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SUBJECT: Application for amend to license NPF-21, requesting TS to
 reflect revised design calculations for LOP emergency bus
 undervoltage loss of voltage & degraded voltage trips, time
 delay setpoints & allowable values.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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October 6, 1993
G02-93-244

Docket No. 50-397

U.S. Nuclear Regulatory Commission
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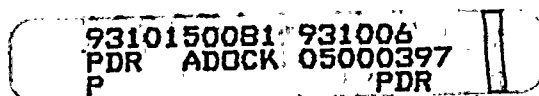
Gentlemen:

Subject: **NUCLEAR PLANT NO. 2; OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION
3/4.3.3 EMERGENCY CORE COOLING SYSTEM (ECCS) ACTUATION
INSTRUMENTATION, DEGRADED VOLTAGE PROTECTION, REVISED
REQUEST**

Reference: Letter GO2-92-209, dated September 2, 1992, GC Sorensen (SS) to NRC, same
subject

The reference requested an amendment to the ECCS Actuation Instrumentation Technical Specifications to reflect revised design calculations for the Loss of Power (LOP) Emergency Bus Undervoltage Loss of Voltage and Degraded Voltage Trips, Time Delay Setpoints, and Allowable Values. Also proposed were changes to the associated Action Statements. Subsequent to this request, the staff issued NUREGs 1433 and 1434, the BWR 4 and 6 Improved Standard Technical Specifications (ITS). The Supply System has reviewed these NUREGs, with respect to the LOP Specification, and concluded that they are clearer and more easily understood than the change requested in the reference.

Accordingly, it is requested that the WNP-2 ECCS LOP specification be changed as attached to be the same in content as the ITS (NUREGs 1433 and 1434). As provided for in SECY-93-067, "Final Policy Statement on Technical Specifications Improvements" the Supply System is requesting that this proposed change be considered as a line item improvement to the WNP-2 Technical Specifications. Accordingly, this change adopts the ITS content of the NUREGs for LOP Instrumentation. The ITS provides a separate specification for LOP Instrumentation. The



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present WNP-2 specification has the LOP instrumentation as part of the ECCS Actuation Instrumentation specification. For consistency with the present Technical Specifications, this request leaves the LOP Instrumentation in the ECCS Actuation Instrumentation Specification. The format of the requested change remains the same as that of the present WNP-2 specifications, however the information provided in the present specifications that is not in the ITS has been removed, including the plant design information provided in footnote ## on page 3/4 3-32. The removed information is in the WNP-2 FSAR and plant procedures and provides no additional benefit to plant operation by being duplicated in the specification. The allowable values in the attached have been revised from those requested in the referenced submittal, and Loss of Voltage Allowable Values are now the same for all three divisions. The required action for inoperable channels has been changed to conform with that provided in the ITS. Because the ITS LOP does not list Trip Setpoints, only Allowable Values are retained in this request. The reference proposed changes to the listing of values in Table 3.3.3-2 to make it more easily read and understood. This alignment is retained in the attached change.

As described in the reference, the LOP degraded voltage instrumentation acts to protect Class 1E equipment from the adverse effects caused from sustained operation under low voltage conditions. Prolonged operation at a reduced voltage condition could adversely effect the Class 1E electric motors and devices required for adequate operation of the ECCS. Accordingly, a trip set at a minimum steady state voltage limit on the electrical distribution system actuates a time delay relay on decreasing voltage. If grid voltage does not recover to a reset (pickup) value before the time delay times out, the source breakers to the effected bus are tripped. Power is restored automatically from the offsite backup 115 kV source, if it is available, or the emergency diesel generators (DGs) restore power to the Class 1E loads on the affected bus.

