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2CAN030902

March 10, 2009

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

SUBJECT: License Amendment Request
Technical Specification Change To Delete COLR References
Arkansas Nuclear One, Unit 2
Docket No. 50-368
License No. NPF-6

Dear Sir or Madam:

Pursuant to 10 CFR 50.90, Entergy Operations, Inc. (Entergy) hereby requests the following amendment for Arkansas Nuclear One, Unit 2 (ANO-2). The proposed change will modify Technical Specification (TS) 6.6.5, Core Operating Limits Report (COLR) to delete the specific references listed in TS 6.6.5.b. The COLR is maintained by the licensee in accordance with 10 CFR 50.59 and already contains a listing of these TS references, in many cases, with additional detail.

On February 7, 2008, the NRC communicated a concern during review of TS changes related to the Cycle 20 core reload that the current list of references was confusing and that it was not evident which references were currently being used to determine limits contained within the COLR. Entergy committed to review the references and submit a TS change, if appropriate, to address these concerns. The review indicated most references remain valid. In addition, Entergy determined it to be inappropriate to attempt to explain, in the TSs, how each of the methodologies are used in supporting COLR limit development. In fact, Entergy could not determine a regulatory basis for listing these references in the TSs. Therefore, Entergy proposes to delete the TS 6.6.5.b references and maintain the list of references in the COLR. In so doing, the next COLR update (Fall 2009) will contain a revised reference list, deleting any references that are no longer used as part of the evaluation of the core reload process.

In accordance with TS 6.6.5.d, the COLR must be submitted to the NRC each operating cycle. This provides the NRC an opportunity to view any changes, including those made to the list of references on a refueling outage frequency. As discussed in detail in Attachment 1 of this submittal, new calculational or evaluation methods used to develop the COLR each fuel cycle must be pre-approved by the NRC. Once approved, the new method may be added to the list of references contained in the COLR in accordance with 10 CFR 50.59. Maintaining the list of references only in the COLR will permit Entergy to maintain the list up-to-date without the burden associated with requesting changes to the TSs.

A markup of the affected TS pages is contained in Attachment 2 of this submittal. In addition, the title of TS 6.6.5 is currently presented in all CAPS and is changed to be consistent with the remainder of TS Section 6.6. The deletion of references also resulted in information on subsequent TS pages being moved forward. Because no technical information was changed while moving this information, revision bars will not be shown on the final version. These changes are administrative/editorial in nature.

The proposed change has been evaluated in accordance with 10 CFR 50.91(a)(1) using criteria in 10 CFR 50.92(c) and it has been determined that the changes involve no significant hazards consideration. The bases for these determinations are included in the attached submittal.

The proposed change does not include any new commitments.

Entergy requests approval of the proposed amendment by April 1, 2010. However, if approved prior to October 1, 2009, Entergy will not suffer the unnecessary burden of submitting a change to TS 6.6.5 in support of the next operating cycle. Once approved, the amendment shall be implemented within 90 days.

If you have any questions or require additional information, please contact David Bice at 479-858-5338.

I declare under penalty of perjury that the foregoing is true and correct. Executed on March 10, 2009.

Sincerely,

A handwritten signature in black ink, appearing to read 'TGM/dbb', is written over a faint dotted line.

TGM/dbb

Attachments:

1. Analysis of Proposed Technical Specification Change
2. Proposed Technical Specification Changes (mark-up)

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Attachment 1

2CAN030902

Analysis of Proposed Technical Specification Change

1.0 DESCRIPTION

This letter is a request to amend Operating License NPF-6 for Arkansas Nuclear One, Unit 2 (ANO-2).

The proposed change will modify Technical Specification (TS) 6.6.5, Core Operating Limits Report (COLR) to delete the specific references listed in TS 6.6.5.b. The COLR is maintained by the licensee in accordance with 10 CFR 50.59 and already contains a listing of these TS references, in many cases, with additional detail.

In addition, the title of TS 6.6.5 is currently presented in all CAPS and is changed to be consistent with the remainder of TS Section 6.6. The deletion of references also resulted in information on subsequent TS pages being moved forward. Because no technical information was changed while moving this information, revision bars will not be shown on the final version. These changes are administrative/editorial in nature and need not be evaluated further in this attachment.

