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SUBJECT: Application for amend to License NPF-21, changing TS Table 3.6.3-1 re primary containment isolation valve requirements.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352-0968 • (509) 372-5000

September 18, 1994
GO2-94-216

Docket No. 50-397

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

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NPF-21 REQUEST FOR AMENDMENT TO THE WNP-2 TECHNICAL SPECIFICATIONS UNDER EMERGENCY CIRCUMSTANCES WITH REGARD TO PRIMARY CONTAINMENT ISOLATION VALVE REQUIREMENTS

Reference: Letter GO2-94-215, dated September 16, 1994, JV Parrish (SS) to NRC, "Discretionary Enforcement"

In accordance with the provisions of the Code of Federal Regulations, Title 10, Parts 50.90, 2.101, and 50.91(a)(5), the Supply System requests amendment to the WNP-2 Technical Specifications on an emergency basis. Specifically, the Supply System requests a change to Table 3.6.3-1, "Primary Containment Isolation Valves," to allow operation of WNP-2 until the next shutdown, but no later than May 15, 1995, with the single failure criterion not met for the logic for the containment isolation valves in the hydraulic lines for the Reactor Recirculation System (RRC) flow control valves. While WNP-2 is scheduled to shutdown in April, 1995 for refueling, the requested May, 1995 date provides limited schedular flexibility to meet the potential power needs of the people of the pacific northwest region.

On September 15, 1994 verbal enforcement discretion was granted allowing continued operation of WNP-2 for a 14 day period while not being in full compliance with Technical Specification requirements. The referenced letter docketed the information provided to support the verbal enforcement discretion. Approval of this amendment request by September 29, 1994 will support continued operation of WNP-2 and will avoid a forced plant shutdown.

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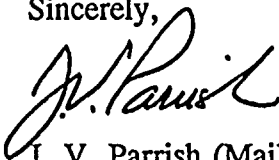
REQUEST FOR AMENDMENT TO THE WNP-2 TECHNICAL SPECIFICATIONS UNDER
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Attachment 1 to this letter provides a detailed justification for the proposed change. Attachment 2 provides a no significant hazards consideration as required by 10 CFR 50.92. Attachment 3 provides marked up Technical Specification pages identifying the requested changes.

This change has been 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.

Should you have any questions or desire additional information, please contact me or D.A. Swank at (509) 377-4563.

Sincerely,



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

DAS/bk
Attachments

cc: LJ Callan - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Sr. Resident Inspector - 927N
FS Adair - EFSEC

STATE OF WASHINGTON)
)
COUNTY OF BENTON)

Subject: Request for Amend to TS Under Emergency
Circumstances With Regard to Primary
Containment Isolation Valve Requirements

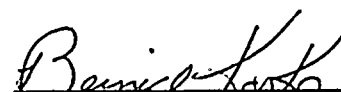
I. J. V. PARRISH, being duly sworn, subscribe to and say that I am the Assistant Managing Director, Operations for the WASHINGTON PUBLIC POWER SUPPLY SYSTEM, the applicant herein; that I have the full authority to execute this oath; that I have reviewed the foregoing; and that to the best of my knowledge, information, and belief the statements made in it are true.

DATE 18 September, 1994


J. V. Parrish, Assistant Managing Director
Operations

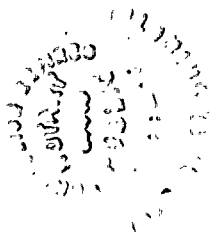
On this date personally appeared before me J. V. PARRISH, to me known to be the individual who executed the foregoing instrument, and acknowledged that he signed the same as his free act and deed for the uses and purposes herein mentioned.

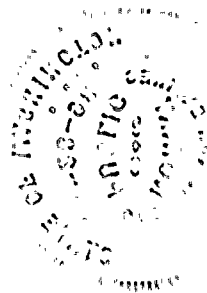
GIVEN under my hand and seal this 18 day of September 1994.


Notary Public in and for the
STATE OF WASHINGTON

Residing at Kennelworth, WA

My Commission Expires 4/28/98





REQUEST FOR AMENDMENT TO THE WNP-2 TECHNICAL SPECIFICATIONS UNDER
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Attachment 1

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In response to information received over the Institute for Nuclear Power Operations computer network describing a problem with the isolation logic for the valves associated with the containment monitoring system at another plant, the Supply System initiated a review of the WNP-2 containment atmospheric monitoring system containment isolation logic to ensure that single failure criterion were met. In June, 1994 a similar condition was found at WNP-2 where the isolation logic for containment isolation valves that are part of the containment atmospheric monitoring system did not meet the single failure criterion. This condition was reported in Licensee Event Report (LER) 94-013-00 and corrected during the Spring 1994 maintenance and refueling outage. This information is a correction to the April, 1994 LER 94-009-00 reference provided in the referenced letter. As a corrective action for LER 94-013-00, an ongoing review is being conducted of the automatic containment isolation logic.

