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AUTH.NAME AUTHOR AFFILIATION
BAKER,J.W. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
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SUBJECT: Application for amend to License NPF-21,adding note to Spec 3.7.3, "RCIC Sys" to allow for RCIC to be assumed operable w/RCIC suction aligned to condensate storage tank.

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April 1, 1993
G02-93-075

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 3.7.3, REACTOR CORE ISOLATION COOLING SYSTEM UNDER EMERGENCY CIRCUMSTANCES**

In accordance with the Code of Federal Regulations, Title 10, Parts 50.90, 2.101, and 50.91(a)(5), the Supply System hereby submits a request for amendment to the WNP-2 Technical Specifications on an emergency basis as provided for in the regulations. Specifically, The Supply System is requesting that a note be added to Specification 3.7.3, Reactor Core Isolation Cooling (RCIC) System, to allow for RCIC to be assumed operable with the RCIC suction aligned to the condensate storage tank (CST) and without the ability to automatically take suction from the suppression pool. The portion of Technical Specification 3.7.3 for which the emergency Technical Specification is requested is that which requires the system to be operable with an operable flow path capable of automatically taking suction from the suppression pool. As discussed below, with the RCIC System initially aligned to the CST and without the automatic transfer capability the RCIC System is capable of providing adequate core cooling in the event of reactor isolation from its primary heat sink and the loss of feedwater flow to the reactor vessel.

The requested note will allow for the alignment of the CST without automatic transfer capability until the spring 1993 maintenance and refueling outage. The outage is currently scheduled to begin May 3, 1993. To accommodate a potential change in this schedule it is requested that the Technical Specification change be effective until May 17, 1993 or the beginning of the 1993 refueling outage when RCIC operability is no longer required; whichever occurs first.

For the reasons discussed below, the plant entered the LCO associated with RCIC Technical Specification 3.7.3 on March 19, 1993 at 2:30 pm, PST. This LCO has a 14 day Allowable Outage Time (AOT). As the condition leading to the need to enter this action statement cannot be corrected within the 14 day AOT, absent approval of the requested change to Technical Specification 3.7.3, the plant will be required to shutdown on April 2, 1993 at 2:30 pm, PST.

Description of Condition

During a review of the safety related containment isolation portions of the RCIC System, it was discovered that the two containment isolation barriers (RCIC-V-31 and closed loop outside containment) for RCIC suppression pool suction line could be defeated with a single failure. This potential release path resulted in the failure to comply with commitments made to General Design Criterion (GDC) 56 for this containment penetration. Failure to satisfy GDC 56 resulted in the Primary Containment being inoperable. Consequently, on March 19, 1993, the RCIC system was declared inoperable when RCIC-V-31 valve was closed and its motor operator was de-energized and the breaker tagged open to maintain compliance with Technical Specification 3/4.6.3, Primary Containment Isolation Valves. This action removed the capability of RCIC to automatically shift suction to the suppression pool. The scenario that could lead to this liquid release is as follows:

- The plant is at power with RCIC pump suction in its normal alignment to the Condensate Storage Tank.
- An event occurs (e.g., a small break LOCA) for which RCIC is initiated.
- During the event, the RCIC pump suction transfers from the Condensate Storage Tank to the suppression pool.
- After this transfer, the required most limiting single failure is postulated to be the loss of Division 1 DC power to the RCIC system.
- The DC power failure leads to the loss of RCIC system control with RCIC-V-31 and RCIC-V-46 remaining open.
- With RCIC-V-31 and RCIC-V-46 open, suppression pool water will drain through RCIC-V-31, the RCIC injection pump, RCIC-V-46, RCIC-PCV-15, the lube oil cooler and barometric condenser to the vacuum tank. The static head of water that will exist at the vacuum tank due to the elevation difference between the suppression pool water level and the vacuum tank will be sufficient to lift the vacuum tank relief valve at its setpoint of 6 psig.

- The water passing through the relief valve will flow at about 5.5 gpm through the Equipment Drain (Radioactive) System (EDR) to an Equipment Drain Sump which is isolated during accident conditions.

