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August 27, 2020
GO2 20-119

10 CFR 50.90

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Subject: **COLUMBIA GENERATING STATION, DOCKET NO. 50-397 RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION RELATED TO EXIGENT LICENSE AMENDMENT REQUEST FOR CHANGE TO TECHNICAL SPECIFICATION 3.8.7 DISTRIBUTION SYSTEMS – OPERATING**

References:

1. Letter from R.E. Schuetz, Energy Northwest, to NRC, "Exigent License Amendment Request for Change to Technical Specification 3.8.7 Distribution Systems – Operating," dated August 20, 2020 (ADAMS Accession Number ML20233A976)

2. Email from S. Lee, NRC, to D. M. Wolfgramm, Energy Northwest, "Columbia Request for Additional Information: Exigent License Amendment Request to Extend Technical Specification 3.8.7, Distribution Systems – Operating, completion time (EPID: L-2020-LLA-0180)," dated August 22, 2020

3. Letter from R.E. Schuetz, Energy Northwest, to NRC, "Response to Request for Additional Information Related to Exigent License Amendment Request for Change to Technical Specification 3.8.7 Distribution Systems – Operating," dated August 24, 2020 (ADAMS Accession Number ML20238A706)

4. Email from S. Lee, NRC to D. M. Wolfgramm, Energy Northwest, "Columbia additional request for additional information: Exigent license amendment request to extend Technical Specification 3.8.7, "Distribution Systems – Operating," completion time (EPID: L-2020-LLA-0181)," dated August 26, 2020

Dear Sir or Madam:

By Reference 1, Energy Northwest submitted an exigent License Amendment Request for a change to Technical Specification (TS) 3.8.7 Distribution Systems – Operating. By Reference 2 the Nuclear Regulatory Commission (NRC) requested additional information related to the Energy Northwest submittal. By Reference 3 Energy Northwest submitted responses to Reference 2. By Reference 4, the NRC issued a second request for additional information. The enclosure to this letter contains the requested information.

The No Significant Hazards Consideration Determination provided in the original submittal is not altered by this submittal. No new commitments are being made by this letter or the enclosure.

If there are any questions or if additional information is needed, please contact Ms. D.M. Wolfgramm, Regulatory Affairs Manager, at 509-377-4792.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 27th day of August, 2020.

Respectfully,

DocuSigned by:
Robert E. Schuetz
A0D08FB61898465...

R.E. Schuetz
Site Vice President

Enclosure: As stated

cc: NRC RIV Regional Administrator
NRC NRR Project Manager
NRC Senior Resident Inspector
NRC NRR Plant Licensing Branch Chief
CD Sonoda – BPA/1399
EFSECutc.wa.gov – EFSEC
E Fordham – WDOH
R Brice – WDOH
L Albin – WDOH

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION

Background

By letter dated August 20, 2020 (Agencywide Documents Access and Management System (ADAMS) Accession number ML20233A976), Energy Northwest (the licensee) requested a license amendment to revise the Columbia Generating Station Technical Specification (TS) 3.8.7, "Distribution Systems – Operating." This license amendment request (LAR) would add a one-time extension of the Completion Time (CT) of TS Action 3.8.7.A, from 8 hours to 16 hours, specifically associated with Division 2 Alternating Current (AC) electrical power distribution inoperability caused by inoperability of Division 2, 120/240V Power Panel E-PP-8AE during repairs on its supply transformer E-TR-8A/1. The NRC staff has reviewed the LAR and determined that additional information is required to complete the review. The NRC staff issued request for additional information (RAIs) on August 22, 2020. The NRC staff's additional RAIs are listed below. The staff may have additional RAIs. The staff held an RAI clarification call with Energy Northwest on August 26, 2020. The Energy Northwest staff requested, and NRC agreed, to a RAI response by August 27, 2020.