2.0 PROPOSED CHANGE

TS 6.6.5.b is modified to reference the COLR as the location of the analytical methods used in development of cycle limits and delete the current list of references.

3.0 BACKGROUND

Since development of the COLR program, the associated list of references were contained in the TSs proper. The original purpose for the location of these reference was to ensure NRC review of new analytical methods adopted for use in COLR development. Listing the references in the TSs has resulted in significant burden on the utility to keep the list updated with no added benefit to the NRC or the utility. An explanation of benefits, or lack thereof, is included in Section 4.0 below.

During various correspondence and communication with the NRC during development of the ANO-2 Cycle 20 core reload report, the NRC raised a concern that the list of references contained in TS 6.6.5.b was confusing and that it was not clear if all the references listed were still being used in support of each cycle's COLR. On February 7, 2008, the NRC communicated the following to Entergy:

Under TAC MD6620, the proposed TS 6.6.5 COLR, addition of new methods to COLR, in the July 31, 2007 submittal, there are five new methodologies to be added to the TS COLR to support the coming cycle-specific operating parameters. However, many methods are proposed to support the same parameter. We would like the licensee to clarify that: (1) the proposed changes are applicable to the coming cycle; (2) how to apply the methods proposed to support same parameter such as 3 methods for MTC, 3 methods for Azimuthal Power Tilt, 4 methods for ASI, 3 methods for Linear Heat Rate, and 3 methods for DNBR.

Entergy committed to review the COLR and its associated TS. Specifically, the commitment states:

Entergy commits to evaluate other similar plant's Technical Specification (TS) methodology references that reflect NRC approved methods used in establishing the COLR parameter limits. Based on that evaluation, Entergy will propose a change to TS 6.6.5, to minimize the number of references consistent with the guidance provided in Generic Letter 88-16, "Removal of Cycle-Specific Parameter Limits from Technical Specifications".

During Entergy's review of the listing, it became clear that the list of references was largely redundant to that contained within the COLR and that the list did not meet the criteria of 10 CFR 50.36 for inclusion in the TSs. This conclusion was based, in part, on other regulation which assures NRC review and approval of new analytical methods proposed for use in COLR development.

Based on the above, Entergy proposes to delete the list of references currently contained within TS 6.6.5.b and maintain this list within the COLR.

4.0 TECHNICAL ANALYSIS

The list of analytical methods currently contained in TS 6.6.5.b is also contained within the COLR. In order to support deletion of the TS listing and, therefore, relieve the utility of unnecessary burden associated with updating the TS list nearly each operating cycle, it is important to ensure that NRC review and approval of new analytical methods will be maintained. This assurance is provided by 10 CFR 50.59, Changes, Tests, and Experiments. 10 CFR 50.59 establishes the conditions under which licensees may make changes to the facility or procedures and conduct tests or experiments without prior NRC approval. It is important to note that 10 CFR 50.59 provides a threshold for regulatory review, not the final determination of safety, for proposed activities.

The NRC has endorsed use of industry guidance relating to 10 CFR 50.59 provided by the Nuclear Energy Institute (NEI) in NEI 96-07, Rev. 1, Guidelines for 10 CFR 50.59 Implementation (November 2000). This guidance is generically applied throughout the commercial nuclear industry in order to ensure the intent of the NRC regulation is being met. As discussed above, the concern with deleting the TS references is that the NRC may not be afforded an opportunity to review new analytical methods not currently contained in the COLR prior to their use by the utility. This concern is alleviated by correctly answering Question 8 of the NEI 10 CFR 50.59 guidance (discussed in detail below).

Changes initiated to any document controlled in accordance with 10 CFR 50.59 (Safety Analysis Report or SAR, TS Bases, Technical Requirements Manual or TRM, COLR, etc.) are first "screened" to determine if a "50.59 evaluation" is required before the change can be implemented. The screening process basically compares the change against the plant design basis and determines if the change has a "potential" adverse effect on 1) a design function of an Structure, System, or Component (SSC), 2) a method of performing or controlling the design function, or 3) an evaluation for demonstrating that intended design functions will be accomplished. Because a change to any COLR value or analytical method (other than editorial changes) will always have a *potential* adverse effect on the plant design basis, a 50.59 evaluation is always required for such changes. For purposes of this letter, adoption of a new analytical method falls under Item 3 above.