A loss of voltage indicates that normal offsite power may be completely lost to the respective emergency bus and sufficient power is not available for proper operation of emergency equipment. When the voltage on the bus drops below a minimum value, the power supply to the bus is transferred from the normal offsite source to the backup source if it is available. If the backup offsite source is not available, the power supply transfers to DG power. Proper operation of these trips ensures the initiation of the DGs, subsequent start of ECCS equipment, and assurance that fuel peak cladding temperature remains below the limits of 10 CFR 50.46.

In summary, the emergency bus LOP trip setpoints and time delays contribute to DG starting, emergency bus load shedding, and DG loading logic. As such, proper operation is essential to the operability of the ECCS. The design calculation for the maximum and minimum allowable values for voltage and time delay setpoints was changed to apply setpoint methodology guidance (as provided by ISA RP 67.04) to account for the device uncertainties and drift. The revision of the design calculation resulted in the change requested in the reference. However, as a line item improvement, the appropriate sections of the specifications are changed in this request to agree with the content of the ITS (NUREGs 1433 and 1434).

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The present Action Statements 37 and 38 have been combined to one Action Statement (37). As proposed, with one or more channels of a function inoperable, the function is not capable of performing. Therefore, only one hour is allowed to restore the inoperable channel to OPERABLE status. If the inoperable channel cannot be restored to OPERABLE status within the allowable out of service time, the channel must be placed in the tripped condition or the associated DG must be declared inoperable and the Action Statement for the inoperable DG entered. Placing the inoperable channel in trip would conservatively compensate for the inoperability, restore capability to respond to a single failure that could cause a LOP and allow operation to continue. Alternately, if it is not desired to place the channel in trip (e.g., as in the case where placing the channel in trip would result in a DG initiation), the action statement for the inoperability of the associated DG is to be entered. A one hour out of service time is considered adequate to allow the operator time to evaluate and repair any discovered inoperabilities. One hour is acceptable because it minimizes risk while allowing time for restoration or tripping of channels. Because placing the channel in trip is the action that would occur on a legitimate trip and restores the ability of the instrumentation to respond a note has been added to Action Statement 37 to allow separate entries for each inoperable instrument. This Action Statement agrees with the intent of that imposed by the ITS.

The revised Action Statement 37 does not require declaring the associated DG inoperable or impose the Action required by Specification 3.8.1.1 or 3.8.1.2 (DG operation and plant shutdown within 72 hours), with one channel inoperable, as does the present 37. On failure of two channels entry into the DG inoperable specification is required and in this way the Action Statements are the same. With one channel inoperable placing the instrument in trip assures that the safety function of the instrument is enabled. A legitimate trip signal will cause the safety function to be initiated. It does expose the plant to a trip given a spurious signal on the operable channel but a trip is an analyzed event within the design bases of the plant. This exposure is considered acceptable with the recognition that the channel is put in trip 23 hours sooner than the present Action requires and a legitimate signal during this 23 hour difference will cause the safety function to be realized. The present Specification has a 24 hour interval in which no action is taken and the safety function will not occur under the same conditions. Given that the safety function is enabled by placing the inoperable channel in trip, and protection is still provided by the remaining channel(s), requiring entry into the associated DG inoperable Action Statement is overly conservative. With the safety function assured entry into the DG inoperable Action Statement is not appropriate because the trip is still operable and the plant will still respond as designed and analyzed in the safety analysis on a LOP.

For a given division by leaving the channel in trip and relying on the alternate channel to provide the safety system actuation some exposure exists to the alternate channel failing and not providing a trip signal on a real LOP. However, the risk of a legitimate degraded voltage condition occurring and not causing a trip (single failure) is acceptable due to the redundant division being available to meet design bases accident requirements under the single failure criteria. Further, any shutdown has a certain degree of associated risk. The expedited

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shutdown under the DG inoperable specification is not necessary given that the operable channel can still provide a trip and the redundant division is available. The slightly greater exposure to failure to trip while in Action 37 is offset by avoidance of the risk inherent in the presently required shutdown and by recognition that the redundant division remains functional.

