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SUBJECT: Application for amend to license NPF-21,consisting of
 changes to TS table 3.6.3-1,for RCIC-V-8,increasing stroke
 time from 13 seconds to 26 seconds & deleting note (j)
 reference from RCIC-V-8 & RCIC-V-63.

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February 8, 1994
G02-94-035

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 TECHNICAL SPECIFICATION
TABLE 3.6.3-1, PRIMARY CONTAINMENT ISOLATION VALVES**

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90, 2.101, and 50.91(a)(6), the Supply System hereby submits a request for amendment to the WNP-2 Technical Specifications as provided for in the regulations. Specifically, the Supply System is requesting that the stroke time, as specified in Table 3.6.3-1, for RCIC-V-8, be increased from 13 seconds to 26 seconds and that the note (j) reference be deleted from RCIC-V-8 and RCIC-V-63. The note (j) indicates that the stroke time specified in the Table reflects the requirement for containment isolation only.

These two Reactor Core Isolation Cooling (RCIC) System valves, RCIC-V-8 and RCIC-V-63, are the outboard and inboard, respectively, containment isolation valves in the steam supply line to the RCIC turbine. The valves function to isolate the RCIC System in the event of a High Energy Line Break (HELB) preventing high temperature, high pressure, and high humidity in the reactor building due to release of core liquid inventory. Automatic isolation is based solely upon RCIC parameters (e.g., pipe chase temperature, steam supply pressure, exhaust diaphragm pressure, HVAC ΔT , high steam flow). The design basis loss of coolant accident signals of low reactor water level or high drywell pressure do not isolate these valves.

During testing of the RCIC-V-8 motor operator to assure compliance with the requirements of Generic Letter 89-10, it was determined that the FSAR requirement of a 10-second closing time could not be met for a full stroke. The open stroke of the valve was limited to 65% open (by adjusting the limit switches) in order to resolve this situation.

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**REQUEST FOR AMENDMENT TO TS TABLE 3.6.3-1
PRIMARY CONTAINMENT ISOLATION VALVES**

The Supply System determined that the closing thrust was adequate but did not provide the desired conservatism for closing RCIC-V-8. To improve the thrust capability, the Supply System initially planned to purchase a new valve and operator that would meet the 10-second stroke time and provide more thrust. However, during a reevaluation of the RCIC-V-8 stroke time requirements, it was determined that a 26-second stroke time would be acceptable. To meet the new stroke time and still assure adequate thrust requires that the motor pinion gear and worm shaft gear be changed to provide a higher torque output from the actuator.

The containment isolation stroke times in Table 3.6.3-1 in the Technical Specifications for RCIC-V-8 and V-63 were based on the actual capability for the valves to close (i.e. 13 and 16 seconds respectively). Due to earlier HELB evaluations, the limit switches on the motor operators for the two valves were set so that a 10 second stroke time was achieved for each valve. The fact that the HELB closure requirements for the valves were more limiting than the times specified for containment isolation was indicated by the addition of the reference to note (j) to Table 3.6.3-1. As constraints to valve operation were imposed during the implementation of a Motor Operated Valve Program, it has become necessary to increase the stroke time for RCIC-V-8 to meet torque requirements for valve closure. The new HELB calculations allow the HELB stroke time for these valves to be increased from 10 seconds to 26 seconds for RCIC-V-8 and to 16 seconds for RCIC-V-63. The changes in stroke times will impact HELB analyses but will result in no change in offsite dose consequences or equipment qualification doses. The change in equipment qualification doses resulting from the changes in stroke time to RCIC-V-8 and V-63 is bounded by existing zone doses presented in Appendix J of the FSAR.

The RCIC System is designed to automatically initiate and inject water into the reactor vessel when the vessel is isolated from the main condenser. In the event of a design basis accident in which a portion of the core inventory of radionuclides is released to the primary containment, the RCIC System would initiate on low reactor water level and remain available until reactor pressure dropped below the pressure necessary to drive the RCIC turbine. When reactor pressure drops to this threshold, 62 psig, the RCIC System automatically isolates. Isolation of the RCIC System on low pressure ensures that any release of the radionuclides is contained within primary containment and current projected offsite doses remain valid. In summary, in accidents that have depended upon primary or secondary containment isolation to limit offsite dose consequences, no credit is taken for the isolation of the RCIC valves during the initial stages of the accident to limit the potential release.

