR PLANT, UNIT 1

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5.5.8 Steam Generator (SG) Program (continued)

for all SGs and leakage rate for an individual SG. Leakage is not to exceed 500 gallons per day per SG.

3. The operational LEAKAGE performance criterion is specified in LCO 3.4.13, "RCS Operational LEAKAGE."

c. Provisions for SG tube repair criteria. Tubes found by inservice inspection to contain flaws with a depth equal to or exceeding 40% of the nominal tube wall thickness shall be plugged.

The following alternate tube repair criteria may be applied as an alternative to the 40% depth-based criteria:

1. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, flaws found in the portion of the tube below 17 inches from the top of the hot leg tubesheet do not require plugging. All tubes with flaws identified in the portion of the tube within the region from the top of the hot leg tubesheet to 17 inches below the top of the tubesheet shall be plugged. This alternate tube repair criteria is not applicable to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet.

d. Provisions for SG tube inspections. Periodic SG tube inspections shall be performed. The number and portions of the tubes inspected and methods of inspection shall be performed with the objective of detecting flaws of any type (e.g., volumetric flaws, axial and circumferential cracks) that may be present along the length of the tube, from the tube-to-tubesheet weld at the tube inlet to the tube-to-tubesheet weld at the tube outlet, and that may satisfy the applicable tube repair criteria. For Unit 1 Refueling Outage 30 and the subsequent operating cycle, the portion of the tube below 17 inches from the top of the hot leg tubesheet is excluded when the alternate repair criteria in TS 5.5.8.c are implemented. This exclusion does not apply to the tube at row 38 column 69 in the A steam generator, which is not expanded the full length of the tubesheet. The tube-to-tubesheet weld is not part of the tube. In addition to meeting the requirements of d.1, d.2, and d.3 below, the inspection scope, inspection methods, and inspection intervals shall be such as to ensure that SG tube integrity is maintained until the next SG inspection. An assessment of degradation shall be performed to determine the type and location of flaws to which the tubes may be susceptible and, based on this assessment, to determine which inspection methods need to be employed and at what locations.

1. Inspect 100% of the tubes in each SG during the first refueling outage following SG replacement.

5.5 Programs and Manuals

5.5.8 Steam Generator (SG) Program (continued)

2. i. Unit 1 (alloy 600 Thermally Treated tubes): Inspect 100% of the tubes at sequential periods of 120, 90, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 48 effective full power months or two refueling outages (whichever is less) without being inspected.

   ii. Unit 2 (alloy 690 Thermally Treated tubes): Inspect 100% of the tubes at sequential periods of 144, 108, 72, and, thereafter, 60 effective full power months. The first sequential period shall be considered to begin after the first inservice inspection of the SGs. In addition, inspect 50% of the tubes by the refueling outage nearest the midpoint of the period and the remaining 50% by the refueling outage nearest the end of the period. No SG shall operate for more than 72 effective full power months or three refueling outages (whichever is less) without being inspected.

3. If crack indications are found in any SG tube, then the next inspection for each SG for the degradation mechanism that caused the crack indication shall not exceed 24 effective full power months or one refueling outage (whichever is less). If definitive information, such as from examination of a pulled tube, diagnostic non-destructive testing, or engineering evaluation indicates that a crack-like indication is not associated with a crack(s), then the indication need not be treated as a crack.

e. Provisions for monitoring operational primary to secondary LEAKAGE.

5.5 Programs and Manuals

5.5.9 Secondary Water Chemistry Program

This program provides controls for monitoring secondary water chemistry to inhibit SG tube degradation. The program shall include:

a. Identification of a sampling schedule for the critical variables and control points for these variables;

b. Identification of the procedures used to measure the values of the critical variables;

c. Identification of process sampling points, which shall include monitoring the discharge of the condensate pumps for evidence of condenser in leakage;

d. Procedures for the recording and management of data;

e. Procedures defining corrective actions for all off control point chemistry conditions; and

f. A procedure identifying the authority responsible for the interpretation of the data and the sequence and timing of administrative events, which is required to initiate corrective action.