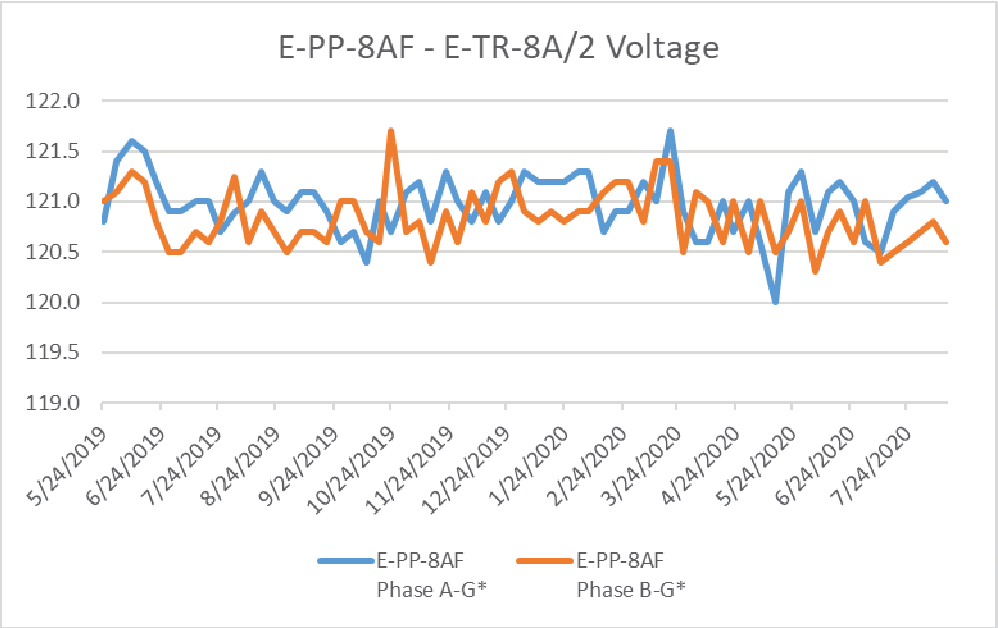
NRC RAI No. 6:

Based on review of responses to RAI No. 2 and 5, in order to provide confidence that the following three voltage regulating type distribution transformers (which are also nearing their end of life - approximate 10 years from the date of last installation) would not fail/degrade during the requested allowed outage time (AOT) extension, please provide voltage plots for the following power panels (similar to voltage plots for panels E-PP-8AE, E-PP-7AE provided in response to RAI No. 5 Question 1).

E-PP-8AF (E-TR-8A/2)
E-PP-7AA (E-TR-IN/3)
E-PP-8AA (E-TR-IN/2)

Energy Northwest Response to RAI No. 6:

TS Bases 3.8.7 AC Distribution Systems Operating notes that OPERABLE AC electrical power distribution subsystems require the associated buses to be energized to their proper voltages. The figure below plots data obtained from weekly voltage surveillance under TS Surveillance Requirement (SR) 3.8.7.1 for E-PP-8AF.



E-PP-7AA receives input voltage from two sources – normally from in-service redundant inverters E-IN-3A/3B, or from bypass source regulating transformer E-TR-IN/3. Similarly, E-PP-8AA receives input voltage from two sources – normally from in-service redundant inverters E-IN-2A/2B, or from bypass source regulating transformer E-TR-IN/2. The power panels E-PP-7AA and E-PP-8AA receive power via the static switch which monitors and transfers the load (i.e. the power panels) between the inverter and the bypass regulating transformer. Refer to drawing E504-1 in RAI 1 response in letter (ADAMS Accession Number ML20238A706).

Weekly voltage surveillance under TS SR 3.8.7.1 is done by the station for the power panels E-PP-7AA and E-PP-8AA. These readings represent inverter supplied voltage and not E-TR-IN/2 or E-TR-IN/3 supplied voltage. However, the static switch monitors the voltage from these transformers and provides an alarm. This alarm goes to the in-service inverter for “Alternate Source Undervoltage” light on the front of each inverter and provides a main control room trouble alarm input either “IN-2A/2B Trouble,” or “IN-3A/3B Trouble.” The alarm is set at 216 volts alternating current (VAC) which would indicate that E-TR-IN/2 or E-TR-IN/3 have a degraded output. The main control room trouble alarm prompts Operations to respond according to their alarm procedure for each inverter.