The changes in the table layout proposed for Table 3.3.3-2 are editorial and do not impact the technical requirements of the table. They provide clarification and make the table more user friendly. The changes clearly show the values for each division, where the previous table could foster confusion in following division values from the column under "D. LOSS OF POWER" to "TRIP SETPOINT" and "ALLOWABLE VALUE". Presently divisions 1 and 2 are subheaded "a." and two Trip Setpoints are also subheaded "a.". The proposed clarification to this table removes this potential confusion. Additionally, in conforming to the NUREGs trip setpoint values are removed. These values are maintained in controlled documents, both plant procedures and design calculations. Trip setpoints are an integral part of the plant specific implementation of Channel Functional Tests and Channel Calibrations including applicable setpoint methodology that assures the Allowable Values are not exceeded. The Allowable Values are an integral part of the OPERABILITY of an instrumentation channel and the channel must be declared inoperable if the Allowable Value is not met. As such, there is no additional benefit gained by including trip setpoints in the Technical Specifications. Removal of trip setpoints is an accepted practice in the ITS for LOP instrumentation. Further, the footnote ## at the bottom of page 3/4 3-32 is deleted. This information is also design information that does not contribute towards, or benefit safe operation of the plant.

A footnote "e", similar in intent to that provided in the ITS, has been added to the bottom of page 3/4 3-28 to allow a channel to be in an inoperable status for 2 hours to perform surveillance requirements. This is necessary to allow concurrent compliance with both the Surveillance Requirements and Action Statements. The allowance provides adequate time to perform the Surveillance and cannot be used unless all channels of one of the two functions (Loss of Voltage or Degraded Voltage) are OPERABLE or in trip. This ensures the LOP function is OPERABLE during the performance of the Surveillance Requirements. The purpose of this allowance is to allow performance of Surveillance Requirements required to demonstrate OPERABILITY, which otherwise could not be performed because of the requirement of the associated ACTIONS. The performance of these Surveillance Requirements render the equipment inoperable and the Required Actions would prevent the performance of the Surveillance or would require entry into Limiting Condition for Operability 3.0.3. This 2 hour allowance is deemed appropriate in view of the desirability of demonstrated OPERABILITY compared to the expected minimal risk of an event requiring operation of the inoperable equipment during Surveillance testing.

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With respect to the proposed changes to the Allowable Values (voltages and time delay) the Supply System has evaluated these changes per 10 CFR 50.92 and determined that they do not represent a significant hazards consideration because they do not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The revised calculation demonstrates that adherence to the proposed values preserves the original design requirements of the electrical distribution system. These values will ensure that the emergency bus LOP trips will operate, trip, reset, and time out as required by the original design. Therefore, because the original design is satisfied by these changes, no change in the probability or consequences of a previously evaluated accident is credible.
- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes in emergency bus LOP Allowable Values (voltages and time delay) do not create the possibility of a new or different kind of accident from any previously evaluated because they do not represent a change in modes of plant operation or require physical modifications. The change preserves the original electrical distribution system design requirements. Hence, no new or different kind of accident is possible as a result of implementing these changes.
- 3) Involve a significant reduction in a margin of safety. The changes in emergency bus LOP Allowable Values (voltages and time delay) do not affect a margin of safety because the values preserve the original electrical distribution system design requirements. Therefore, no margin of safety is impacted by this change.

With respect to the change in allowed outage time invoked in Action Statement 37 the Supply System has evaluated this change per 10 CFR 50.92 and determined that it does not represent a significant hazards consideration because it does not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The revised Action Statement (combining 37 and 38) is more stringent than the present Action Statements because action is taken in one hour instead of 24 hours. It allows one hour before either tripping the inoperable instrument and/or declaring the associated DG inoperable. The imposition of a more stringent timeframe will not alter in any way the consequences of a previously evaluated accident. The probability of a previously evaluated accident occurring is not significantly affected by this change because the action taken is conservative, the instrument is placed in trip. As presently allowed, 24 hours may be taken before entering Action Statements 37 and 38. During this timeframe a legitimate trip signal in a trip logic having an inoperable channel would

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not actuate the trip. By reducing this timeframe, the probability that a legitimate safety related trip (during the 23 hour time difference) will not occur, given an actual trip signal on another instrument in the same logic, is reduced. Hence, the probability of not receiving a legitimate trip is reduced.

