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SUBJECT: Application for amend to license NPF-21,revising TS Table 3.3.5.1-1, "ECCS Instrumentation Items 1.a,2.a,4.a & 5.a."

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM
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July 29, 1999
GO2-99-143

Docket No. 50-397

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21**
REQUEST FOR AMENDMENT
TECHNICAL SPECIFICATION 3.3.5.1
EMERGENCY CORE COOLING SYSTEM (ECCS)
INSTRUMENTATION

References:
1) NRC Administrative Letter 98-10, dated December 29, 1998, "Dispositioning of Technical Specifications that are Insufficient to Assure Plant Safety"

2) Letter dated November 6, 1998, TF Stetka (NRC) to JV Parrish (SS), "NRC Inspection Report 50-397/98-15 and Notice of Violation"

3) Letter GO2-98-205, dated December 7, 1998, RL Webring (SS) to NRC, "NRC Inspection Report 98-15, Response to Notice of Violation"

In accordance with the Code of Federal Regulations, Title 10, Parts 2.101, 50.59 and 50.90, the Washington Public Power Supply System (Supply System) hereby submits a request for amendment to the WNP-2 Operating License. Specifically, the Supply System is requesting a revision to Technical Specification Table 3.3.5.1-1, "Emergency Core Cooling System (ECCS) Instrumentation Items 1.a, 2.a, 4.a and 5.a." This amendment requests that the Reactor Vessel Water Level - Low Low Low, Level 1 Allowable Value be changed from the current value of -148 inches to a new value of -142.3 inches.

A001 1/1

The purpose of the ECCS, Level 1, Reactor Vessel Water Level Trip function is to provide automatic initiation of the ECCS systems. This trip function initiates the Low Pressure Core Spray (LPCS) System, Low Pressure Coolant Injection (LPCI) subsystem, and the Automatic Depressurization System (ADS). These systems ensure that the reactor fuel is adequately cooled in the event of a design basis accident. This function is shown on Technical Specification Table 3.3.5.1-1, "Emergency Core Cooling System Instrumentation, Items 1.a, 2.a, 4.a and 5.a." Low Reactor Pressure Vessel (RPV) water level indicates that the capability to cool the fuel may be threatened. Should RPV water level decrease too far, fuel damage could result. The Reactor Vessel Water Level - Low Low Low, Level 1 trip is one of the functions assumed to be capable of initiating the ECCS during the transients analyzed in FSAR Chapter 15, "Accident Analyses." In addition, the Reactor Vessel Water Level - Low Low Low Level 1 function is directly assumed in the analysis of the recirculation line pipe break analyzed in FSAR Section 6.3, "Emergency Core Cooling Systems."

Equipment required to support this safety function is described in FSAR Chapter 7, "Instrumentation and Control Systems" and Section 7.3, "Engineered Safety Feature Systems." Reactor Vessel Water Level - Low Low Low, Level 1 signals are initiated from four differential pressure level indicating switches that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. The Reactor Vessel Water Level - Low Low Low, Level 1 Allowable Value is chosen to allow time for the low pressure core flooding systems to activate and provide adequate cooling. Level indicating switches MS-LIS-37A, MS-LIS-37B, MS-LIS-37C, and MS-LIS-37D measure the RPV water level. Level switches MS-LIS-37A and MS-LIS-37C provide signals to the Division 1 ECCS logic circuits; LPCS and ADS Trip System A. Level switches MS-LIS-37B and MS-LIS-37D provide signals to the Division 2 ECCS logic circuits; LPCI (Loops B and C), and ADS Trip System B.

The Reference 2 inspection identified that level indicating switches MS-LIS-37A, MS-LIS-37B, MS-LIS-37C, and MS-LIS-37D were located in a harsh environment. However, the uncertainties associated with the harsh environment were not included in the instrument loop setpoint analysis associated with these instruments. Harsh environmental conditions are described in FSAR Section 3.11, "Environmental Design of Mechanical and Electrical Equipment." Level indicating switches MS-LIS-37A, MS-LIS-37B, MS-LIS-37C, and MS-LIS-37D are located on instrument racks in the Reactor Building (Secondary Containment) at elevation 522. At this location they are subject to the harsh environmental conditions of high temperature, humidity, and radiation as stated in the environmental qualification report. The component classification evaluation record for these Level 1 indicating switches states these switches are required to change state for 4,320 hours while subject to harsh environment conditions. However, the associated setpoint calculation for these instruments did not account for harsh environment.

