

CATEGORY 1

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SUBJECT: Provides amended response to violations noted in insp rept
 50-397/96-11. Corrective actions: portions of RCIC sys
 required to support reactor vessel inventory makeup will be
 reclassified as safety-related & seismic category I.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

P.O. Box 968 • Richland, Washington 99352-0968

December 23, 1997

GO2-97-228

Docket No: 50-397

U.S. Nuclear Regulatory Commission

Attn: Document Control Desk

Washington, DC 20555

Gentlemen:

Subject: **WNP-2, OPERATING LICENSE NPF-21, CLARIFICATION OF RCIC SYSTEM SAFETY CLASSIFICATION - RESPONSE TO 96-TIA-005 AND AMENDED RESPONSE TO NRC INSPECTION REPORT 96-11 STAFF COMMENT ON RCIC**

- References:
- 1) Letter, dated September 12, 1996, KE Brockman (NRC) to JV Parrish (SS), "NRC Inspection Report 50-397/96-11 and Notice of Violation"
 - 2) Letter, dated July 1, 1997, AT Howell III (NRC) to JV Parrish (SS), "Task Interface Agreement (96-TIA-005) Regarding Seismic Qualification Requirements for the WNP-2 Reactor Core Isolation Cooling (RCIC) System (TAC No. M96554)"
 - 3) Letter, GO2-96-201 dated October 15, 1996, PR Bemis (SS) to NRC, "NRC Inspection Report 96-11, Response to Notice of Violations" // 0
 - 4) Letter, dated June 25, 1985, WR Butler (NRC) to GC Sorensen (SS), "Issuance of Amendment No 11 To Facility Operating License NPF-21, WPPSS Nuclear Project No. 2" Leo

During NRC Inspection 96-11, Reference 1, the inspection team questioned whether the NRC had approved the actions taken by the Supply System in 1985 to downgrade the Reactor Core Isolation Cooling (RCIC) System. Subsequent to that inspection, the Supply System has undertaken a design review of the RCIC System to determine the safety classification for the system and implement any required actions to assure appropriate standards are met. One of the

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initial tasks of this design review was to evaluate the licensing and functional basis for the safety classification of the RCIC System. This system-level evaluation is complete and documented in a revision to a technical memorandum. The purpose of this letter is to communicate the results of the evaluation, clarify the Supply System's position relative to Task Interface Agreement (TIA) 96-TIA-005 (Reference 2), and supplement our response (Reference 3) to the staff comment in Inspection Report 96-11 regarding the RCIC System classification. Since the system was initially designed, procured, and installed to safety-related standards and has, for the most part, been maintained to these standards, major changes resulting from the 1985 downgrade are not anticipated. Efforts continue expeditiously to complete the remaining tasks.

Supply System Position Relative to TIA Response

1. Was the RCIC System originally designed to be safety-related and seismic category I?

Yes. The Supply System is in agreement that the RCIC System was originally designed to be safety-related and Seismic Category I. Consistent with Final Safety Analysis Report (FSAR) Chapter 3, safety-related and Seismic Category I classifications apply to those portions of the system that support the following functions:

1. Reactor Coolant Pressure Boundary,
2. Containment Isolation,
3. RCIC High Energy Line Break Detection and Isolation, and
4. Reactor Vessel Inventory Makeup.

Functions 1 through 3 have always been classified as safety-related and Seismic Category I and are not in question. Function 4 was classified as non-safety related when modifications to the Automatic Depressurization System (ADS) were implemented (Reference 4), thus, eliminating reliance on RCIC as a backup to the High Pressure Core Spray (HPCS) System for select design basis events.

The Supply System has determined that the RCIC and HPCS Systems were described in the original FSAR as two systems that would initiate following a Control Rod Drop Accident (CRDA). The RCIC System is described as a backup to the HPCS System. Initiation of these systems would only occur if vessel inventory decreases to level 2. This reliance on RCIC as a possible backup to HPCS for the CRDA was reflected in the original plant Safety Evaluation Report (SER: NUREG-0892) and served as the functional basis for the safety-related classification of the RCIC System reactor vessel inventory makeup function.

