



**ENERGY
NORTHWEST**

Presubmittal Meeting:
License Amendment Request for One-Time
Completion Time Extension to Actions for
Inoperable Electrical Distribution Subsystems

April 6, 2020

Participants

- ✦ Richard Garcia – Supervisor, Licensing (presenter)
- ✦ Desiree Wolfgramm – Manager, Regulatory Affairs
- ✦ James Darling – Work Control Manager
- ✦ Mike Pezzetti – Assistant Operations Manager, Operations Support
- ✦ Keven Van Speybroeck, Manager, Technical Services Engineering
- ✦ Kevin Eldridge – Supervisor, Engineering
- ✦ David Clymer – Supervisor, Engineering
- ✦ Woody Layne – Principle Engineer, PRA

Agenda

- ✦ Purpose
- ✦ Proposed Change
- ✦ Reason for Request
- ✦ System Description
- ✦ Licensing Basis
- ✦ License Amendment Request (LAR) Approach
- ✦ Conclusion
- ✦ LAR Submittal Schedule
- ✦ Questions

Purpose

- ✦ Present Energy Northwest's approach for a LAR to address contingency actions related to a 10 CFR Part 21 issue which will be addressed in Spring 2021 refueling outage
- ✦ Explain the basis for this request and provide a summary of the content to be provided in the formal application to ensure NRC staff have the information necessary to appropriately consider this request

Proposed Change

- ✦ Delete an expired note regarding a one-time completion time extension to TS Action 3.8.7.A.1
- ✦ Add the following note to the TS required Actions 3.8.4.G.1, 3.8.7.A.1 and 3.8.7.B.1 for the remainder of the current operating cycle (Cycle 25)

-----NOTE-----

During Cycle 25, a Completion Time of 16 hours is applicable for replacement of WMA-42-8F1E or its failed starter coil.

Reason for Request

- ✦ Loss of cooling to certain Division 2 Electrical Distribution subsystems may result from starter coil failure due to a defective control power transformers (CPT) supporting Division 2 Vital Island cooling. (reference ML19247C581)
- ✦ 10 CFR Part 21 resolution for this component is to replace WMA-42-8F1E (which includes the CPT) during Spring 2021 outage
- ✦ Online repair work can be done to replace starter coils or buckets to address emergent failures
 - Replacement coils would be susceptible to failing prior to end of service life due to defective CPTs

Reason for Request

- ✦ In field work requires a minimum of 2 hours to replace a starter coil and may extend beyond 8 hours
- ✦ Loss of a 125 V DC electrical distribution subsystem allows only 2 hours for restoration
- ✦ Loss of a 4160 V AC electrical distribution subsystem allows 8 hours for restoration
- ✦ Failure to restore in either case would result in follow up actions to be in Mode 3 in 12 hours

Current System Description

- ✦ Division 2 Critical Switchgear HVAC
 - Continuously operated during all plant modes
 - Maintains temperatures between 55 F and 104 F during normal operation
 - Maintains temperatures within equipment qualification limits during emergency operation mode
 - Removes combustible gases generated by emergency batteries by continuous exhaust of battery rooms (no recirculation)

Current System Description

- ✦ Class 1E Alternating Current Distribution System
 - Class 1E electrical distribution to 3 divisions of 4160, 480, 120/240 and 120/208 Volt buses
 - Ensures AC electrical power supplied to engineered safety features needed to achieve and maintain reactor shutdown for anticipated operational occurrences and design basis accidents
 - Single failure proof design; 2 of 3 systems provide power to adequate ESF components for shutdown
 - Division 2 4160 Volt bus SM-8 major loads are RHR B and C trains and Division 2 SW

Current System Description

- ✦ Class 1E Direct Current Distribution System
 - Three 125 VDC divisions and one 250 VDC division
 - Provides control power to the onsite AC emergency power system as well as motive and control power to selected safety equipment
 - Battery chargers supply normal power to DC loads with automatic swap to batteries on charger loss
 - Has sufficient independence and redundancy to perform its safety functions, assuming a single failure
 - Division 2 125 V DC subsystem provides control power to 4160 V (SM-8) and 460 V load centers, emergency lighting, DG-2 auxiliary and control power

Current Licensing Basis

✦ LCO 3.8.4 DC Sources Operating

- Requires 3 divisions of DC subsystems to be operable in Mode 1, 2 and 3

G. Division 1 or 2 125 V DC electrical power subsystem inoperable for reasons other than Condition A or D.	G.1 Restore Division 1 and 2 125 V DC electrical power subsystems to OPERABLE status.	2 hours
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- Condition J addresses failure to meet Completion time of Condition G with action to Be in Mode 3 within 12 hours

Current Licensing Basis

✦ LCO 3.8.7 Distribution Systems - Operating

- Requires (in part) Division 1 and 2 125 V DC subsystems and AC subsystems to be operable in Mode 1, 2 and 3

<p>A. Division 1 or 2 AC electrical power distribution subsystem inoperable.</p>	<p>A.1 Restore Division 1 and 2 AC electrical power distribution subsystems to OPERABLE status.</p>	<p>8 hours¹</p> <p><u>AND</u></p> <p>16 hours from discovery of failure to meet LCO 3.8.7.a or b</p>
<p>B. Division 1 or 2 125 V DC electrical power distribution subsystem inoperable.</p>	<p>B.1 Restore Division 1 and 2 125 V DC electrical power distribution subsystems to OPERABLE status.</p>	<p>2 hours</p> <p><u>AND</u></p> <p>16 hours from discovery of failure to meet LCO 3.8.7.a or b</p>

Current Licensing Basis

✦ LCO 3.8.7 Distribution Systems - Operating

C. Required Action and associated Completion Time of Condition A or B not met.	C.1 -----NOTE----- LCO 3.0.4.a is not applicable when entering MODE 3. ----- Be in MODE 3.	12 hours
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Proposed Licensing Basis Example

✦ LCO 3.8.4 DC Sources Operating

<p>G. Division 1 or 2 125 V DC electrical power subsystem inoperable for reasons other than Condition A or D.</p>	<p>G.1 Restore Division 1 and 2 125 V DC electrical power subsystems to OPERABLE status.</p>	<p>-----NOTE----- During Cycle 25, a Completion Time of 16 hours is applicable for replacement of WMA-42-8F1E or its failed starter coil. ----- 2 hours</p>
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LAR Approach

- ✦ Deterministic evaluation with risk insights developed in accordance with Reg Guide 1.177
- ✦ Considerations for:
 - actual heatup of critical switchgear
 - impact to station blackout coping analysis
 - defense in depth of AC and DC electrical power systems
 - Removal of combustible battery gasses

LAR Approach

✦ Risk Considerations Included in LAR

- PRA Model adequacy for Full Power Internal Events, Fire and Seismic Models
- Evaluation of incremental conditional core damage probability (ICCDP) and incremental conditional large early release probability (ICLERP)
- Risk Significant Configurations and Insights including weather events and external hazards beyond fire and seismic
- Configuration Risk Management Program
- Compensatory Measures

Conclusion

- ✦ Technical evaluations and risk insights establish reasonable assurance that health and safety of the public will not be endangered by proposed limited use completion time extension.
- ✦ The quantitative results for ICCDP and ICLERP for the CT extension application are less than the guidance thresholds
- ✦ Further risk reduction will be obtained by additional compensatory measures outlined in a regulatory commitment

LAR Submittal Schedule

- ✦ 4/6/2020 - Presubmittal meeting
- ✦ 4/15/2020 – Target LAR submittal
- ✦ 6/15/2020 – Requested approval date

NRC Questions