Placing the inoperable channel in trip sooner does expose the plant to a trip should a spurious signal be received in the same trip logic. However the probability of this event is offset by reducing the present technical specification probability that a legitimate trip signal could be received during the 23-hour difference and the trip not occur. A trip is an analyzed event, with acceptable consequences. The lack of a trip given a legitimate trip signal during the 23 hour difference is not an accepted event. Hence the increased exposure to a spurious trip is considered acceptable compared to not tripping given a legitimate trip signal. Hence the probability or consequences of an accident previously evaluated is not significantly increased by entry into action sooner with revised Action Statement 37.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated. The imposition of a more stringent timeframe for commencing action will not result in a new or different kind of accident than those previously evaluated because the only possible action that could occur over the timeframe is an actual LOP. The LOP is an analyzed event. The potential that the alternate channel could fail and not provide a trip signal has not changed over the present specification. The present timeframe before action is commenced is longer than the requested one hour therefore decreasing the time before action is taken does not create the possibility of a new or different kind of accident from any previously evaluated accident over that presently accounted for.
- 3) Involve a significant reduction in a margin of safety. The imposition of a more stringent timeframe in which to commence action decreases the time in which the plant is vulnerable to having an actual LOP without the designed protective action being enabled. Hence, a shorter allowed outage time before compensatory action is commenced does not involve a significant reduction in a margin of safety but enhances the present margin.

With respect to the change in action taken in new Action Statement 37 (entering an action statement for an inoperable DG is not required) the Supply System has evaluated this change per 10 CFR 50.92 and determined that it does not represent a significant hazards consideration because it does not:

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- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated. The revised Action Statement (combining 37 and 38) does not require entering an action for an inoperable DG with one LOP channel inoperable. Because the change in action does not inhibit the safety function required in the event of a LOP, the consequences of an accident requiring ECCS actuation are not affected.

The probability that a LOP might occur because of the change in Action Statements is not affected because the system responds to events and cannot initiate a LOP.

The probability that a LOP might occur and not cause the ECCS actuation is slightly increased while in Action Statement 37. If a failure of an alternate channel (not the channel requiring entry into the Action Statement) occurred at the same time as a LOP the ECCS actuation might not occur. The probability of a failure in the alternate channel and a legitimate LOP is considered insignificant. This same event could occur during the extended time (96 hours) in the present specifications before plant shutdown is commenced. As such, in considering that repair work would have a high probability of being successful in a 96 hour timeframe thereby allowing exit from the Action Statement, the duration of exposure to this event in the revised Statement 37, in which the same repair effort would be mounted, is not significantly different from the duration in which the same event could occur over 96 hours in the present specification.

On failure of two channels entry into the DG inoperable specification is required and in this way the Action Statements are the same and Action Statement 37 will not result in any different probabilities or consequences. Hence, the probability of a previously evaluated accident is not significantly increased by this change.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated because the instrumentation is mitigative and cannot initiate an accident. Actuation would cause a LOP which is an analyzed event. The instrumentation responds to accident conditions and cannot by itself be a precursor to a new or different kind of accident from any accident previously evaluated. Therefore no new accident is credible.
- 3) Involve a significant reduction in a margin of safety. Because the revised Action Statement for loss of a channel places the channel in the most conservative position for the channel, tripped, in a short timeframe compared to the present specification the margin of safety intended by the specification is preserved. It avoids requiring a plant shutdown and the inherent risk therein and provides adequate time to return the channel to service, yet provides protection against a LOP. For these reasons the change does not represent a significant reduction to the margin of safety associated with the present Action Statements.