- Gaseous releases from the suppression pool water will be treated by the Standby Gas Treatment system before release to the environment.

The WNP-2 PRA has shown the probability of this event occurring to be less than 10^{-7} events/year.

This condition was recognized as a result of an ongoing Supply System program to review component safety classifications. The condition was recognized only recently and the immediate action described above was taken. Because of the recent discovery of this condition and the short allowed outage time before plant shutdown is required, insufficient time was available to determine and implement a permanent corrective action that eliminates this condition. As a result, it was not possible for the Supply System to anticipate this event and submit this request in a more timely manner.

Plant Status and Compensatory Actions

On March 19, 1993 this event was reported to the NRC under §50.72(b)(1)(ii)(A).

At 2:30 pm, PST on March 19 power was removed from RCIC-V-31 by tagging open its breaker. With the valve in its normal closed position, this action eliminated the need to consider the above discussed potential liquid release path. To eliminate the remaining concern of a hot short failure (required by application of the WNP-2 Electrical Separation Criteria) repositioning the RCIC-V-31 valve under any conditions it would have been necessary to disconnect the power cables at the motor operator located in the Reactor Building. With the primary attention given to overall plant safety, the decision was made that the most prudent action would be to open the breaker. With the breaker located in a mild environment, access to the breaker is available for any design basis accident condition. Where as access to reconnect the motor would not have been available post accident and for non-accident conditions for which access would be achievable, the time to reconnect cables to the motor would be several hours. While these actions did not entirely remove the potential for a hot short failure repositioning the RCIC-V-31 valve, the action of opening its breaker significantly reduced this risk. This was accomplished by eliminating the hot short potential for all related circuits except the relatively short power cable run from the breaker to RCIC-V-31 motor operator.

For the duration of the requested emergency Technical Specification change the Supply System will not enter the LCO for High Pressure Core Spray System (HPCS) to perform preventative maintenance or other activity that could be deferred until the refueling outage.

Safety Significance

Technical Specification 3/4.7.3, FSAR sections 5.4.6 and 7.4 and the NRC Safety Evaluation Report, sections 5.4 and 7.4, require that the RCIC be capable of taking suction from the suppression pool and transferring water to the reactor vessel. The SER sections specifically require that RCIC have an automatic transfer from its preferred water source, the Condensate Storage Tank, to the suppression pool due to the fact that the Condensate Storage Tank is not designed to withstand the plant design basis seismic event. The basic requirements for the RCIC system design resides with the application of General Design Criteria 2, 4 and 19 resulting in RCIC assignment to the "safe shutdown system" category.

The function of the RCIC system is to provide the ability to achieve and maintain the plant in a hot shutdown condition when it is isolated from the main condenser. If the RCIC system is aligned continually to the Condensate Storage Tank with the automatic transfer to the suppression pool defeated and assuming no tank failure occurs from a seismic event, the RCIC can supply the reactor with water makeup for approximately four hours. This is ample time to stabilize the plant in a hot shutdown condition. If the Condensate Storage Tank were to fail, the RCIC pump suction can be manually transferred to the suppression pool at operator discretion. If that transfer is not prudent, a condition would exist similar to that which has been licensed for Appendix R fire event response. Specifically, the Plant is designed for, and can proceed directly from power operation to cold shutdown with the use of the seismically qualified Safety Relief Valves to depressurize the vessel and the RHR System aligned in the Shutdown or Alternate Shutdown Cooling Mode taking suction from the suppression pool. This can be accomplished from both the Main Control Room and the Remote Shutdown locations.

The compensatory action of opening the RCIC-V-31 motor operator breaker will preclude the automatic transfer of RCIC suction to the suppression pool. The suppression pool suction valve, RCIC-V-31, will remain closed ensuring primary containment integrity is preserved. The Supply System believes that the inadvertent opening of this valve due to a hot short during a cable tray or enclosure fire that would selectively cross connect the power supply to the RCIC-V-31 motor operator with another voltage source in just the required manner to open the valve and thereby establish this containment bypass path is not considered credible. To fully eliminate

the threat of a hot short would require disconnecting the power supply at the RCIC-V-31 motor operator. Weighing the safety significance of retaining the capability to manually transfer RCIC suction to the suppression pool against the possibility of a random hot short creating this bypass path, the Supply System has concluded that retaining the first option takes precedence.

