

CATEGORY 1

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

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 Document Control Branch (Document Control Desk)

SUBJECT: Responds to NRC 970415 ltr re violations noted in insp rept
 50-397/96-201. Corrective actions: revised performance
 evaluation performed for heat exchanger & FSAR will be
 revised in next revision to FSAR.

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WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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

June 16, 1997
GO2-97-120

Docket No. 50-397

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

Gentlemen:

Subject: **NUCLEAR PLANT WNP-2, OPERATING LICENSE NPF-21
INSPECTION REPORT 96-201
RESPONSE TO OPEN ITEMS**

Reference: Letter, dated April 15, 1997, RM Gallo (NRC) to JV Parrish (SS), "Washington Nuclear Project No. 2 (WNP-2) Design Inspection (NRC Inspection Report No. 50-397/96-201)"

This letter provides our response to the referenced design inspection of the Automatic Depressurization System (ADS), the Standby Service Water (SSW) System and the Residual Heat Removal (RHR) System (Loop B). The purpose of the inspection was to evaluate the capability of the systems to perform safety functions required by the design basis, adherence to the design and licensing basis, and consistency of the as-built configuration with the Final Safety Analysis Report (FSAR).

The inspection team concluded that the selected systems are capable of performing their intended safety functions. However, concerns were raised in the areas of ADS manual initiation design, RHR heat exchanger operability assessments, ADS accumulator design pressure, updating of the FSAR, and quality of the Design Requirements Documents (DRDs).

We have recognized the need to further improve the accessibility and quality of our design and licensing bases information. In response to previous self-assessments and the concerns identified in the inspection report, we have implemented improvement efforts and specific corrective actions to address these issues.

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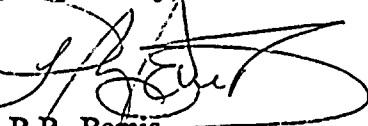
As an example of an improvement effort, we are currently in the process of reviewing and updating the FSAR. This effort began in 1996 and consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70. The FSAR upgrade effort, as referenced throughout the attachment to this letter, will be completed by December 1998. At the completion of the review, we plan to evaluate the lessons learned to determine if additional programmatic efforts are warranted.

Plans are also being developed to improve the quality of our existing DRD program documents. Current plans are to conduct reviews of the system and topical DRDs for accuracy, following the FSAR upgrade effort. After the review, the documents will be revised as necessary.

Specific corrective actions pertaining to the significant items identified in the inspection report include changing the design of the ADS manual initiation logic, revising procedures and methods for assessing the operability of the RHR heat exchangers, and conducting an assessment of ADS actuator design pressure requirements. As requested in the reference, attached is a schedule of our plans to complete the specific corrective actions for the open items listed in Inspection Report 96-201.

Should you have any questions or desire additional information pertaining to this letter, please call me or P.J. Inserra at (509) 377-4147.

Respectfully,



P.R. Bemis
Vice President, Nuclear Operations
Mail Drop PE23

Attachment

cc: EW Merschoff - NRC RIV
KE Perkins, Jr. - NRC RIV, Walnut Creek Field Office
TG Colburn - NRC NRR
NRC Senior Resident Inspector - 927N
DL Williams - BPA/399
PD Robinson - Winston & Strawn



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The following is the schedule for completing the corrective actions for the inspection report open items. For ease of reference, a summary statement for each open item is provided.

96-201-01 "Discrepancies between Residual Heat Removal (RHR) System heat exchanger test analysis source data and the FSAR licensing basis (Report Section E2.1.1.2)." [URI]

Specific Concern: Less than Adequate Testing and Review of Results

This item pertained to an observation that RHR heat exchanger test results and performance analysis identified values which were not consistent with FSAR data. Discrepancies were noted in the measurements of thermal performance of the RHR heat exchangers. In addition, a concern was noted pertaining to a large heat balance disparity observed during the RHR, Loop B, test.

The test engineer had suspected a problem with the ultrasonic flowmeter used to measure RHR flowrate through the heat exchanger. Inspection revealed that the ultrasonic flowmeter for the RHR, Loop B, test was not installed properly to ensure coupling of the transducer to the pipe. This was thought to explain the large heat balance disparity observed during the test of RHR, Loop B, on March 3, 1996. This observation, coupled with the fact that the Standby Service Water (SSW) System side used an installed ASME flow element, led the test engineer to use the more accurate (but less conservative) SSW heat transfer rate to complete the evaluation.

In order to validate the conclusions of the test and resolve the questions of the inspection team, a revised performance evaluation for the heat exchanger was subsequently performed. The lower RHR side heat transfer rate and design conditions contained in the FSAR were used to determine the most limiting design operating mode. This was done for the purpose of comparing the projected test results to the minimum required heat removal rates. The reanalysis showed that the RHR heat exchanger could reject the design and licensing basis heat load.

