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| FNP Program: Reactor Vessel Surveillance Program | Document Type: NUREG-1801 Program Exception Comparison |
| Version: 1 | |

FNP Reactor Vessel Surveillance Program Exception Comparison

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| FNP Program | Reactor Vessel Surveillance Program; <i>LRA Section B.3.4</i> |
| NUREG-1801 Reference | XI.M31, Reactor Vessel Surveillance |
| Precedent Program | Ft. Calhoun Reactor Vessel Integrity Program <i>LRA Appendix B, Section B.1.7</i> |
| Precedent Program SER Reference | ML031120003, NUREG XXXX (dated 4/21/2003) <i>Section 3.1.2.3.1</i> |

1. OBJECTIVE

This document supports application for renewal of the FNP Units 1 and 2 operating licenses.

This document compares the FNP Reactor Vessel Surveillance Program exception to NUREG-1801 to a previously submitted program credited by another applicant. The objective is to identify areas where similar exceptions to NUREG-1801 have been previously accepted by the NRC staff in an SER.

The FNP Reactor Vessel Surveillance Program is consistent with NUREG-1801, Sections XI.M31 with exception. This comparison document focuses solely on the FNP exception to NUREG-1801. Other program attributes have been determined to be consistent with NUREG-1801 and need not be addressed. Therefore, this document addresses the exception identified in Appendix B.3.4 for the Reactor Vessel Surveillance Program. The exception is particular to the Reactor Vessel Surveillance Program.

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2. PROGRAM EXCEPTION COMPARISON:

2.1 FNP Reactor Vessel Surveillance Program Exception

The FNP Reactor Vessel Surveillance Program LRA documentation identifies the following exception from NUREG-1801 Section XI.M31:

(From the FNP LRA, Section B.3.4.3)

“The singular exception to the eight (8) acceptable program items described in NUREG-1801 relates to SNC’s proposed surveillance capsule removal schedule. NUREG-1801 specifies that all remaining surveillance capsules are to be removed at a 60-year fluence and alternate dosimetry installed. For FNP Unit 1, SNC has removed one capsule at a fluence approximately equivalent to 60 years. For FNP Unit 2, SNC will remove one capsule at a fluence approximately equivalent to 60 years. For each unit, one capsule will remain in the reactor vessel until a fluence of approximately 80-years.”

2.2 Precedent LRA Reference (Ft. Calhoun)

(From the Ft. Calhoun (FCS) LRA, Appendix B, Section B.1.7)

“The FCS Reactor Vessel Integrity Program is consistent with XI.31, “Reactor Vessel Surveillance, as identified in NUREG-1801 with the exception of the following enhancements that will be made to the Reactor Vessel Integrity Program prior to the period of extended operation.”

NUREG-1801 Program

Criteria

Enhancement

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| “XI.31, Reactor Vessel Surveillance” | <p>“Evaluation and Technical Basis</p> <p>Reactor vessel surveillance programs are plant specific, depending on matters such as the composition of limiting materials, availability of surveillance capsules, and projected fluence levels. In accordance with 10 CFR Part 50, Appendix H, an applicant submits its proposed withdrawal schedule for approval prior to implementation. Thus, further staff evaluation is required for license renewal.”</p> | <p>“The revised, optimized withdrawal and test schedule was submitted to the NRC staff for review and approval per OPPD Letter LIC-01-0107 dated November 8, 2001.”</p> |
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2.3 Precedent SER Reference (Ft. Calhoun)

The Ft. Calhoun SER, Section 3.1.2.3.1 provides the staff's assessment of the Ft. Calhoun Reactor Vessel Integrity Program:

"The staff reviewed the enhancement and its justification to determine whether the AMP, with the enhancement, remains adequate to manage the aging effects for which it is credited. The staff also reviewed the USAR Supplement to determine whether it provides an adequate description of the revised program. The staff further reviewed the applicant's evaluation to determine whether it addressed the additional issues recommended in the GALL Report, and confirmed that the AMP would adequately address these issues.

In LRA Section B.1.7, "Reactor Vessel Integrity Program," the applicant described its AMP to manage aging in the reactor vessel beltline shell and welds. The LRA stated that this AMP is consistent with GALL AMP XI.31, with an enhancement that the revised, optimized withdrawal and test schedule was submitted for review and approval per OPPD Letter LIC-01-0107 dated November 8, 2001. For this AMP, GALL recommends further evaluation. The proposed withdrawal schedule was reviewed and approved by the staff in a letter from S. Dembek (NRC) to R. T. Ridenoure (OPPD) dated May 2, 2002. In this letter, the staff found the revised withdrawal schedule acceptable for 60 years. In addition, the staff approved an integrated surveillance program for FCS as described in CEN-636, Revision 2, in a safety evaluation dated June 6, 2001. The use of the integrated surveillance program allows OPPD to utilize data originating from the surveillance programs at Mihama 1, Palisades, and Diablo Canyon Unit 1, to monitor neutron irradiation embrittlement to the FCS reactor vessel beltline. The weld materials in Mihama 1, Palisades, and Diablo Canyon Unit 1 surveillance capsules contain material that is representative of the weld materials in the FCS beltline. The staff review that was documented in letters dated June 6, 2001, and May 2, 2002, satisfies the SRP recommendation for further evaluation.

The applicant provided its USAR Supplement for the RVIP in Section A.2.19 of the LRA. The staff reviewed the USAR Supplement and finds that the summary description contains a sufficient level of information to satisfy 10 CFR 54.21(d), and is acceptable."

2.4 Discussion

The FCS program exception to the NUREG-1801 program is a revised, optimized capsule withdrawal and test schedule. The NRC has reviewed this revised withdrawal schedule and found it to be acceptable for 60 years. As with the FCS program, GALL recommends further evaluation of the FNP program because it has an exception to the NUREG-1801 program. Reactor vessel surveillance programs are plant specific depending on matters such as composition of the limiting materials, availability of surveillance capsules and projected fluence levels. Therefore, the FNP program's capsule withdrawal and test schedule will require further staff evaluation.

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A withdrawal schedule different from that of NUREG-1801 is utilized by the FNP program yet the program provides for adequate management of the aging effects for which it is credited, and should be acceptable for 60 years.

3. CONCLUSION

The FNP LRA takes an exception to NUREG-1801, XI.M31 regarding the schedule for reactor vessel surveillance capsule removal. As documented in the Ft. Calhoun LRA and draft SER, a similar exception taken by Ft. Calhoun was approved by the staff. Reactor vessel surveillance programs are plant specific depending on matters such as composition of the limiting materials, availability of surveillance capsules and projected fluence levels. Therefore, the FNP program’s capsule withdrawal and test schedule will require further staff evaluation.