As indicated, no design basis accident criterion was used to establish the valve stroke time limits specified in this Technical Specification. Guidance, that the maximum stroke time for isolation valves be less than 60 seconds for any size valve, is provided in NUREG 0800, Standard Review Plan, Section 6.2.4. Both RCIC-V-8 and V-63 isolate well within the 60 second guidance. Therefore, Table 3.6.3-1 in the Technical Specifications can be updated to reflect the new stroke time of 26 seconds for RCIC-V-8 and the reference to note (j) can be deleted for RCIC-V-8 and

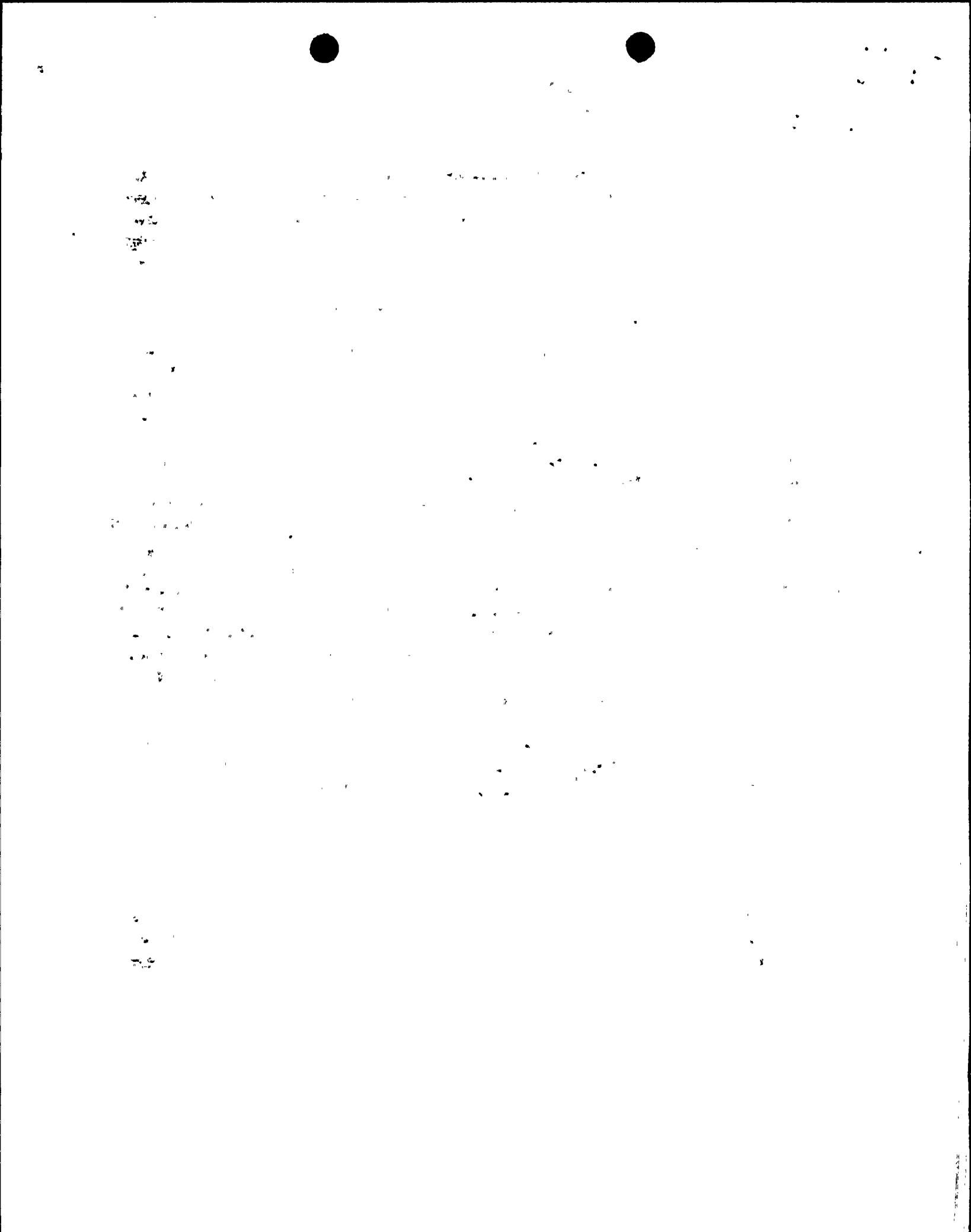
**REQUEST FOR AMENDMENT TO TS TABLE 3.6.3-1
PRIMARY CONTAINMENT ISOLATION VALVES**

and V-63. The values for valve stroke times shown in Table 6.2-16 of the FSAR are based on HELB analyses. The requested change to the Technical Specifications will provide consistency between the two documents. After the calculations indicated that the stroke time of the outboard isolation valve could be increased, the stroke time requirements for RCIC-V-63 were also evaluated. It was determined that the stroke time, necessary to satisfy HELB concerns, could be increased from 10 to 16 seconds. Sixteen seconds also is the maximum allowable stroke time for containment isolation, as specified in Technical Specification Table 3.6.3-1