On September 15, 1994 during performance of the automatic containment isolation logic review, it was determined that the isolation logic for the containment isolation valves associated with the Reactor Recirculation System (RRC) flow control valve hydraulic lines does not meet single failure criterion. The specific single failure condition identified with the logic is that there are two cases within a logic division where, given a single relay contact failure to open on demand for either of the two relays, both isolation valves in series fail to close on a Loss Of Coolant Accident (LOCA) signals (high drywell pressure or low reactor water level). A simplified schematic of the logic is provided as Attachment 4. This is sometimes referred to as a "two out of two taken once" logic. This failure of a single relay contact (from either of two relays per division) actually results in the eight hydraulic line primary containment isolation valves associated with a given recirculation flow control valve remaining open. There are two divisions of isolation logic, one division for each of the eight valves associated with a given recirculation flow control valve. This condition is identical within each division.

This condition was found as part of the detailed design review performed as a corrective action for LER 94-013-00. This type of review requires an extended effort to complete. As such, this amendment request could not have been made in a more timely manner to preclude the need for an amendment under emergency circumstances.

The specific amendment requested is the addition of a note (I) to Technical Specification Table 3.6.3-1, "Primary Containment Isolation Valves," to apply only to sixteen reactor recirculation hydraulic control containment isolation valves as listed on Technical Specification page 3/4 6-22. Note (I) will state:

- (I) The isolation logic associated with the Reactor Recirculation Hydraulic Control containment isolation valves need not meet single failure criterion for OPERABILITY for a period ending no later than May 15, 1995.

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WNP-2 is currently scheduled to shutdown in April, 1995 for refueling. The May 15, 1995 date provides a limited amount of schedular flexibility to meet the potential power demands of the people of the pacific northwest region. Should WNP-2 be placed in a hot shutdown condition (Operational Condition 3) prior to May 15, 1995 the single failure condition will be corrected prior to plant restart.

The Supply System evaluated the potential for continued operation with the identified condition. Technical Specification 3.6.3 allows continued operation if the subject hydraulic lines are isolated by at least one closed and de-activated isolation valve per line. This condition restricts the operators capability to respond to plant transients such as a feedwater pump trip. As described in Attachment 5, the increased risk associated with extended plant operation with the hydraulic lines isolated, or from an additional plant shutdown, is greater than the risk associated with operation with the current configuration. Supply System management concludes that extended operation with the isolation valves closed and de-activated represents an imprudent operational condition, while there is no increase in core damage frequency associated with continued operation with the present configuration.

The Supply System is evaluating the potential of correcting this logic condition at power, and is performing a more detailed evaluation of the design requirements for this logic. Preliminary evaluation of the potential plant modifications indicates that a potential for a reactor scram exists if a modification is implemented at power. A modification will not be made at power if the risk of a reactor scram is judged significant. The staff will be notified if the Supply System determines that this condition will be corrected with the plant at power.

As described above, the logic for isolation of the RRC hydraulic valves does not meet single failure criterion. However, the logic is expected to function on demand. The relays that would have to fail to result in a failure to isolate (MS-RLY-K103/K105, K104/K106) were replaced in the Spring 1994 maintenance and refueling outage and the replacement relays were functionally tested and response time tested as part of the replacement effort. A loss of power to the logic results in isolation valve closure. Thus, there is a high level of confidence that the relays will function on demand and result in isolation valve closure.

Operations personnel are trained to verify automatic functions occur on demand, and to take manual actions to affect the actions if they do not occur. The action taken for these valves is to manually close them from the main control room using the available keylock switches. A relay contact failure to open would not interfere with the main control room operators ability to manually close these automatic valves from the main control room.

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As a compensatory measure until the plant can be modified during the next shutdown, additional information was provided to Operations personnel with the information necessary to achieve immediate isolation of the sixteen valves in the event of a LOCA inside containment, failure of the containment isolation logic to properly function and cause isolation, and failure of the valves to go closed when the main control room keylock switches are operated. This additional information includes the location of fuses within the main control room that, when removed, cause valve closure.

A break of the RRC flow control valve hydraulic lines inside and outside of primary containment is considered unlikely. Piping and valves of the hydraulic system for the RRC flow control valves (system HY(1)) are 3/4" and 1" in diameter up to the second outboard primary containment isolation valve and are Seismic Category I, Quality Class II, and ASME Code Class 2. Piping and valves of HY(1) inside containment, and outboard of the second primary containment isolation valve (including HY-HP-3A & 3B), and less than 3/4" diameter are Seismic Category II+, Quality Class II, and ANSI B31.1.