It should be noted that these harsh environmental conditions build up over time due to loss of coolant accident conditions within the Primary Containment. This harsh environment would have no impact on the initial trip needed to initiate the ECCS on loss of RPV level since conditions in the Reactor Building would be benign at the initial stages of the accident. Only if the Level 1 trip was reset and initiated after a significant period of time would the harsh environmental conditions have an impact on the accuracy in the level indicating switches.

The setpoint calculation has been revised and the additional uncertainty introduced because of harsh environmental effects could not be accommodated between the existing Technical Specification allowable value and the analytical limit. Therefore, it is proposed that the Technical Specification allowable value for Reactor Vessel Water Level - Low Low Low, Level 1 be raised from -148 inches reactor vessel water level to -142.3 inches reactor vessel water level to account for the harsh environmental condition on the instruments.

As stated in Reference 3, administrative controls are in place to assure that the allowable value for Reactor Vessel Water Level - Low Low Low, Level 1 is not exceeded. A review of past settings for these instruments showed that the settings have always been within the newly calculated value of -142.3 inches. This change is consistent with the Reference 1 NRC Administrative Letter that requires action to correct the Technical Specifications to resolve degraded or nonconforming conditions.

Additional information has been attached to this letter to complete the amendment request. Attachment 1 describes an evaluation of the proposed changes in accordance with 10CFR50.92 and concludes they do not result in a significant hazards consideration. Attachment 2 provides the Environmental Assessment Applicability Review and notes that the proposed change meets the eligibility criteria for a categorical exclusion as set forth in 10CFR51.22. Therefore, in accordance with 10CFR51.22, an environmental assessment of the change is not required. Attachment 3 provides marked up pages of the Technical Specification. Attachment 4 consists of the typed Technical Specification pages as proposed by this amendment.

This request for an amendment has been approved by the WNP-2 Plant Operations Committee and reviewed by the Supply System Corporate Nuclear Safety Review Board. In accordance with 10CFR50.91, the state of Washington has been provided a copy of this letter.

Should you have any questions or desire additional information regarding this matter, please contact me or PJ Inserra at (509) 377-4147.

Respectfully,

RL Webring
Vice President, Operations Support/PIO
Mail Drop PE08

Attachments

cc: EW Merschoff - NRC RIV
JS Cushing - NRC NRR
NRC Senior Resident Inspector - 927N
PD Robinson - Winston & Strawn
DL Williams - BPA/1399
DJ Ross – EFSEC

STATE OF WASHINGTON)
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COUNTY OF BENTON)

Subject: Operating License NPF-21
Request for Amendment
Technical Specification 3.3.5.1
Emergency Core Cooling System
(ECCS) Instrumentation

I, RL Webring, being duly sworn, subscribe to and say that I am the Vice President, Operations Support/PIO, for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief that the statements made in it are true.

DATE 7/29/ 1999

RL Webring
Vice President, Operations Support/PIO

On this date personally appeared before me RL Webring, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

GIVEN under my hand and seal this 29 day of July 1999

Notary Public in and for the
STATE OF WASHINGTON

Residing at W. Richland

My Commission expires 3-29-01


STATE OF WASHINGTON
NOTARY
PUBLIC

Evaluation of Significant Hazards Considerations

Summary of Proposed Change

The Washington Public Power Supply System is requesting a revision to Technical Specification Table 3.3.5.1-1, "Emergency Core Cooling System (ECCS) Instrumentation." This amendment requests that the Reactor Vessel Water Level - Low Low Low, Level 1 Allowable Value be raised from the current -148 inches to a new value of -142.3 inches.