Once the 50.59 evaluation process is entered, specific criteria must be evaluated to determine if a change warrants review and approval by the NRC prior to implementation. As indicated above, most guidance references the SAR as the controlling document for design basis information. However, there are several other documents that compliment the SAR or are incorporated in the SAR by reference, such as the COLR. Therefore, the specific criteria are always evaluated with respect to any design basis document controlled in accordance with 10 CFR 50.59. In addition, Question 8 must always be answered and is generically stated as:

Result in a departure from a method of evaluation described in the SAR (as updated) used in establishing the design bases or in the safety analyses?

10 CFR 50.59(a)(2)(ii) defines a *departure from a method of evaluation*, in part, as:

Changing from a method described in the SAR to another method unless that method has been approved by NRC for the intended application.

Based on the above, adoption of any new method not previously listed in the SAR, or in this case, the COLR, would require pre-approval by the NRC unless the NRC had previously approved the method in question. NEI 96-07 goes on to state, in part:

“...the following changes are not considered departures from a method of evaluation described in the UFSAR:

- *Use of a new NRC-approved methodology (e.g., new or upgraded computer code) to reduce uncertainty, provide more precise results or other reason, provided such use is (a) based on sound engineering practice, (b) appropriate for the intended application and (c) within the limitations of the applicable SER. The basis for this determination should be documented in the licensee evaluation.”*

Typically, the NRC includes “conditions” in its Safety Evaluation Report (SER) approving a new methodology (generally in the form of a topical report) that must be met by any licensee wishing to apply the new methodology. If the current COLR references were located outside the TS in a document controlled in accordance with 10 CFR 50.59, revising this document to include use of a new or revised methodology would require a review under the requirements of 10 CFR 50.59. This includes a review of the “conditions” established by the NRC for adoption of a previously approved topical report. If the licensee finds these conditions to be met, the new or revised methodology can be applied (added to the COLR list of references) without the need to submit a TS change request, provided the remaining NRC approval exclusion requirements under 10 CFR 50.59 are met. If these conditions are not met, either the methodology cannot be applied or the licensee may choose to submit a request to the NRC in support of applying the methodology.

In addition to the above, the NRC, through its inspection process, maintains access to evaluations performed for all changes to the COLR. 10 CFR 50.59 evaluations must also be submitted to the NRC consistent with the cycle-based SAR update submittal frequency in accordance with 10 CFR 50.71. Furthermore, updated COLR documents must be submitted to the NRC upon issuance. This provides the NRC prompt knowledge of changes made to the facility in this regard, in addition to the inspection process. Therefore, through the topical

report approval process, the inspection processes, and the existing TS or other regulatory requirements for submittal of updated COLR and related documents, the NRC maintains substantial oversight of the industry facilities with regard to continued safe operation. Because of these processes and rules (e.g., 10 CFR 50.59), the subject references can be deleted from the TS and maintained in the COLR without significantly impacting nuclear safety or NRC oversight capability, while greatly reducing unnecessary burden expended to perform TS changes to apply methodologies previously approved by the NRC.

The NRC previously approved the creation of a COLR containing specific core reload criteria/limits for TS parameters such as Departure from Nucleate Boiling Ratio and Peak Linear Heat Rate. The COLR is maintained outside the TSs under licensee control and updated under the requirements of 10 CFR 50.59 each cycle to support core reload and subsequent operation for the upcoming cycle. Generic Letter (GL) 88-16 stated, in part, that *“a number of TSs address limits associated with reactor physics parameters that generally change with each reload core, requiring the processing of changes to TS to update these limits each fuel cycle. If these limits are developed using an NRC-approved methodology, the license amendment process is an unnecessary burden on the licensee and the NRC.”*

The NRC also issued GL 91-08, permitting the relocation of various TS lists or components from the TSs to licensee controlled procedures or other documents (such as the SAR). In several cases, the relocated lists fell under the procedural controls specified in TS 6.4.1, while others were specifically associated with the requirements of 10 CFR 50.59. As discussed above, the COLR is considered a Licensing Basis Document (LBD) associated with the SAR by the various industry nuclear facilities and, therefore, falls under the update requirements of 10 CFR 50.59.