5.5.10 Ventilation Filter Testing Program (VFTP)

A program shall be established to implement the following required testing of the Control Room Emergency Filtration System (F-16) at the frequencies specified in Regulatory Guide 1.52, Revision 2, and in accordance with ASTM D3803-1989 and the methodology of ANSI N510-1980, as prescribed below.

a. Demonstrate for the Control Room Emergency Filtration System (F-16) that an inplace test of the high efficiency particulate air (HEPA) filters shows a penetration and system bypass ≤ 1.0% when tested in accordance with the methodology of ANSI N510-1980, Section 10, excluding subsection 10.3, at a system flowrate of 4950 cfm ± 10%.

b. Demonstrate for the Control Room Emergency Filtration System (F-16) that an inplace test of the charcoal adsorber shows a penetration and system bypass ≤ 1.0% when tested in accordance with the methodology of ANSI N510-1980, Section 12, excluding subsection 12.3, at a system flowrate of 4950 cfm ± 10%.

5.5 Programs and Manuals

5.5.10 Ventilation Filter Testing Program (VFTP) (continued)

c. Demonstrate for the Control Room Emergency Filtration System (F-16) that a laboratory test of a sample of the charcoal adsorber, when obtained in accordance with the methodology of ANSI N510-1980, Section 13, excluding subsection 12.3, shows the methyl iodide penetration $\leq$ 1.0%, when tested in accordance with ASTM D3803-1989 at a temperature of 30°C and a relative humidity of 95%, applying the tolerances of ASTM D3803-1989.

d. Demonstrate for the Control Room Emergency Filtration System (F-16) that the pressure drop across the combined HEPA filters and the charcoal adsorbers is less than 6 inches of water when tested in accordance with the methodology of ANSI N510-1980, Sections 10 and 12, excluding subsections 10.3 and 12.3, at a system flowrate of 4950 cfm ± 10%.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the VFTP test frequencies.

5.5.11 Explosive Gas Monitoring Program

This program provides controls for potentially explosive gas mixtures contained in the on-service Gas Decay Tank.

The program shall include a limit for oxygen concentration in the on-service Gas Decay Tank and a surveillance program to ensure the limit is maintained. This limit shall be appropriate to the system's design criteria (i.e., whether or not the system is designed to withstand a hydrogen explosion).

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Explosive Gas Monitoring Program surveillance frequencies.

5.5 Programs and Manuals

5.5.12 Diesel Fuel Oil Testing Program

A diesel fuel oil testing program to implement required testing of both new fuel oil and stored fuel oil shall be established. The program shall include sampling and testing requirements, and acceptance criteria, all in accordance with applicable ASTM Standards. The purpose of the program is to establish the following:

a. Acceptability of new fuel oil for use prior to addition to storage tanks by determining that the fuel oil has:

   1. an API gravity or an absolute specific gravity within limits,

   2. a flash point and kinematic viscosity within limits for ASTM 2D fuel oil, and

   3. a clear and bright appearance with proper color;

b. Within 31 days of addition of the new fuel oil to storage tanks verify that the properties of the new fuel oil, other than those addressed in a. above, are within limits for ASTM 2D fuel oil; and

c. Total particulate concentration of the fuel oil is ≤ 10 mg/l when tested every 92 days in accordance with the applicable ASTM standard.

d. The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Diesel Fuel Oil Testing Program test frequencies.

5.5.13 Technical Specifications (TS) Bases Control Program

This program provides a means for processing changes to the Bases of these Technical Specifications.

a. Changes to the Bases of the TS shall be made under appropriate administrative controls and reviews.

b. Licensees may make changes to Bases without prior NRC approval provided the changes do not involve either of the following:

   1. a change in the TS incorporated in the license; or

   2. a change to the updated FSAR or Bases that requires NRC approval pursuant to 10 CFR 50.59.

5.5 Programs and Manuals

5.5.13 Technical Specifications (TS) Bases Control Program (continued)

c. The Bases Control Program shall contain provisions to ensure that the Bases are maintained consistent with the FSAR.

d. Proposed changes that meet the criteria of Specification 5.5.13b above shall be reviewed and approved by the NRC prior to implementation. Changes to the Bases implemented without prior NRC approval shall be provided to the NRC on a frequency consistent with 10 CFR 50.71(e).