This compensatory action is deemed to have no impact on RCIC ability to perform its Emergency Operating Procedure (EOP) related functions. The EOPs dictate that RCIC suction should be preferentially aligned to the Condensate Storage Tank. Transfer to the suppression pool is retained as an option in the event the Condensate Storage Tank is unavailable. This EOP strategy is unaffected by the above actions. Also, RCIC use as an alternate boron injection path is unaffected.

Justification of the Duration of the Change Request

A potential corrective action to restore the capability of RCIC to automatically transfer to the suppression pool involves a hardware change which, on an expedited basis, will require until mid-April to complete the design and early May to complete the installation. As the modifications would require removing RCIC from service, it is believed that if this option is selected it should not be accomplished until the coming outage. Consideration is also being given to requesting a permanent change to the Technical Specifications using the approach proposed in this request. This option would be to remove from Technical Specification 3.7.3 the requirement for automatic RCIC alignment to the suppression pool. The requested duration of the emergency Technical Specification change is also consistent with the time that would be required to prepare and process that permanent Technical Specification change request.

This requested duration is believed to be acceptable as the ability to achieve manual alignment to the suppression pool on a timely basis is maintained.

No Significant Hazards Consideration

The Supply System has evaluated this change request per 10 CFR 50.92 and has concluded that is does not represent a significant hazards consideration for the following reasons:

- It would not increase the probability of an accident as the RCIC system is credited in mitigating only the ATWS and Remote Shutdown Events. It will also not involve a significant increase in the consequences of an accident as the Condensate Storage Tank, which provides an approximate four hour inventory of water, is sufficient for RCIC design basis event mitigation. For any other conditions where RCIC operation may be useful, should this inventory be depleted or unavailable for any reason, manual transfer of the

RCIC suction may be accomplished because the breaker necessary to activate RCIC-V-31 will be accessible. Repositioning of the RCIC-V-31 and RCIC-V-46 valves due to a hot short failure in the power cabling to these valves with the identified scenario is not considered credible and therefore not considered a viable mechanism for creating a containment bypass leakage path.

- It will not create the possibility of a new or different kind of accident. With RCIC as an accident mitigating feature the proposed change cannot cause an accident. The actions taken are to prevent an unintended liquid release path. There are no conditions within the current WNP-2 licensing basis under which RCIC suction from the suppression pool is required for event mitigation. The option to return the manual transfer function preserves this source of water for situations which may go beyond plant licensing basis.

- It will not create a significant decrease in a margin of safety. With the ability to manually transfer the RCIC suction water source to the suppression pool, the quantity of water available for RCIC operation is not decreased.

Environmental Considerations

As discussed above, the Supply System concludes that this change does not involve a significant hazards consideration, nor is there a potential for a 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 this change is not required.

Summary and Conclusions

WNP-2 is currently in a 14 day LCO for RCIC Operability due to a concern for leakage of suppression pool water to the Reactor Building during certain postulated accident conditions. An emergency Technical Specification change is requested for that portion of the subject Technical Specification which requires the system to be operable with an operable flow path capable of automatically taking suction from the suppression pool and transferring water to the reactor pressure vessel. This request has been approved by the WNP-2 Plant Operations Committee and the Corporate Nuclear Safety Review Board. It is requested that this Technical

Specification change extend from the time of issuance until May 17, 1993, or the beginning of the spring 1993 refueling outage when RCIC operability is no longer required; whichever occurs first. Absent approval of the change request, WNP-2 will be required to commence plant shutdown no later than 2:30 pm PST, April 2, 1993. All other Technical Specification requirements will remain in effect.

Sincerely,

JW Baker

J. W. Baker
WNP-2 Plant Manager (Mail Drop 927M)

cc: JW Martin - NRC, RV
NS Reynolds - Winston & Strawn
JW Clifford - NRC
DL Williams - BPA/399
NRC Site Inspector - 901A