In addition to the above, the TS list of COLR references does not meet the criteria of 10 CFR 50.36 for inclusion in the TSs. This listing is not 1) installed instrumentation that is used to detect, and indicate in the control room, a significant abnormal degradation of the reactor coolant pressure boundary, 2) a process variable, design feature, or operating restriction that is an initial condition of a DBA or transient analysis that either assumes the failure of or presents a challenge to the integrity of a fission product barrier, 3) a structure, system or component that is part of the primary success path and which functions or actuates to mitigate a DBA or transient that either assumes the failure of or presents a challenge to the integrity of a fission product barrier, or 4) a structure, system, or component which operating experience or probabilistic risk assessment has shown to be significant to public health and safety. Therefore, 10 CFR 50.36 does not require inclusion of the COLR reference list within the TSs.

Based on the information provided above, Entergy believes it is acceptable to delete the TS listing of COLR references and maintain the reference list in the COLR. In addition, Entergy believes that this is consistent with the intent of 10 CFR 50.36 and with past NRC generic guidance describing information that need not be maintained within the TSs.

5.0 REGULATORY ANALYSIS

5.1 Applicable Regulatory Requirements/Criteria

10 CFR 50.36 governs the information which must be included in facility Technical Specifications (TSs). The Core Operating Limits Report (COLR) references currently contained in the Administrative Section of the TSs do not meet the 10 CFR 50.36 criteria requiring their inclusion in the TSs. The deletion of these references from TSs in favor of maintaining the references within the COLR does not change the application of any of the subject methodologies. In addition, future changes to the references or additions/deletions to the reference listing will be performed in accordance with the requirements of 10 CFR 50.59, which does not permit application of any methodology that has not been approved by the NRC. Furthermore, application of NRC-approved methodologies requires the licensee to meet the conditions stipulated in the NRC Safety Evaluation Report. Finally, revisions to either the COLR require the document to be submitted to the NRC immediately upon issuance.

In conclusion, Entergy has determined that the proposed change does not require any exemptions or relief from regulatory requirements, other than the TS, and does not affect conformance with any General Design Criteria (GDC) differently than described in the Safety Analysis Report (SAR).

5.2 No Significant Hazards Consideration

A change is proposed to the Arkansas Nuclear One, Unit 2 (ANO-2) Technical Specification (TS) 6.6.5, Core Operating Limits Report (COLR). Specifically, the list of analytical methods currently contained within TS 6.6.5.b is deleted. These references will heretofore be maintained within the COLR only.

Entergy Operations, Inc. (Entergy) has evaluated whether or not a significant hazards consideration is involved with the proposed amendment by focusing on the three standards set forth in 10 CFR 50.92, "Issuance of amendment," as discussed below:

1. Does the proposed change involve a significant increase in the probability or consequences of an accident previously evaluated?

Response: No.

Improper application of an analytical method can impact both the probability and consequences of accidents. However, no change to any method of evaluation results from deleting the information from the TSs and maintaining the methodology references in the COLR. In addition, revision to the list of methodologies will be controlled under the requirements of 10 CFR 50.59, which will not permit application of methodologies unless previously approved by the NRC and the conditions stipulated in the NRC Safety Evaluation Report (SER) for a specific methodology are met.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Does the proposed change create the possibility of a new or different kind of accident from any accident previously evaluated?

Response: No.

Methods of evaluation are not considered accident initiators. No physical changes to the facility are initiated by maintaining the subject information in the COLR and deleting the information from the TSs.

Therefore, the proposed change does not create the possibility of a new or different kind of accident from any previously evaluated.

3. Does the proposed change involve a significant reduction in a margin of safety?

Response: No.

Improper application of an analytical methodology can impact both the probability and consequences of accidents. However, no change to any method of evaluation results from the deletion of methodologies from the TS and maintaining the list in the COLR. In addition, revision to the list of methodologies following the deletion of the list from the TSs will be controlled under the requirements of 10 CFR 50.59, which will not permit application of methodologies unless previously approved by the NRC and the conditions stipulated in the NRC SER for a specific methodology are met.