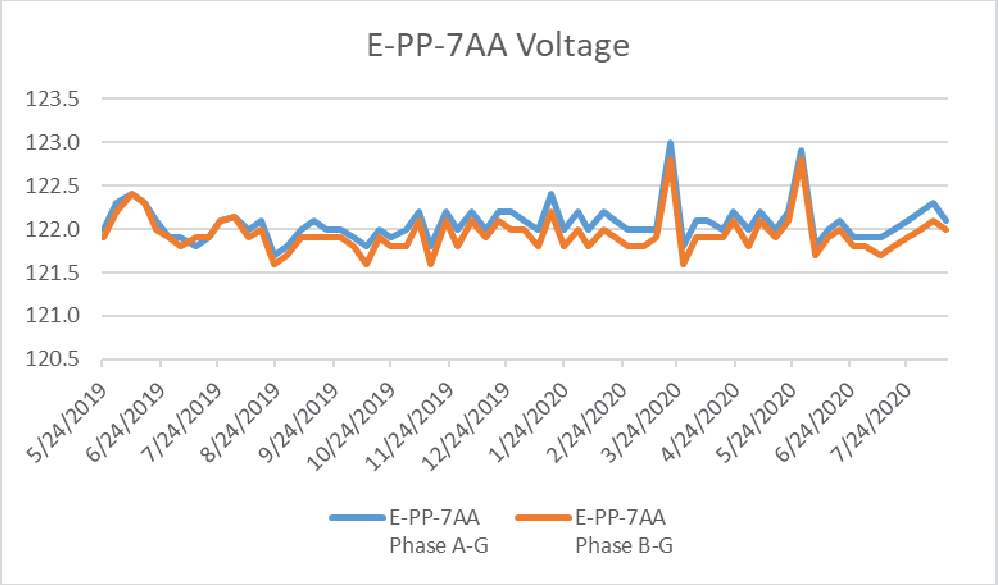
A condition report search was performed for the past two years which shows that these alarms have come in three times for “IN-3A/3B Trouble.” Although the alarm came in three times from the “Alternate Source Undervoltage” input alarm for E-IN-3A/3B, they were due to a switching transient and not due to a degraded transformer output.

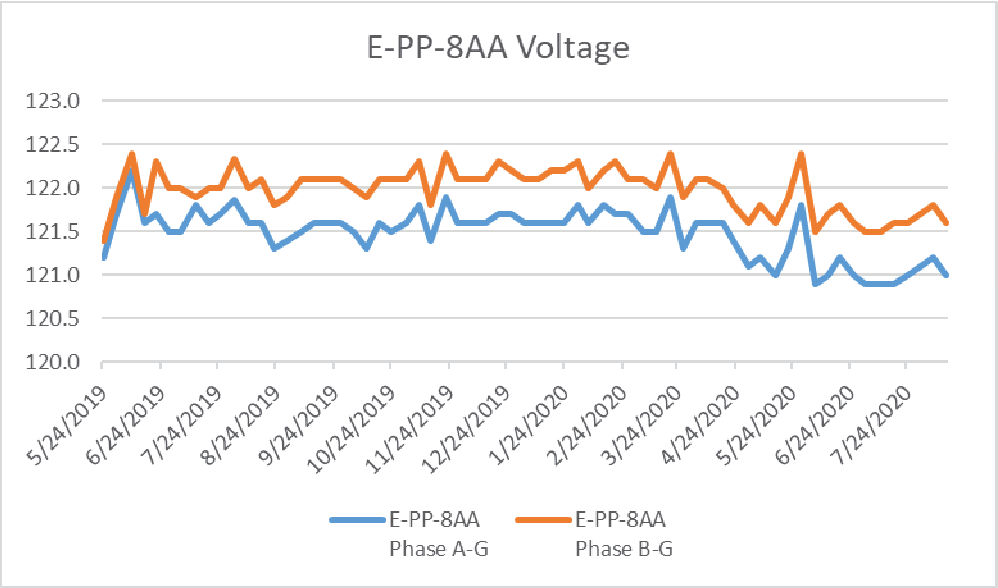
Similarly, a condition report search was performed for the past two years which shows that the alarm has come in once for “IN-2A/2B Trouble.” This alarm was due to a grid

hit that momentarily took the inverter and alternate source out of sync. The condition was corrected after the grid hit and it was not from a degradation of E-TR-IN/2.

The alternate source is used if there is a failure of the inverter to supply power to the vital instrument bus E-PP-7AA or E-PP-8AA, or for planned maintenance such as transferring loads between the inverters E-IN-2A and E-IN-2B, or between the inverters E-IN-3A and E-IN-3B. When the vital instrument bus is lined up to the alternate source (E-TR-IN/2 or E-TR-IN/3) an entry into TS 3.8.7.A is required until the bus is powered from the inverter.