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With respect to the addition of note "e" allowing a 2 hour delay before entering the Action Statements while performing surveillance testing, the Supply System has evaluated this change per 10 CFR 50.92 and determined that it does not represent a significant hazards consideration because it does not:

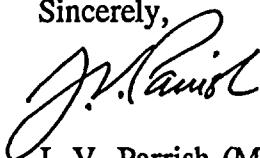
- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated. This change does not result in any hardware or operating procedure changes. The LOP instrumentation is not assumed to be an initiator of any analyzed event. The LOP instrumentation limits the consequences of a design basis accident. LOP instrumentation actuates to assure AC power availability to ECCS equipment. The proposed change will not allow continuous operation such that a single failure will preclude initiation of the DGs on a LOP. This change allows performance of Surveillance Requirements required to demonstrate OPERABILITY, which otherwise could not be performed because of the requirements of the associated Action Statements. Additionally, the consequences of an event occurring with the LOP instrumentation inoperable in accordance with note "e" is the same as the consequences of an event occurring with LOP instrumentation inoperable for the current allowable outage time. Therefore, the proposed change will not involve a significant increase in the probability or consequences of an accident previously evaluated.
- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated because operation under the footnote does not introduce a new mode of plant operation nor does it require physical modification of the plant. The footnote is only entered if the associated function maintains DG initiation capability. For these reasons the possibility of a new or different kind of accident is not created by the use of the footnote.
- 3) Involve a significant reduction in a margin of safety. The time allowed under footnote "e" for the LOP instrumentation to be inoperable for the performance of Surveillance Requirements is acceptable based on the small probability of an event requiring the inoperable LOP instrumentation to actuate and the desire to minimize plant transients. Footnote "e" will provide sufficient time to perform Surveillances in an orderly manner. As a result, the potential for human error during testing will be reduced. As such, any reduction in a margin of safety will be insignificant and offset by the benefit gained from the performance of Surveillances necessary to assure equipment OPERABILITY and the avoidance of an unnecessary plant transient.

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As discussed above, the Supply System concludes that these changes do not involve a significant hazards consideration, nor is there a potential for significant change in the types or significant increase in the amount of any effluents that may be released offsite, nor does the change involve a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(C)(9) and therefore, per 10 CFR 51.22(b), an environmental assessment of these changes is not required.

This Technical Specification change request has been reviewed and approved by the WNP-2 Plant Operations Committee and the Supply System Corporate Nuclear Safety Review Board. In accordance with 10 CFR 50.91, the State of Washington has been provided a copy of this letter.

Sincerely,



J. V. Parrish (Mail Drop 1023)
Assistant Managing Director, Operations

PLP/bk
Attachments

cc: BH Faulkenberry - NRC RV
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A
W Bishop - EFSEC



2700

STATE OF WASHINGTON)
)

Subject: Request for Amend to TS 3/4.3.3
ECCS Actuation Instrumentation

COUNTY OF BENTON)

I, J. V. PARRISH, being duly sworn, subscribe to and say that I am the Assistant Managing Director, Operations 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 the statements made in it are true.

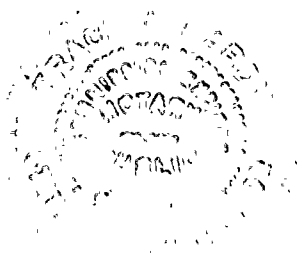
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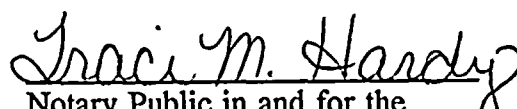


J. V. Parrish, Assistant Managing Director
Operations

On this date personally appeared before me J. V. PARRISH, 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 5th day of October, 1993.





Notary Public in and for the
STATE OF WASHINGTON

Residing at Kennewick, WA

My Commission Expires 8/9/95