Therefore, the proposed change does not involve a significant reduction in a margin of safety.

Based on the above, Entergy concludes that the proposed amendment presents no significant hazards consideration under the standards set forth in 10 CFR 50.92(c), and, accordingly, a finding of "no significant hazards consideration" is justified.

5.3 Environmental Considerations

The proposed amendment does not involve (i) a significant hazards consideration, (ii) a significant change in the types or significant increase in the amounts of any effluent that may be released offsite, or (iii) a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed amendment meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9). Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared in connection with the proposed amendment.

6.0 REFERENCES

1. 10 CFR 50.36, Technical Specifications, August 28, 2007.
2. Generic Letter 88-16, Removal of Cycle-Specific Parameter Limits from Technical Specifications, October 3, 1988.
3. Generic Letter 91-08, Removal of Component Lists from Technical Specifications, May 6, 1991.

Attachment 2

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Proposed Technical Specification Changes (mark-up)

ADMINISTRATIVE CONTROLS

6.6.5 Core Operating Limits Report~~ORE OPERATING LIMITS REPORT~~ (COLR)

- a. Core operating limits shall be established prior to each reload cycle, or prior to any remaining part of a reload cycle, and shall be documented in the COLR for the following:

- 3.1.1.1 Shutdown Margin – $T_{avg} > 200^{\circ}\text{F}$
- 3.1.1.2 Shutdown Margin - $T_{avg} \leq 200^{\circ}\text{F}$
- 3.1.1.4 Moderator Temperature Coefficient
- 3.1.3.1 CEA Position
- 3.1.3.6 Regulating and Group P CEA Insertion Limits
- 3.2.1 Linear Heat Rate
- 3.2.3 Azimuthal Power – T_q
- 3.2.4 DNBR Margin
- 3.2.7 Axial Shape Index

- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC, ~~specifically those described in the following documents and shall be listed in the COLR: The COLR will contain the complete identification for each of the topical reports used to prepare the COLR (i.e., report number, title, revision, date, and any supplements).~~

- 1) ~~"Qualification of the PHOENIX-P/ANC Nuclear Design System for Pressurized Water Reactor Cores" (WCAP-11596-P-A), "ANC: A Westinghouse Advanced Nodal Computer Code" (WCAP-10965-P-A), and "ANC: A Westinghouse Advanced Nodal Computer Code: Enhancements to ANC Rod Power Recovery" (WCAP-10965-P-A Addendum 1) (Methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margins, 3.1.1.4 for MTC, 3.1.3.6 for Regulating and Group P CEA Insertion Limits, and 3.2.4.b for DNBR Margin).~~
- 2) ~~"CE Method for Control Element Assembly Ejection Analysis," GENPD-0190-A (Methodology for Specification 3.1.3.6 for Regulating and Group P CEA Insertion Limits and 3.2.3 for Azimuthal Power Tilt).~~
- 3) ~~"Modified Statistical Combination of Uncertainties, CEN-356(V)-P-A, Revision 01-P-A (Methodology for Specification 3.2.4.c and 3.2.4.d for DNBR Margin and 3.2.7 for ASI).~~
- 4) ~~"Calculative Methods for the CE Large Break LOCA Evaluation Model," GENPD-132-P (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).~~
- 5) ~~"Calculative Methods for the CE Small Break LOCA Evaluation Model," GENPD-137-P (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).~~
- 6) ~~"CESEC Digital Simulation of a Combustion Engineering Nuclear Steam Supply System" (Methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margin, 3.1.1.4 for MTC, 3.1.3.1 for CEA Position, 3.1.3.6 for Regulating CEA and Group P Insertion Limits, and 3.2.4.b for DNBR Margin).~~