Seismic Category II+ defines those systems with pipe supports designed to Seismic Category I requirements, but with the piping analyzed only to remain within elastic limits (i.e., Code upset/Operational Basis Earthquake stress limits need not be maintained.) In other words, the piping integrity is not ensured, but the piping will not fail in a manner such that it might impact another Quality Class I system or component.

The HY piping and components have not been identified as "targets" for postulated high energy pipe breaks inside or outside of primary containment. A design basis pipe break of a line inside primary containment is not postulated to damage the hydraulic lines. Thus, no breach of primary containment integrity would occur even if the HY isolation valves did fail to close because of the "closed system" (hydraulic system) inside and outside containment.

In addition, the design basis for WNP-2 is that no break or crack need be postulated in high or moderate energy piping having a nominal diameter less than or equal to 1" (reference FSAR sections 3.6.2.1.4.1 and 3.6.2.1.4.2). Since the HY piping is less than or equal to 1" nominal diameter, no pipe breaks are postulated.

The proposed amendment will allow continued operation until no later than May 15, 1995 with the isolation logic for the RRC flow control valve hydraulic lines containment isolation valves not meeting single failure criterion. The logic will remain capable of providing isolation except during the postulated relay failure. The Supply System concludes that granting of the requested change does not represent a significant safety issue.

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The Supply System has evaluated this amendment request and determined it does not represent a significant hazards consideration because it will not:

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change impacts only the single failure provisions of the isolation logic for the RRC flow control valve hydraulic line primary containment isolation valves. These valves serve only two functions, containment isolation and remaining open to support flow control valve positioning. Flow control valve positioning is not impacted by the proposed change. Transients requiring recirculation flow control are thus not affected by the proposed change.

Single failure design and analysis criterion for WNP-2 are provided in FSAR Section 15.0.3.2.1.1 with additional information provided in FSAR Section 1.2.1.1.2(ℓ). FSAR Section 15.0.3.2.1.1 states:

Analysis criterion established as applicable to WNP-2 at the PSAR/construction permit stage required that 1) single active component failure (SACF) criterion be applied to design basis accident categories and 2) transient evaluations be judged against a criterion of one single equipment failure (SEF) or one single operator error (SOE) and were to be considered as the initiating event.

Regulatory Guide 1.70 Rev. 2 now requires that single failures and operator errors should be considered in the evaluation of all the various transient and accident situations analyzed.

If the single active failure is the relay, then operator action assures isolation. Operator action is not postulated to cause a failure to isolate.

Failure to close the containment isolation valves for the RRC flow control valve hydraulic lines is not an initiator for a previously evaluated accident. Therefore, no increase in the probability of an accident previously evaluated would be created.

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The containment isolation valves are provided to mitigate the consequences of a LOCA generated by a spectrum of break sizes inside primary containment. The requirements of General Design Criterion 56 continue to be met since redundant automatic isolation valves, capable of being automatically closed by the isolation logic or remote manually closed from the main control room, are provided. Failure of the two valves in a single line to close on demand from the separate main control room keylock control switches, hydraulic line failures both inside and outside containment, failure of the relay contact to open, and failure of the valves to close when the fuses are pulled must be postulated to result in an increased release rate post LOCA. This constitutes multiple failures beyond those required to be postulated for WNP-2 as noted on the previous page. Therefore, the proposed change will not result in a significant increase in the consequences (releases or personnel exposure) of a previously analyzed accident.

- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated.

Failure to automatically close the hydraulic line containment isolation valves will not have an adverse impact on the plant. As described in 1) above, full containment isolation capability in accordance with the requirements of GDC 56 remains available. Therefore, issuance of the proposed change will not result in a new or different kind of accident from any previously evaluated.

- 3) Involve a significant reduction in a margin of safety.

The margin of safety potentially impacted by the proposed change is the margin between the current calculated off-site and main control room exposures post-LOCA and allowable exposure limits. Exposures are directly related to containment leakage rates. As described in item 1) above, however, containment isolation is assured even with the proposed change since redundant automatic containment isolation valves remain available to support isolation. No significant increase in releases (containment leakage) or exposures would be postulated since either the inside or outside containment hydraulic lines (or both) would remain intact for the short period of time these valves may remain open prior to closure from the main control room. Thus, the margin of safety will not be significantly reduced by approval of the proposed change.

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Environmental Considerations

As previously discussed, the Supply System concludes that this request does not involve a significant hazards consideration. Additionally, there is neither a potential for a significant change in the types or significant increase in the amount of any effluent that may be released offsite, nor a significant increase in individual or cumulative occupational radiation exposure. Accordingly, the proposed change meets the eligibility criterion for categorical exclusion set forth in 10 CFR 51.22(c)(9) and, therefore, per 10 CFR 51.22(b), an environmental assessment of this change is not required.