

FNP Program: Fuel Oil Chemistry Control Program	Document Type: NUREG-1801 Program Exception Comparison
Version: 1	

FNP Fuel Oil Chemistry Control Program Exception Comparison

FNP Program	Fuel Oil Chemistry Control Program; <i>LRA Section B.4.2</i>
NUREG-1801 Reference	XI.M30, Fuel Oil Chemistry
Precedent Program	Robinson Fuel Oil Chemistry Program; <i>LRA Appendix B.3.10</i>
Precedent Program SER Reference	Robinson , DRAFT SER (dated August 25, 2003); Section 3.3.2.3.6

1. OBJECTIVE

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

This document compares the FNP Fuel Oil Chemistry 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 Fuel Oil Chemistry Control Program is consistent with NUREG-1801, Section XI.M30 with exception. This comparison document focuses solely on the FNP exception to NUREG-1801 identified in the FNP LRA, Appendix B.4.2. Other program attributes have been determined to be consistent with NUREG-1801 and need not be addressed.

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2. PROGRAM EXCEPTION COMPARISON:

2.1 FNP Fuel Oil Chemistry Program Exception

The FNP Fuel Oil Chemistry Control Program LRA documentation identifies the following exception from NUREG-1801, Section XI.M30.

(From the FNP LRA, Section B.4.2.3)

“The specific ASTM Standards that FNP uses as guidelines for sampling and sample analysis are governed by the plant Technical Specifications. These differ from those cited in NUREG-1801, Section XI.M30. A comparison of the standards cited in the plant Technical Specifications and procedures against the standards cited in NUREG-1801, Section XI.M30 was performed.

The FNP Program performs water, sediment, and viscosity analyses. FNP does not credit particulate analysis of fuel oil for aging management. Particulate analysis is performed on diesel fuel to address diesel performance concerns (i.e. filter clogging) and does not have a significant impact on pressure boundary integrity.

Since the parameters important to corrosion are monitored by the FNP Program, no significant difference exists in the ability of the program to manage aging effects. Operating experience confirms that the FNP Fuel Oil Chemistry Program has been effective in managing aging.”

2.2 Precedent LRA Reference (Robinson)

(From the Robinson LRA, Appendix B.3.10)

“Parameters Monitored/Inspected, Detection of Aging Effects and Acceptance Criteria: Alternate standards and acceptance criteria are used for fuel oil sampling at RNP in place of the ASTM standards recommended in the GALL Report.”

And,

These differences have been evaluated and determined to result in no significant adverse effects on the ability of the program to manage aging effects.

2.3 Precedent SER Reference (Robinson) (SER Section 3.3.2.3.6)

“Parameters Monitored/Inspected, Detection of Aging Effects and Acceptance Criteria: The applicant has used alternate standards and acceptance criteria for fuel oil sampling at RNP in place of the ASTM standards recommended in GALL XI.M30. The standards being used at RNP meet or exceed those recommended in GALL. For example, ASTM Standard D 4057 recommended in GALL addresses industry practices for sampling techniques in large fuel oil storage tanks in the petroleum industry. These tanks are significantly larger than the tanks at RNP. NRC Inspection Report 91-21 discussed the

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methodology used in sampling the diesel fuel oil storage tank at RNP. The method used at RNP of recirculating the oil within the tank was shown to be equivalent to the industry standard to which RNP is committed (ASTM D 270-1975). The NRC was satisfied with the testing results, showing samples drawn using both methods yielded virtually identical results...This testing provided justification for the licensee to obtain fuel oil storage tank samples by their existing methodology. ASTM D 2276 covers the test method for determination of particulate contaminants in aviation turbine fuel using a field monitor.”

2.4 Discussion

The Robinson SER documents that alternate standards may be approved by the NRC staff. A similar exception is taken within the FNP Fuel Oil Chemistry Program.

Based on the above SER paragraph, the following points are highlighted:

- A significant similarity is that Robinson’s commitment regarding sampling techniques is ASTM D270-75 in lieu of the GALL prescribed ASTM D4057. FNP is committed to ASTM D270-65 by T.S.
- A significant difference is that, consistent with NUREG-1801 Section XI.M30, Robinson credits particulate testing. FNP does not credit particulate testing.

The Robinson process included an NRC inspection report for RNP that specifically addressed the adequacy of sampling to ASTM D270 (As compared with ASTM D4057 referenced in NUREG-1801. RNP performed a detailed sampling analysis to demonstrate that for smaller tanks the methodology contained within D270 yielded equivalent samples. The 1991 inspection report detailing this information was not available electronically from the NRC’s web site.

3. CONCLUSION

NRC staff approval of the Robinson Fuel Oil Chemistry Program indicates that alternate standards can be acceptable, provided that the program is effective at managing the effects of aging .[Note: The Hatch program also uses alternate standards.] As stated in the LRA, FNP’s operating experience confirms the current program is effective at managing aging.

An exact match to the standards used by FNP was not found. Further staff evaluation of the standards used in FNP’s Fuel Oil Chemistry Program is indicated.

In addition, the acceptability of utilizing ASTM D270 in lieu of ASTM D4057 may potentially be justified by Robinson’s past precedent. However, the Robinson program credits ASTM D270-75, while FNP credits ASTM D270-65. The difference between these two standards is not known without further research.