The purpose of the ECCS Level 1 Reactor Vessel Water Level trip is to provide automatic initiation of ECCS. This trip function is used for initiation of the Low Pressure Core Spray (LPCS) System, Low Pressure Coolant Injection (LPCI) subsystem, and the Automatic Depressurization System (ADS). These systems ensure that the reactor fuel is adequately cooled in the event of a design basis accident.

Reactor Vessel Water Level - Low Low Low, Level 1 signals are initiated from four differential pressure level indicating switches that sense the difference between the pressure due to a constant column of water (reference leg) and the pressure due to the actual water level (variable leg) in the vessel. These switches are located in the Reactor Building.

It has been identified that level indicating switches that measure Reactor Vessel Water Level - Low Low Low, Level 1 were located in a harsh environment where high temperature, humidity, and radiation can affect the accuracy of the instruments. It was determined that the uncertainties associated with a harsh environment were not included in the instrument loop setpoint analysis associated with these instruments. The additional uncertainty introduced because of harsh environmental impacts could not be accommodated between the existing Technical Specification allowable value and the analytic limit. Therefore, it is proposed that the Technical Specification allowable value for Reactor Vessel Water Level - Low Low Low, Level 1 be changed to account for the environmental impacts on the associated instrumentation.

No Significant Hazards Consideration Determination

The Washington Public Power Supply System has evaluated the proposed change to the Technical Specifications using the criteria established in 10CFR50.92(c) and has determined that it does not represent a significant hazards consideration as described below:

The operation of WNP-2 in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

This change involves the measurement of water level in the Reactor Pressure Vessel (RPV) used to initiate the ECCS. The accident evaluated for this condition is the spectrum of loss of coolant accidents (LOCA) severe enough to decrease the RPV water inventory by a significant amount.

The additional uncertainty introduced because of harsh environmental effects could not be accommodated between the existing Technical Specification allowable value and the analytical limit. This uncertainty results in a requirement that the ECCS be initiated at a slightly higher water level than previously calculated. Therefore, operation of WNP-2 in accordance with the proposed amendment will not involve a significant increase in the probability or consequences of an accident previously evaluated.

The operation of WNP-2 in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change will not create a new or different kind of accident since it only makes a small change in the RPV water level at which the ECCS is initiated. This change is in the conservative direction requiring a greater volume of water in the RPV to accommodate the uncertainty associated with the harsh environment of the water level sensors.

The level indicating switches are located on instrument racks in the Reactor Building. The harsh environment in this building would have no impact on the initial trip needed to initiate the ECCS on loss of RPV level since conditions in the Reactor Building would be benign at the initial stages of the accident. Only if the Level 1 trip was reset and initiated after a significant period of time would the harsh environmental conditions have an impact on the accuracy of the level indicating switches. However, increasing the water level at which the ECCS is initiated results in a more conservative value that adequately includes post-accident harsh environment uncertainties and ensures that the associated analytical limit is met.

Therefore, the operation of WNP-2 in accordance with the proposed amendment will not create the possibility of a new or different kind of accident from any accident previously evaluated.

The operation of WNP-2 in accordance with the proposed amendment will not involve a significant reduction in the margin of safety.

The proposed amendment increases the allowable value for water level in the RPV. This small increase will result in an increase in the margin of safety. A review of the plant settings for the Level 1 trip indicated that previous settings were within the new allowable value.

Therefore, operation of WNP-2 in accordance with the proposed amendment will not involve a significant reduction in the margin of safety.

Environmental Assessment Applicability Review

The Washington Public Power Supply System has evaluated the proposed amendment against the criteria for identification of licensing and regulatory actions requiring environmental assessment in accordance with 10CFR51.21.

The proposed change meets the criteria for categorical exclusion as provided for in 10CFR51.22(c)(9). The change requested does not pose a significant hazards consideration nor does it involve an increase in the amounts, or a change in the types, of any effluent that may be released off-site.

Furthermore, this proposed request does not involve an increase in individual or cumulative occupational exposure.