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SUBJECT: Application for amend to License NPF-21,revising TS 3.1.3.1 re actions for inoperable scram discharge vol vent.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • 3000 George Washington Way • Richland, Washington 99352

October 23, 1990
G02-90-178

Docket No. 50-397

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

Gentlemen:

Subject: NUCLEAR PLANT NO. 2, OPERATING LICENSE NPF-21
REQUEST FOR AMENDMENT TO TECHNICAL SPECIFICATION 3.1.3.1,
ACTIONS FOR INOPERABLE SCRAM DISCHARGE VOLUME
VENT AND DRAIN LINES

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90 and 2.101, the Supply System hereby submits a request for amendment to the WNP-2 Technical Specifications. Specifically, the Supply System is requesting that actions for inoperable scram discharge volume (SDV) vent and/or drain valves be provided in LCO 3.1.3.1 - Control rods. This specification contains the surveillances for verifying that these valves are operable but does not address actions required in the event of inoperable SDV vent and/or drain valves. As a result, should one or more of these valves be inoperable, the only action which could be applied is to declare all control rods inoperable and commence an immediate shutdown per LCO 3.0.3. Application of 3.0.3 is considered overly conservative and is currently applicable due to the omission of an appropriate action statement. The valves serve a containing function and should apply actions no more severe than the primary containment isolation valves (LCO 3.6.3). Accordingly, in order to avoid an unnecessary plant shutdown by allowing time for valve restoration, an appropriate action for inoperable SDV vent and/or drain valves is being requested.

The purpose of the SDV is to serve as a collection volume for water displaced by the control rod drive pistons during a scram. During normal operation, the SDV vent and drain valves remain open to allow operational leakage from the scram system to drain from the SDV to the reactor building equipment drain sumps. The vent and drain lines have redundant valves on each of these lines. These valves automatically close upon the receipt of a scram signal and isolate the SDV thereby preventing a continuous discharge of reactor coolant to the reactor building following a scram. These valves fail closed upon loss of air and/or electrical power.

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To assure that there will be sufficient capacity in the SDV to accommodate the water displaced from all 185 control rod drive mechanisms, the reactor is automatically scrammed when the water level in the SDV exceeds a specified level setpoint. High water level in the SDV is detected with both float switches and level transmitters. Additionally, alarms and a rod block condition precede the scram level setpoints to permit operator action that may prevent a scram.

The proposed Action Statement d. of Technical Specification 3.1.3.1 provides the required action if one or more vent and/or drain valve(s) is found to be inoperable. As previously stated, during normal operation, the SDV is vented and drained to the reactor building equipment sump. Each vent and drain line contains two valves in series which close on a scram signal. With one or more SDV vent and/or drain valves inoperable, the isolation function is not eliminated provided the redundant valve in the affected line is OPERABLE or the line is isolated. Therefore, proposed action d. allows 7 days of operation with inoperable valve(s) provided the redundant valve in the affected line is verified OPERABLE immediately or the line is isolated within 8 hours. These compensatory measures help ensure that during the limited time period when SDV vent and/or drain valves are inoperable, the vent and drain path will be closed to contain reactor water should a scram occur. However, should the line be isolated, the potential for an inadvertent scram due to high SDV level is increased due to the small amounts of leakage from the 185 scram discharge valves. Therefore a note has been provided to allow periodic opening of the isolated line under administrative controls for draining/venting of the SDV. The administrative controls will minimize the time the inoperable valve(s) are left open. If the inoperable valve(s) cannot be made operable within 7 days, the plant shall be placed in at least hot shutdown within the next 12 hours. During these periods given the inoperable valve(s) in the open position, Action Statement d. is considered acceptable because the remaining operable vent and drain valves can still be expected to perform their function of isolating the SDV.

Additional modifications to the SDV vent and drain systems have been completed that further mitigate a failure of both redundant valves to close on a scram signal. The vent line is hard piped to the reactor building equipment drain sump with the discharge pipe below the water level and the drain line is hard piped into the reactor building floor drains. For the minimal interval proposed, operation with the lines open and unable to close (should the redundant valve fail) does not represent a significant risk with respect to radiological exposure and primary containment isolation.

Extended operation with any SDV vent and/or drain valve inoperable, even if closed, is not permitted by the action statement. In other words, long term reliance on a single-operable isolation valve is not permitted.

These proposed action statements and allowed outage times are similar to those in practice at Grand Gulf, Perry, Clinton, River Bend and Susquehanna. In summary, the SDV vent and drain valves primary safety function is to enable full CRD motion and isolate the SDV following a scram. The actions provided are considered consistent with required actions for the Primary Containment Isolation Valves. The isolation function can still be satisfied if at least one valve is OPERABLE in each line or the line is isolated. Therefore, the actions require isolating the affected line in 8 hours unless at least one valve is OPERABLE in the line. With a single OPERABLE valve in the line, the system is capable of performing its intended function. However, the reliability of the isolation function is reduced because a single failure of the remaining OPERABLE valve may prevent isolation of the line. Therefore, only a limited time is allowed in this condition (7 days). Recognizing that the SDV vent and drain valves are normally open to prevent accumulation of water in the SDV from leakage, a note has been added to allow periodic opening of the affected line under administrative controls for draining/venting the SDV. This change is consistent with the requirements in other BWR Plant Technical Specifications.

The Supply System has evaluated this amendment request 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 SDV vent/drain valves are not assumed in the initiation of an analyzed event. Their role is containing reactor coolant following analyzed events that cause a scram, and thereby limits accident consequences. The proposed action will not allow continuous operation and thereby adequately limits the probability of a single failure to create an unisolated path for reactor coolant release. Therefore, this 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 the isolation function is maintained by either the remaining operable automatic isolation valve or manual isolation of the vent and/or drain path. The alarm, control rod block and reactor scram functions on increasing water level in the SDV are unaffected. Hence no new or different kind of accident is credible.

3) Involve a significant reduction in a margin of safety. The time allowed to continue operation with inoperable SDV vent and/or drain valves, prior to requiring a plant shutdown, is acceptable based on the small probability of an event requiring the SDV vent and drain valves to isolate and the desire to minimize unnecessary plant transients. The requested completion times may also provide sufficient time to repair the inoperable valves without subjecting the plant to a shutdown transient which would increase the probability of an event requiring the function of the SDV. The exposure of the plant to the small probability of an event requiring the SDV vent and drain valves during the increased time is insignificant and offset by the benefit of avoiding an unnecessary plant transient.

As discussed above, the Supply System considers that this change does 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 it 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 10CFR 51.22(c)(9) and therefore, per 10CFR 51.22(b), an environmental assessment of the change is not required.

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

Very truly yours,

G. C. Sorensen, Manager
Regulatory Programs

Attachments
PLP/bk

cc: JB Martin - NRC RV
NS Reynolds - BCP&R
PL Eng - NRC
DL Williams - BPA/399
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