The voltages that are shown on the following graphs for E-PP-7AA and E-PP-8AA are voltages that are taken with the inverter supplying the vital instrument busses which is the normal and preferred lineup.





Based on available data and the fact that these transformers are "current" per station PM strategy, there is no evidence to suggest these transformers would fail during the planned replacement of E-TR-8A/1.

NRC RAI No. 7:

Based on the voltage plot of panel E-PP-7AE (response to RAI No. 5 Question 1), the E-TR-7A/1 transformer also appears to be showing sign of degradation. Please describe that the plant can safely shutdown under the following scenario: Loss of offsite power (LOOP) and loss of transformer E-TR-7A/1 (Division 1) while transformer E-TR-8A/1 (Division 2) is under maintenance.

Energy Northwest Response to RAI No. 7:

As discussed in the original License submittal, power panel E-PP-8AE provides power to a range of plant equipment. Systems which are most impacted by de-energization of E-PP-8AE are the Standby Gas Treatment (SGT) System, Containment Instrument Air (CIA) System, Automatic Depressurization System (ADS), Reactor Building Heating Ventilation and Air Conditioning (RB HVAC), and Primary and Secondary Containment Isolation Valves (PCIVs/SCIVs).

Operational impact summary for de-energizing power panel E-PP-8AE:

SGT System

E-PP-8AE provides power to the SGT B standby electric strip heaters and some instrumentation. Loss of power to the SGT B instrumentation falsely results in some Main Control Room (MCR) annunciator actuation; e.g., differential pressure across

the carbon filter. The operating crew will still be able to determine that SGT B is operating correctly using MCR system flow and local differential pressure instrumentation. SGT B is capable of starting normally, both manually and automatically, and capable of fulfilling its safety function with the remaining heaters.

ADS

The operating crew will be able to operate all main steam relief valves (MSRVs) normally. The Division B ADS MSRVs will be able to perform their safety function.

CIA System

The normal nitrogen supply will isolate and all of the Division B backup nitrogen bottles will be placed in service simultaneously. The operating crew will be able to operate all MSRVs normally. The Division B ADS MSRVs will be able to perform their safety function. Following repairs to E-TR-8A/1 the operating crew will ensure that the Division B CIA nitrogen bottles have the required pressure.

Standby Liquid Control (SLC) System

There is no short term impact expected from the loss of heat trace.

RB HVAC System

SGT A will be placed in service to maintain Secondary Containment pressure negative. SGT A will be operable while it is in service.

Shutting down RB HVAC may cause the temperature in areas of the plant to rise. This may require securing systems prior to high temperature isolations occurring; e.g. Reactor Water Clean Up (RWCU). Following repairs to E-TR-8A/1 the operating crew will restore those systems to service.

PCIVs

The vast majority of these PCIVs are normally closed. The normally closed PCIVs will still fulfill their safety function when E-PP-8AE power is lost.

The exceptions are the suppression pool to reactor building vacuum relief isolation PCIVs. These valves fail open fulfilling their safety function to allow the suppression pool to reactor building vacuum relief valves to prevent excessive negative pressure in primary containment. Following repairs to E-TR-8A/1 the operating crew will ensure these valves close.

SCIVs

The valves close on loss of power fulfilling their safety function. There is no operational impact beyond isolating RB HVAC.

Power panel E-PP-7AE provides power to a range of plant equipment. Systems which are most impacted by de-energization of E-PP-7AE are the Control Room Emergency Filtration (CREF) System, Control Room Air Conditioning (AC), SGT System, CIA System, ADS, RB HVAC, and PCIVs/SCIVs.

Brief descriptions of these systems if not already described above and Operational impact summary for de-energizing power panel E-PP-7AE:

CREF System

The CREF system consists of two emergency filter units each with an emergency filter fan and a charcoal absorber carbon filter. The CREF system utilizes ground level remote fresh air intakes, the normal air intake is isolated. The CREF system operates in conjunction with the associated AC system.

E-PP-7AE provides power to CREF air dampers and instrumentation. The division 1 CREF subsystem will not perform its safety function when power is lost to E-PP-7AE.

Control Room Air Conditioning (AC) System

The AC system consists of two subsystems each with one fan and two coolers; one supplied by service water, and one supplied by control room emergency chilled water system.

E-PP-7AE supplies power to the Division 1 temperature control valves of the AC system. The division 1 AC system will not provide control room cooling when power is lost to E-PP-7AE.

