FNP Program: Non-EQ Cables Program	Document Type: Plant-Specific Program Attribute Comparison
Version: 1	

FNP Non-EQ Cables Program Attribute Comparison

FNP Program	Non-EQ Cables Program; Non-EQ Electrical Cables Used in Instrumentation Circuits (Alternate XI.E2) Subprogram (LRA Section B.5.6.1)
Precedent Program	**Robinson** Aging Management Program for Neutron Flux Instrumentation Circuits Added in response to RAI 3.6.1-2 and RAI B.4.6-3.
Precedent Program SER Reference	SER Section 3.6.2.3.2.

1. OBJECTIVE

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

This document compares the FNP Non-EQ Electrical Cables Used in Instrumentation Circuits (Alternate XI.E2) portion of the Non-EQ Cables Program's pertinent attributes against a previously submitted program credited by another applicant. The objective is to identify areas where similar program attributes have been previously accepted by the NRC staff in an SER.

Comparisons of plant specific programs, which are those that are different from any of the programs evaluated in NUREG-1801, require comparisons of pertinent program attributes. These will typically include the first six attributes only:

- Program Scope
- Preventive Actions
- Parameters Inspected or Monitored
- Detection of Aging Effects
- Acceptance Criteria
- Monitoring and Trending

The corrective action, confirmatory process, and administrative controls attributes are considered to be plant-specific attributes common to all aging management programs. Therefore, no comparison is made for these three attributes.

The operating experience attribute is plant-specific and cannot be directly compared to another applicant. Therefore, no comparison is made for this attribute.

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2. PROGRAM ATTRIBUTE COMPARISON:

2.1 Program Scope

2.1.1. FNP LRA

"The FNP program will include electrical cables used in circuits with sensitive, high voltage, low-level signals such as radiation monitoring and nuclear instrumentation."

2.1.2. Precedent LRA (Robinson) (From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.1.3. Precedent SER Reference (Robinson) (From the Robinson SER, Section 3.6.2.3.2)

"The Robinson program includes non-EQ cables used in the source range, intermediate range, power range, and gamma-metrics instrumentation circuits of the excore nuclear instrumentation system."

2.1.4. Discussion

The set of components included in the FNP scope is identical to that described in the RNP program scope. Therefore, the staff evaluation and acceptance of the RNP program scope is applicable to the scope of the FNP program.

2.2 Preventive Actions

2.2.1. FNP LRA

"There are no preventive actions associated with this testing program."

2.2.2. Precedent LRA (Robinson) (From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.2.3. Precedent SER Reference (Robinson) (From the Robinson SER, Section 3.6.2.3.2)

''The applicant stated that no actions are taken as part of this program to prevent or mitigate aging degradation.''

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2.2.4. Discussion

No preventive actions are credited for either the FNP program or the RNP program. Therefore, the staff evaluation and acceptance of the RNP program preventive actions is applicable to the FNP program preventive actions.

2.3 Parameters Inspected or Monitored

2.3.1. FNP LRA

"Parameters monitored will be determined from the type of test performed and will be specific to radiation monitoring and nuclear instrumentation circuits."

2.3.2. Precedent LRA (Robinson) (From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.3.3. Precedent SER Reference (Robinson) (From the Robinson SER, Section 3.6.2.3.2)

"The applicant stated that the aging effect to be managed by the Aging Management Program for Neutron Flux Instrumentation Circuits is loss of dielectric strength caused by thermal/ thermoxidative degradation of organics or radiation-induced oxidation (radiolysis) of organics."

2.3.4. Discussion

The FNP program parameters inspected or monitored will be determined from the type of test performed. From Table 3.6.2-1 in the LRA, the aging effect requiring management is reduced insulation resistance. This is consistent with the RNP program parameters inspected or monitored.

Therefore, the staff evaluation and acceptance of the RNP program parameters inspected or monitored is applicable to the FNP program parameters monitored or inspected.

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2.4 Detection of Aging Effects

2.4.1. FNP LRA

"A representative sample of instrumentation circuit cables with sensitive, high voltage, low-level signals which are installed in adverse localized environments will be tested at least once every 10 years. The first test will be completed before the beginning of the period of extended operation."

2.4.2. Precedent LRA (Robinson) (From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.4.3. Precedent SER Reference (Robinson) (From the Robinson Draft SER, Section 3.6.2.3.2)

''The cables used in neutron flux instrumentation circuits will be tested at least once every 10 years. The first test will be completed before the end of the initial 40-year license term."

2.4.4. Discussion

The FNP program detects aging effects in a manner consistent with that described in the RNP program. FNP specifies that the type of test performed will be applicable to radiation monitoring and nuclear instrumentation circuits. RNP provides examples of possible testing methods but does not specify one. Similarly, FNP has not specified the type of testing method and plans to monitor industry activities to determine the most appropriate testing method.

Therefore, the staff evaluation and acceptance of the RNP program's detection of aging effects is applicable to the FNP program's detection of aging effects.

2.5 Monitoring and Trending

2.5.1. FNP LRA

"Monitoring and trending are not included in this program. Industry data indicates the ability to trend results is limited."

2.5.2. Precedent LRA (Robinson)

(From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.5.3. Precedent SER Reference (Robinson) (From the Robinson Draft SER, Section 3.6.2.3.2)

"The applicant states that trending of discrepancies will be performed as required in accordance with the RNP Corrective Action Program."

2.5.4. Discussion

Trending actions are not included as part of this program because the ability to trend test results is dependent on the specific type of test chosen. Although not a requirement, test results that are trendable provide additional information on the rate of degradation. This aspect of the FNP program is consistent with the Alternate XI.E2 Program developed by the License Renewal Electrical Working Group. In addition, FNP will initiate corrective actions when an unacceptable condition or situation is identified, including a determination as to whether the same condition is applicable to other high voltage, low-level signal circuits exposed to similar adverse localized environments.

Although the FNP program monitoring and trending attributes differ slightly from the RNP program monitoring and trending attributes, they are consistent with guidelines developed by the License Renewal Electrical Working Group and provide an acceptable approach.

2.6 Acceptance Criteria

2.6.1. FNP LRA

"The acceptance criteria for each test performed on radiation monitoring and nuclear instrumentation circuits will be defined by the specific type of test performed and the specific cable tested."

2.6.2. Precedent LRA (Robinson)

(From the Robinson LRA, Section B.4.6)

"This program was not included in the LRA. It was added in response to RAI 3.6.1-2 and RAI B.4.6-3."

2.6.3. Precedent SER Reference (Robinson) (From the Robinson SER, Section 3.6.2.3.2)

''The acceptance criteria will be determined based on the test selected for this program.''

2.6.4. Discussion

The FNP program acceptance criteria will be defined by the type of test performed. This is consistent with the RNP program acceptance criteria.

Therefore, the staff evaluation and acceptance of the RNP program acceptance criteria is applicable to the FNP program acceptance criteria.

3. ATTRIBUTE COMPARISON SUMMARY

The FNP program attributes, as described in the FNP LRA are generally consistent with the RNP program attributes described in the RNP SER. Both programs are based on guidelines developed by the License Renewal Electrical Working Group.

Based on this consistency, the staff evaluation and acceptance of the RNP program is applicable to the FNP program.