The TIA correctly notes that RCIC will initiate to provide makeup to the vessel for the loss of all feedwater transient event described in FSAR Section 15.2.7. This reliance does not necessarily invoke a safety-related classification as all systems credited for transient (versus accident) mitigation are not required to be safety-related. The extent to which normally



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operating systems are credited in the mitigation of transients (incidents of moderate frequency) is to be considered during the license review process in accordance with Chapter 15 of the Standard Review Plan (NUREG-0800). The NRC requested in FSAR Question 211.085, that the Supply System identify non-safety grade equipment for which credit was taken to mitigate transients and accidents. The Supply System's response identified the RCIC System as non-safety grade equipment utilized for the loss of feedwater event.

2. Was downgrading the RCIC System to non-safety related acceptable?

Sufficient technical basis exists to justify the downgrade of the RCIC System to non-safety related. Following the ADS modification in 1985 (Reference 4), ADS with low pressure injection can serve as the single failure backup to the HPCS System in place of RCIC. Additionally, accident and transient analyses exist as part of the current licensing basis, including those prepared for the Power Uprate Program, that demonstrate the plant can be safely shut down for postulated accidents and transients without any reliance on RCIC operation.

As noted in the TIA response to this question, the basis for reliance on RCIC when in the Limiting Condition for Operation (LCO) for HPCS is best provided by SECY-93-067, "Final Policy Statement On Technical Specification Improvements," dated May 25, 1993. The fourth criterion of SECY-93-067, as identified by the staff in the TIA, states systems should be included in the Technical Specifications where operating experience and Probabilistic Risk Assessment (PRA) insights have generally shown that they are important to public health and safety. The Supply System agrees with this staff position on the RCIC System discussed in SECY-93-067 and that RCIC System should remain in the Technical Specifications. However, this criterion does not invoke the status of Emergency Core Cooling System (ECCS) on the RCIC System. The WNP-2 Technical Specification Bases (B.3.5.3) clearly note that the RCIC System is neither an ECCS nor an Engineered Safety Feature. Chapters 6 and 15 of the FSAR do not consider the RCIC System in response to any events involving a loss of coolant accident (LOCA). The ECCS are clearly defined in Chapter 6.3 as the HPCS System, the Low Pressure Core Spray (LPCS) System, three loops of Low Pressure Coolant Injection (LPCI), and the ADS. Operation of RCIC as a backup to the HPCS System is not considered in any event requiring ECCS actuation. The HPCS backup system for ECCS actions is the ADS with low pressure injection. In Section 7.4.2.1 of the original WNP-2 SER (NUREG-0892) the staff acknowledged that RCIC is a safe shutdown system. This is consistent with the General Design Criteria (GDC) used in Section 5.4.1.1 of the same SER upon which RCIC System design was evaluated and accepted. The criterion invoked did not include those used to evaluate ECCS design, i.e., GDC 35, 36, and 37.

As RCIC is not the designated WNP-2 coping system for the SBO event, augmented quality designators do not apply (amending the position presented by the Supply System in Reference 3). Docketed correspondence [GO2-89-062 and GO2-90-064] identify HPCS with its dedicated onsite diesel, not RCIC, as the designated system for coping with the event.

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Supplemental SERs for WNP-2 on SBO (TAC M68626) accepted WNP-2's means for satisfying SBO requirements. Though not required by regulation, the RCIC System is the operationally preferred means for vessel inventory makeup (Function 4) for coping with the SBO event and docketed correspondence describes this preference.