The Supply System has revised a variety of documents to reflect the new stroke times, including the HELB profiles and equipment Qualification Information Document (QID files). It has been verified that all equipment affected by the brief temperature spike given by the new HELB profile would continue to be operable. The profiles depicting postulated HELB environmental condition profiles at various areas in the Reactor Building at elevations 422', 441', and 501' were revised. The shape and duration of the profiles remained unchanged. However, in two of the areas (441I and 501B) the peak temperature increased. The change was from 170°F to 240°F in area 441I and from 145°F to 168°F in area 501B. The review of the qualification documents for the equipment located in these two areas found that the equipment qualification profiles enveloped the new HELB profiles. Therefore, the equipment remained qualified. Additionally, the equipment qualification temperature durations were typically several hours at the peak qualification temperatures. The durations of projected HELB profile temperature peaks were on the order of minutes. Thus, in addition to that provided by the direct temperature margins, a significant enhancement to the margin is provided by the limited time the equipment is exposed to the peak temperatures. For example, in the most limiting situation, certain Limitorque actuators which were qualified to 250°F are in the area where the new peak has been calculated to be 240°F (area 441I). However, the actuators were qualification tested for 250°F for 22 hours, while the new HELB peak of 240°F exists for only a few minutes. Therefore, even though the margin for the peak temperature was reduced from 80°F to 10°F, the operability of the equipment is maintained because the overall margin is enhanced by the limited time of exposure to the new HELB peak temperature. The review of the other QID files indicated that the Limitorque actuators presented the most limiting conditions. In each of the other cases a more significant temperature or time margin existed. Therefore, it was concluded that the new profiles have no adverse effect on the qualification status of equipment and no reduction in the margin of safety.

The qualifications of several hundred equipment items documented in approximately twenty-five qualification packages were reviewed. The results of the review have been documented and the qualification packages will be updated to show the new profiles at the next revision.

Based upon these evaluations, the Supply System has determined that the increase in RCIC-V-8 stroke time and the removal of the reference to note (j) from RCIC-V-8 and V-63 do not represent a significant hazards consideration because they do not:



**REQUEST FOR AMENDMENT TO TS TABLE 3.6.3-1
PRIMARY CONTAINMENT ISOLATION VALVES**

- 1) Involve a significant increase in the probability or consequences of an accident previously evaluated. RCIC-V-8 and V-63 are containment isolation valves and are normally open. Failure of the valves to open or close cannot cause an accident. The mitigating capability of RCIC-V-8 and V-63 is not changed in that the valves will continue to be closed within the established time limits. This ensures protection of the safety related equipment necessary for continued compliance with the requirements of General Design Criterion 4. In those accidents which involve a source term and potential adverse dose release consequences, no credit is taken for the closing of the valves; therefore the increase in the allowable time for closing does not increase the consequences of those accidents.
- 2) Create the possibility of a new or different kind of accident from any accident previously evaluated. The requested Technical Specification change does not represent a change in modes of operation. It does not, in itself, require physical modification to the plant, although it will be used to allow a gear change in RCIC-MO-8. The new gears represent a standard configuration for Limitorque motor operators and will require a routine design change. The required Technical Specification change maintains the licensing basis for the plant as discussed in response to question 1. Hence, no new or different kind of accident is possible as a result of implementing this change.
- 3) Involve a significant reduction in a margin of safety. The increase in stroke time will increase the peak temperature in the HELB profiles and thereby decrease the margin available from the equipment qualification limits. However, sufficient margin remains to assure the equipment operability is maintained and there is no reduction in the margin of safety. Additionally, there is no reduction in the margin of safety because increasing the stroke time will not change the postulated radiological releases.

The Supply System concludes that this change does not involve a significant hazards consideration, and that there is no potential for a significant change in the types or significant increase in the amount of any effluent 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 10CFR 51.22(c)(9) and therefore, per 10CFR 51.22(b), an environmental assessment of the change is not required.

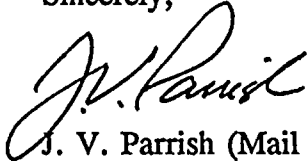
This Technical Specification change has been reviewed and approved by the WNP-2 Plant Operations Committee (POC) and the Supply System Corporate Nuclear Safety Review Board (CNSRB). In accordance with 10CFR 50.91, the State of Washington has been provided a copy of this letter.

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**REQUEST FOR AMENDMENT TO TS TABLE 3.6.3-1
PRIMARY CONTAINMENT ISOLATION VALVES**

Currently, the Supply System has planned to implement this change to RCIC-V-8 during the next refueling outage, scheduled for the Spring of 1994. To facilitate the completion of the design change package and the planning necessary to support implementation during the outage, the Supply System is requesting that the requested change be issued prior to April 1, 1994. Delay beyond this date will impact the ability to implement the necessary design change and to meet the criteria established by the Motor Operated Valve Program.

Sincerely,



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

Attachments

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