



**Robinson / NRC Pre-submittal Meeting:
LAR to Remove 4.160 kV bus 2 from Surveillance Requirement 3.8.1.16**

March 30, 2022



Duke Energy Attendees

Lee Grzeck (Manager, Nuclear Fleet Licensing)

Joshua Duc (Nuclear Fleet Licensing)

Keith Beatty (RNP Engineering)

Alan Helms (RNP Engineering)

David Zybak (RNP Operations)

- Current and Proposed Technical Specification (TS) / Surveillance Requirement (SR)
- System Design and Operation
- Reason for the Proposed Change
- Background
- Justification
- Schedule

Current and Proposed TS / SR

3.8 ELECTRICAL POWER SYSTEMS

3.8.1 AC Sources - Operating

- LCO 3.8.1 The following AC electrical sources shall be OPERABLE:
- Two qualified circuits between the offsite transmission network and the onsite emergency AC Electrical Power Distribution System; and
 - Two diesel generators (DGs) capable of supplying the onsite emergency power distribution subsystem(s).

APPLICABILITY: MODES 1, 2, 3, and 4.

SR 3.8.1.16

-----NOTE-----

- This Surveillance shall not be performed in MODE 1 or 2.
- SR 3.8.1.16 is not required to be met if ~~4-160 kV bus 2 and~~ 480 V Emergency Bus 1 power supply is from a start up transformer.

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lower case "b"

Verify automatic transfer capability of the ~~4-160 kV bus 2 and the~~ 480 V Emergency bus 1 loads from the Unit auxiliary transformer to a start up transformer.

In accordance with the Surveillance Frequency Control Program

System Design and Operation

- TS 3.8.1 Bases
 - Design of AC electrical power system ensures power to Engineered Safety Feature (ESF) systems
 - Offsite circuit: equipment required to transmit power from offsite transmission network to ESF buses
- Normal 100% power lineup from Startup Transformers (SUT), Unit Auxiliary Transformer (UAT):
 - 115 kV SUT → 4.160 kV bus 6 → 480 V Emergency bus 1 (ESF bus E1)
 - 230 kV SUT → 4.160 kV bus 9 → 480 V Emergency bus 2 (ESF bus E2)
 - UAT → 4.160 kV bus 2
- SR 3.8.1.16 automatic transfer from UAT to SUT
 - Breakers 52/7 and 52/20 open; breakers 52/12 and 52/19 close

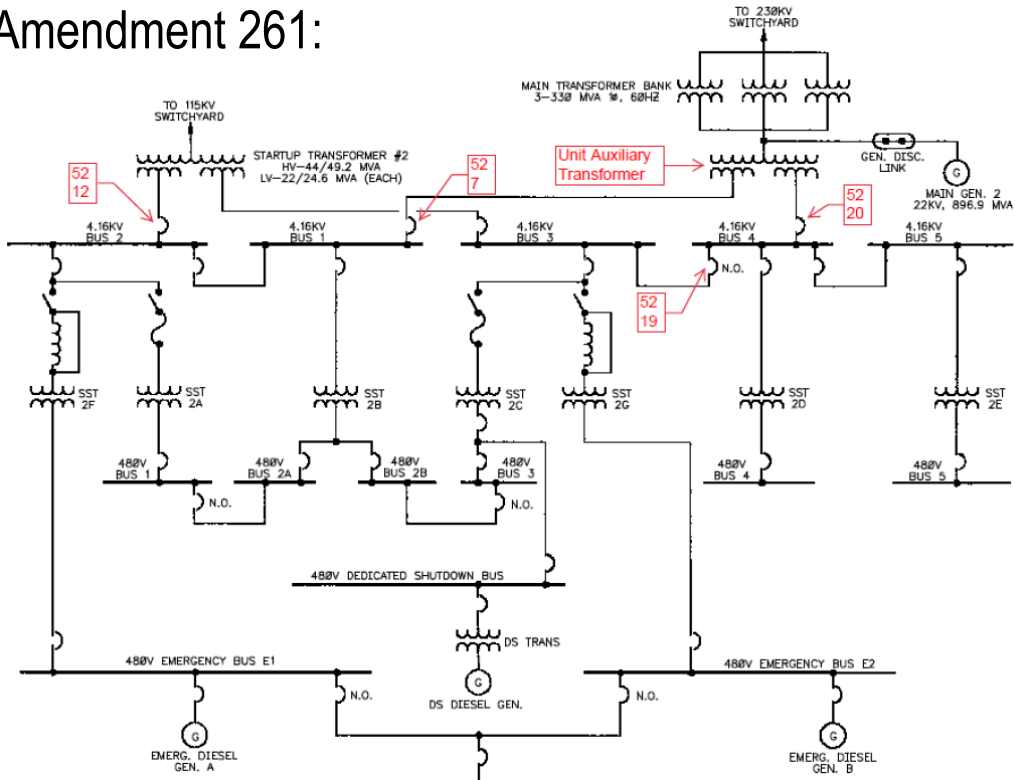
Reason for the Proposed Change

- SR 3.8.1.16 requires auto transfer capability for both 4.160 kV bus 2 and 480 V Emergency bus 1
- Amendment 261 added 230 kV SUT and four 4.160 kV buses
 - Direct 4.160 kV feed to 480 V Emergency bus 1 changed from bus 2 to bus 6
 - 480 V Emergency bus 1 can now be aligned to SUT when 4.160 kV bus 2 is not
- Maintenance that prevents auto transfer of 4.160 kV bus 2 results in SR 3.8.1.16 not met
 - 480 V Emergency bus 1 is aligned to offsite power, so there is no applicable TS 3.8.1 Condition
 - SR 3.8.1.16 Note 2 does not alleviate this situation

SR 3.8.1.16

- NOTE-----
1. This Surveillance shall not be performed in MODE 1 or 2.
 2. SR 3.8.1.16 is not required to be met if 4.160 kV bus 2 and 480 V Emergency Bus 1 power supply is from a start up transformer.
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- Amendment 176 (improved Standard TS) added SR 3.8.1.16
- Prior to Amendment 261:



- TS 3.8.1 and associated Bases
 - Required loads to consider offsite circuits operable are the ESF bus loads
- Amendment 176 justification for adding SR 3.8.1.16:
 - “...added to verify the automatic transfer of the emergency bus E1 loads from the unit auxiliary transformer to the startup transformer.”
- Amendment 261
 - Direct 4.160 kV feed to 480 V Emergency bus 1 changed from 4.160 kV bus 2 to bus 6
- Removal (vs. replacement) of the 4.160 kV bus better focuses SR 3.8.1.16 on the required ESF loads

- Submit LAR by April 28, 2022
- Implementation within 120 days of receipt of safety evaluation