SGT System

E-PP-7AE provides power to the SGT A standby electric strip heaters and some instrumentation. Loss of power to the SGT A instrumentation falsely results in some Main Control Room (MCR) annunciator actuation; e.g., differential pressure across the carbon filter. The operating crew will still be able to determine that SGT A is operating correctly using MCR system flow and local differential pressure instrumentation. SGT A is capable of starting normally, both manually and automatically, and capable of fulfilling its safety function with the remaining heaters.

ADS

The operating crew will be able to operate all MSRVs normally. The Division A ADS MSRVs will be able to perform their safety function.

CIA System

E-PP-7AE provides power to several valves and the nitrogen bottle programmer in the CIA system. These components are related to both the normal and backup supply of nitrogen to the Division A ADS MSRVs. When E-PP-7AE is de-energized the normal nitrogen supply will isolate and all of the Division A nitrogen bottles will be placed in service simultaneously. The Division A ADS MSRVs will be able to perform their safety function.

RB HVAC System

E-PP-7AE provides power to components in both the intake and exhaust pathways of the RB HVAC system. When E-PP-7AE is de-energized the RB HVAC system will isolate.

Shutting down RB HVAC may cause the temperature in areas of the plant to rise. This may require securing systems prior to high temperature isolations occurring; e.g., Reactor Water Clean Up (RWCU).

PCIVs

E-PP-7AE provides power to the PCIVs in several systems. The vast majority of these PCIVs are normally closed. The normally closed PCIVs will fulfill their safety function when E-PP-7AE power is lost.

SCIVs

The valves close on loss of power fulfilling their safety function. There is no operational impact.

If we lose E-PP-7AE while performing maintenance on E-PP-8AE, we would require entry into TS limiting condition for operation (LCO) 3.0.3 and require the plant to be in mode 4 within 37 hours. The loss of both E-PP-7AE and 8AE will not prevent the plant from safely shutting down, removing decay heat, or achieving and maintaining cold shutdown using normal operating procedures.

Operational impact summary of de-energizing both E-PP-7AE and E-PP-8AE:

CREF System

E-PP-7AE provides power to CREF air dampers and instrumentation. The division 1 CREF subsystem will not perform its safety function when power is lost to E-PP-7AE. The division 2 CREF will perform its safety function even with power lost to E-PP-8AE since division 2 is not powered from E-PP-8AE.

Control Room Air Conditioning (AC) System

E-PP-7AE supplies power to the Division 1 temperature control valves of the AC system. The division 1 AC system will not provide control room cooling when power is lost to E-PP-7AE. The division 2 AC system will provide control room cooling even with power lost to E-PP-8AE since division 2 is not powered from E-PP-8AE.

SGT System

Both SGT A and B are capable of starting normally, both manually and automatically, and capable of fulfilling its safety function with the remaining heaters. However, the moisture alarms and instrumentation will be de-energized.

ADS

The operating crew will be able to operate all MSRVs normally. All ADS MSRVs will be able to perform their safety function.

CIA System

The normal nitrogen supply will isolate and all of the Division A and B backup nitrogen bottles will be placed in service simultaneously. The operating crew will be able to operate all MSRVs normally. The Division A and B ADS MSRVs will be able to perform their safety function.

SLC System

There is no short term impact expected from the loss of heat trace.

RB HVAC System

One train of SGT will be placed in service to maintain Secondary Containment pressure negative. SGT will be operable while it is in service.

Shutting down RB HVAC may cause the temperature in areas of the plant to rise. This may require securing systems prior to high temperature isolations occurring; e.g. Reactor Water Clean Up (RWCU).

PCIVs

The vast majority of these PCIVs are normally closed. The normally closed PCIVs will still fulfill their safety function when E-PP-7AE and E-PP-8AE power is lost.

The exceptions are the suppression pool to reactor building vacuum relief isolation PCIVs. These valves fail open fulfilling their safety function to allow the suppression pool to reactor building vacuum relief valves to prevent excessive negative pressure in primary containment.

SCIVs

The valves close on loss of power fulfilling their safety function. There is no operational impact beyond isolating RB HVAC.

The loss of offsite power combined with the loss of E-PP-7AE while E-PP- 8AE maintenance is being performed will not prevent the plant from safely shutting down, removing decay heat, or achieving and maintaining cold shutdown since the onsite diesel generators will provide power to the necessary equipment with existing procedures.