~~6.6.5 CORE OPERATING LIMITS REPORT (COLR) (Continued)~~

- ~~7) "Technical Manual for the CENTS Code," CENPD 282 P A (Methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margin, 3.1.1.4 for MTC, 3.1.3.1 for CEA Position, 3.1.3.6 for Regulating and Group P Insertion Limits, and 3.2.4.b for DNBR Margin).~~
- ~~8) "Implementation of ZIRLO Material Cladding in CE Nuclear Power Fuel Assembly Designs," CENPD 404 P A (modifies CENPD 132 P and CENPD 137 P as methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).~~
- ~~9) "Qualification of the Two-Dimensional Transport Code PARAGON," WCAP 16045 P A (may be used as a replacement for the PHOENIX P lattice code as the methodology for Specifications 3.1.1.1 and 3.1.1.2 for Shutdown Margins, 3.1.1.4 for MTC, 3.1.3.6 for Regulating and Group P CEA Insertion Limits, and 3.2.4.b for DNBR Margin).~~
- ~~10) "Implementation of Zirconium Diboride Burnable Absorber Coatings in CE Nuclear Power Fuel Assembly Designs," WCAP 16072 P A (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Tilt, and 3.2.7 for ASI).~~
- ~~11) "CE 16 x 16 Next Generation Fuel Core Reference Report," WCAP 16500 P A (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, 3.2.4.b, 3.2.4.c and 3.2.4.d for DNBR Margin, and 3.2.7 for ASI).~~
- ~~12) "Optimized ZIRLO™," WCAP 12610 P A and CENPD 404 P A Addendum 1 A (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).~~
- ~~13) "Westinghouse Correlations WSSV and WSSV-T for Predicting Critical Heat Flux in Rod Bundles with Side-Supported Mixing Vanes," WCAP 16523 P A (Methodology for Specification 3.2.4.b, 3.2.4.c and 3.2.4.d for DNBR Margin).~~
- ~~14) "ABB Critical Heat Flux Correlations for PWR Fuel," CENPD 387 P A (Methodology for Specification 3.2.4.b, 3.2.4.c and 3.2.4.d for DNBR Margin and 3.2.7 for ASI).~~
- ~~15) "Calculative Methods for the CE Nuclear Power Large Break LOCA Evaluation Model—Improvement to 1999 Large Break LOCA EM Steam Cooling Model for Less Than 1 in/sec Core Reflood," CENPD 132, Supplement 4 P A, Addendum 1 P A (Methodology for Specification 3.1.1.4 for MTC, 3.2.1 for Linear Heat Rate, 3.2.3 for Azimuthal Power Tilt, and 3.2.7 for ASI).~~

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- c. The core operating limits shall be determined such that all applicable limits (e.g. fuel thermal mechanical limits, core thermal hydraulic limits, Emergency Core Cooling System (ECCS) limits, nuclear limits such as SDM, transient analysis limits, and accident analysis limits) of the safety analysis are met.
- d. The COLR, including any midcycle revisions or supplements, shall be provided upon issuance for each reload cycle to the NRC.

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6.6.6 Containment Inspection Report

Any degradation exceeding the acceptance criteria of the containment structure detected during the tests required by the Containment Tendon Surveillance Program shall undergo an engineering evaluation within 60 days of the completion of the inspection surveillance. The results of the engineering evaluation shall be reported to the NRC within an additional 30 days of the time the evaluation is completed. The report shall include the cause of the condition that does not meet the acceptance criteria, the applicability of the conditions to the other unit, the acceptability of the concrete containment without repair of the item, whether or not repair or replacement is required and, if required, the extent, method, and completion date of necessary repairs, and the extent, nature, and frequency of additional examinations.

6.6.7 Steam Generator Tube Inspection Report

A report shall be submitted within 180 days after the initial entry into HOT SHUTDOWN following completion of an inspection performed in accordance with the Specification 6.5.9, *Steam Generator (SG) Program*. The report shall include:

- a. The scope of inspections performed on each SG,
- b. Active degradation mechanisms found,
- c. Nondestructive examination techniques utilized for each degradation mechanism,
- d. Location, orientation (if linear), and measured sizes (if available) of service induced indications,
- e. Number of tubes plugged during the inspection outage for each active degradation mechanism,
- f. Total number and percentage of tubes plugged to date,
- g. The results of condition monitoring, including the results of tube pulls and in-situ testing, and
- h. The effective plugging percentage for all plugging in each SG.

6.6.8 Specific Activity

The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.8. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded the results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Clean-up system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.