5.5.14 Safety Function Determination Program (SFDP)

This program ensures loss of safety function is detected and appropriate actions taken. Upon entry into LCO 3.0.6, an evaluation shall be made to determine if loss of safety function exists. Additionally, other appropriate actions may be taken as a result of the support system inoperability and corresponding exception to entering supported system Condition and Required Actions. This program implements the requirements of LCO 3.0.6. The SFDP shall contain the following:

a. Provisions for cross train checks to ensure a loss of the capability to perform the safety function assumed in the accident analysis does not go undetected;

b. Provisions for ensuring the plant is maintained in a safe condition if a loss of function condition exists;

c. Provisions to ensure that an inoperable supported system's Completion Time is not inappropriately extended as a result of multiple support system inoperabilities; and

d. Other appropriate limitations and remedial or compensatory actions.

5.5 Programs and Manuals

5.5.14 Safety Function Determination Program (SFDP) (continued)

A loss of safety function exists when, assuming no concurrent single failure, and assuming no concurrent loss of offsite power or loss of onsite diesel generator(s), a safety function assumed in the accident analysis cannot be performed. For the purpose of this program, a loss of safety function may exist when a support system is inoperable, and:

a. A required system redundant to the system(s) supported by the inoperable support system is also inoperable; or

b. A required system redundant to the system(s) in turn supported by the inoperable supported system is also inoperable; or

c. A required system redundant to the support system(s) for the supported systems (a) and (b) above is also inoperable.

The SFDP identifies where a loss of safety function exists. If a loss of safety function is determined to exist by this program, the appropriate Conditions and Required Actions of the LCO in which the loss of safety function exists are required to be entered.

When a loss of safety function is caused by the inoperability of a single Technical Specification support system, the appropriate Conditions and Required Actions to enter are those of the support system.

5.5.15 Containment Leakage Rate Testing Program

a. A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, “Performance-Based Containment Leak-Test Program,” dated September, 1995.

b. The peak design containment internal accident pressure, P_a, is 60 psig.

c. The maximum allowable containment leakage rate, L_a at P_a, shall be 0.4% of containment air weight per day.

5.5.15 Containment Leakage Rate Testing Program (continued)

d. Leakage rate acceptance criteria are:

1. Containment leakage rate acceptance criterion is $\leq 1.0\ L_a$.

2. During the first unit startup following testing in accordance with this program, the leakage rate acceptance are $\leq 0.6\ L_a$ for the combined Type B and Type C tests and $\leq 0.75\ L_a$ for the Type A tests.

3. Air lock testing acceptance criteria are:

i. Overall air lock leakage rate is $\leq 0.05\ L_a$ when tested at $\geq P_a$.

ii. For each door seal, leakage rate is equivalent to $\leq 0.02\ L_a$ at $\geq P_a$ when tested at a differential pressure of $\geq$ to 10 inches of Hg.

e. The provisions of SR 3.0.2 do not apply to the test frequencies in the Containment Leakage Rate Testing Program.

f. The provisions of SR 3.0.3 are applicable to the Containment Leakage Rate Testing Program.

5.5.16 Reactor Coolant System (RCS) Pressure Isolation Valve (PIV) Leakage Program

A program shall be established to verify the leakage from each RCS PIV is within the limits specified below, in accordance with the Event V Order, issued April 20, 1981.

a. Minimum differential test pressure shall not be less than 150 psid.

b. Leakage rate acceptance criteria are:

1. Leakage rates less than or equal to 1.0 gpm are considered acceptable.

2. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered acceptable if the latest measured rate has not exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

3. Leakage rates greater than 1.0 gpm but less than or equal to 5.0 gpm are considered unacceptable if the latest measured rate exceeded the rate determined by the previous test by an amount that reduces the margin between measured leakage rate and the maximum permissible rate of 5.0 gpm by 50% or greater.

4. Leakage rates greater than 5.0 gpm are considered unacceptable.

5.5.17 Pre-Stressed Concrete Containment Tendon Surveillance Program

This program provides controls for monitoring any tendon degradation in pre-stressed concrete containments, including effectiveness of its corrosion protection medium, to ensure containment structural integrity. The program shall include baseline measurements prior to initial operations. The Tendon Surveillance Program, inspection frequencies, and acceptance criteria shall be in accordance with Regulatory Guide 1.35, Revision 3, 1990.

The provisions of SR 3.0.2 and SR 3.0.3 are applicable to the Tendon Surveillance Program inspection frequencies.