The TIA response indicates the RCIC System should be safety-related to place additional emphasis on the essential nature of its operation in support of cooling the plant for Station Blackout (SBO) events. Designated equipment that operates in support of coping with an SBO event is not required to be safety-related. Consistent with Regulatory Guide 1.155, non-safety related equipment can be used to satisfy the requirements of 10CFR50.63, provided such equipment meets appropriate quality requirements as specified in the regulatory guide and provided the failure of such equipment will not adversely affect safety-related equipment relied upon for coping with the SBO event. As noted in Reference 3, non-safety related components required for SBO are designated augmented quality and handled accordingly. Coincidentally, since RCIC System Function 4 has been restored as safety-related, RCIC also meets quality requirements that are imposed on designated SBO coping systems.

3. Do we agree that the safety-related functions of the RCIC System are now enveloped by ADS and it is acceptable for RCIC to be non-safety related and non-seismic Category I?

Modifications to the ADS and current transient and accident analyses as described above provide the basis for demonstrating RCIC operation is enveloped by ADS. The ADS is available for controlled use under a number of emergency operating procedure conditions and is designed as a qualified and reasonable alternative ECCS. We believe "last resort system" does not characterize the intended use of ADS. However, as noted in Technical Specification Bases Section B.3.3.5.1, RCIC flow with HPCS assumed to fail is sufficient to avoid ADS actuation for a complete loss of normal feedwater event. This conclusion does not change as a result of the safety grade status of RCIC because RCIC System Maintenance Rule reliability goals and Technical Specification requirements still apply. Therefore, reliance on RCIC for transient mitigation could still be assumed, thus, minimizing the need for ADS operation.

If it is assumed that, as a result of the downgrade, RCIC will not operate following a seismic event, or as a backup to HPCS for the CRDA, a measurable increase in ADS demand would not occur. The combined probability of a seismic event followed by a transient that required RCIC operation with HPCS failure, or RCIC operation after a CRDA with HPCS failure, does not measurably increase ADS demand when compared to the design basis ADS demand. The design basis ADS demand is approximately $2E-3$ (small LOCA with HPCS failure). Following a seismic event with HPCS and RCIC failure, the ADS demand frequency is approximately $1E-6$ which is not a measurable increase in the ADS demand. However, because Quality Class I and Seismic Category I requirements will be restored, system operation for these scenarios can now be assumed.



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4. Was NRC approval given to downgrade the RCIC System to a non-safety related status?

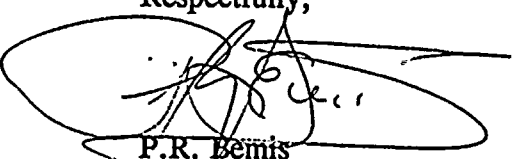
The Supply System acknowledges that approval of the RCIC System classification downgrade was not docketed by the NRC. Application of the 50.59 process and both verbal and docketed communication from the Supply System to the NRC was utilized by the Supply System to confirm the acceptability of the change.

Response to NRC Inspection Report 96-11 Staff Comment

Consistent with the original response provided by the Supply System on the Staff comment relative to RCIC System safety classification, portions of the system that were safety-related for Functions 1, 2, and 3 will remain safety-related. Portions of the RCIC System required to support reactor vessel inventory makeup will be reclassified (presently scheduled to be complete in January 1998) as safety-related and Seismic Category I (amending the Supply System response in Reference 3). Additional requirements imposed on the system, such as support for mitigation of an Anticipated Transient Without Scram (ATWS) event, will continue to apply and be so noted in the Master Equipment List (MEL).

In summary, the functional basis for the safety-related classification of RCIC is the qualitative statement in the original FSAR that it can serve as a backup to HPCS for the Control Rod Drop Design Basis Accident. Though docketed correspondence demonstrates this reliance is no longer required, it serves as the basis for a safety-related classification. Other design basis events and unique conditions, such as the ATWS event, which require RCIC operation do not require the system to be classified as safety-related. Efforts continue expeditiously to complete the design review and evaluate the impact of this reclassification.

Respectfully,



P.R. Bemis

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