ADMINISTRATIVE CONTROLS

6.7 HIGH RADIATION AREA

As provided in paragraph 20.1601(c) of 10 CFR Part 20, the following controls shall be applied to high radiation areas in place of the controls required by paragraph 20.1601(a) and (b) of 10 CFR Part 20:

6.7.1 High Radiation Areas with Dose Rates Not Exceeding 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be barricaded and conspicuously posted as a high radiation area. Such barricades may be opened as necessary to permit entry or exit of personnel or equipment.
- b. Access to, and activities in, each such area shall be controlled by means of Radiation Work Permit (RWP), or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.
- c. Individuals qualified in radiation protection procedures and personnel continuously escorted by such individuals may be exempted from the requirement for an RWP or equivalent while performing their assigned duties provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 1. A radiation monitoring device that continuously displays radiation dose rates in the area; or
 2. A radiation monitoring device that continuously integrates the radiation dose rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 3. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area, or

ADMINISTRATIVE CONTROLS

6.7 HIGH RADIATION AREA (continued)

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4. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
 - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP or equivalent, while in the area, by means of closed circuit television, of personnel qualified in radiation protection procedures, responsible for controlling personnel radiation exposure in the area, and with the means to communicate with individuals in the area who are covered by such surveillance.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.

6.7.2 High Radiation Areas with Dose Rates Greater than 1.0 rem/hour at 30 Centimeters from the Radiation Source or from any Surface Penetrated by the Radiation, but less than 500 rads/hour at 1 Meter from the Radiation Source or from any Surface Penetrated by the Radiation

- a. Each entryway to such an area shall be conspicuously posted as a high radiation area and shall be provided with a locked or continuously guarded door or gate that prevents unauthorized entry, and, in addition:
 1. All such door and gate keys shall be maintained under the administrative control of the shift manager, radiation protection manager, or his or her designee.
 2. Doors and gates shall remain locked except during periods of personnel or equipment entry or exit.
- b. Access to, and activities in, each such area shall be controlled by means of an RWP or equivalent that includes specification of radiation dose rates in the immediate work area(s) and other appropriate radiation protection equipment and measures.

ADMINISTRATIVE CONTROLS

6.7 HIGH RADIATION AREA (continued)

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- c. Individuals qualified in radiation protection procedures may be exempted from the requirement for an RWP or equivalent while performing radiation surveys in such areas provided that they are otherwise following plant radiation protection procedures for entry to, exit from, and work in such areas.
- d. Each individual or group entering such an area shall possess:
 - 1. A radiation monitoring device that continuously integrates the radiation rates in the area and alarms when the device's dose alarm setpoint is reached, with an appropriate alarm setpoint, or
 - 2. A radiation monitoring device that continuously transmits dose rate and cumulative dose information to a remote receiver monitored by radiation protection personnel responsible for controlling personnel radiation exposure within the area with the means to communicate with and control every individual in the area, or
 - 3. A self-reading dosimeter (e.g., pocket ionization chamber or electronic dosimeter) and,
 - (i) Be under the surveillance, as specified in the RWP or equivalent, while in the area, of an individual qualified in radiation protection procedures, equipped with a radiation monitoring device that continuously displays radiation dose rates in the area; who is responsible for controlling personnel exposure within the area, or
 - (ii) Be under the surveillance as specified in the RWP, or equivalent, while in the area by means of closed circuit television, or personnel qualified in radiation protection procedures responsible for controlling personnel radiation exposure in the area and with the means to communicate with individuals in the area who are covered by such surveillance.
 - 4. In those cases where options (2) and (3), above, are impractical or determined to be inconsistent with the "As Low As is Reasonably Achievable" principle, a radiation monitoring device that continuously displays radiation dose rates in the area.
- e. Except for individuals qualified in radiation protection procedures, or personnel continuously escorted by such individuals, entry into such areas shall be made only after dose rates in the area have been determined and entry personnel are knowledgeable of them. These continuously escorted personnel will receive a pre-job briefing prior to entry into such areas. This dose rate determination, knowledge, and pre-job briefing does not require documentation prior to initial entry.
- f. Such individual areas that are within a larger area where no enclosure exists for the purpose of locking and where no enclosure can reasonably be constructed around the individual area need not be controlled by a locked door or gate, nor continuously guarded, but shall be barricaded, conspicuously posted, and a clearly visible flashing light shall be activated at the area as a warning device.