Plant Procedure (PPM) 8.4.42, "Thermal Performance Monitoring of RHR-HX-1A and RHR-HX-1B," has been revised to 1) more specifically define acceptance and evaluation criteria, 2) require a functional test of the instrumentation prior to the start of the test, and 3) provide direction on performing the evaluation comparing the test results to the most limiting design conditions.

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Proper installation of the ultrasonic flowmeter was confirmed prior to the RHR, Loop B, test performed on March 28, 1997. The heat balance difference across RHR, Loop B, during this test was within the accuracy of the instrumentation.

As a followup, any necessary FSAR clarifications are being reviewed for resolution by means of the ongoing FSAR Upgrade Project.

Generic Implications:

- TEST Beginning August 1, 1997 and following our current maintenance and refueling outage, the procedures for testing other safety-related heat exchangers in the Generic Letter 89-13 Program will be reviewed for potential improvements. These reviews will be completed prior to the next scheduled performance of the procedures during calendar year 1998.
- FSAR We are currently in the process of reviewing and updating the FSAR. This effort consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70.

Status: Open

Scheduled Completion Date (Procedure Changes): July 31, 1998

Scheduled Completion Date (FSAR Upgrade): December 31, 1998



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- 96-201-02 1. "Failure to periodically update the FSAR as required by 10 CFR 50.71(e) pertaining to current RHR system design flow and temperature requirements (Report Section E2.1.1.2)." [URI: Example 1 of 5]

Specific Concern: Failure to Update the FSAR

This item pertained to an observation that the FSAR referred to an RHR heat exchanger flow rate of 7400 gpm. However, PPM 7.4.7.1.1.1, "Standby Service Water Loop A Valve Position Verification," allowed a flow rate of 6900 gpm.

In response to this item, a copy of calculation ME-02-92-245, "RHR Heat Exchanger Tube Side Flowrate and Inlet Temperature Evaluation," was provided to the team during the inspection and Problem Evaluation Request (PER) 297-0042 was generated. The calculation justifies the use of 6900 gpm with 90 degree fahrenheit SSW inlet temperature to the RHR heat exchanger. Licensing Document Change Notice (LDCN) LDCN-FSAR-97-008 was generated to correct the FSAR to reflect the results of the calculation.

The FSAR (Table 9.2-5) is being modified to show the total system flow rate for each load. The SSW flow rates mentioned in the containment analysis will also be clarified. In addition, the difference between the flow rates assumed in the containment analysis and the minimum required flow rates for adequate heat removal, as shown in the flow balance procedures, will be clarified.

The FSAR will be revised in the next revision to the FSAR (Amendment 52).

Generic Implication:

We are currently in the process of reviewing and updating the FSAR. This effort consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70.

As noted in our response to item 96-201-16, an Engineering self assessment team will address the adequacy of our calculation process to maintain the FSAR current.

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Status: Open
Scheduled Completion Date: August 31, 1997

2. "Failure to update the FSAR to reflect a plant design change pertaining to the Automatic Depressurization System (ADS) seal-in logic (Report Section E2.2.3.2)." [URI: Example 2 of 5]

Specific Concern: Discrepancy Between FSAR and Plant Configuration

This item pertained to an observation that two ADS logic seal-in contacts did not appear to be implemented as shown on an FSAR functional control diagram.

In response to this item PER 296-0857 was generated and a design change to correct the wiring error will be implemented during the next Refueling and Maintenance Outage (R-13), currently scheduled for Spring 1998.

D The scope of the design change consists of adding seal-in circuits such that, when ADS is manually initiated, the ADS function will go to completion. When the change is implemented, ADS system design pertaining to manual initiation seal-in logic will be in compliance with the FSAR.

Generic Implication:

None

Status: Open
Scheduled Completion Date: August 15, 1998

3. "Failure to update the FSAR regarding the Standby Service Water (SSW) System keepfull pumps (Report Section E2.3.1.2)." [URI: Example 3 of 5]

Specific Concern: Failure to Update the FSAR

C This item, previously identified by the Supply System, pertained to an observation where the FSAR had not been updated to reflect the de-activation of the SSW Keepfull Subsystem.

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An LDCN (LDCN-FSAR-96-092) had been previously prepared and the FSAR will be changed to reflect that the SSW Keepfull Subsystem has been deactivated and spared in place. This change will be incorporated into the next revision to the FSAR (Amendment 52).

Generic Implication:

We are currently in the process of reviewing and updating the FSAR. This effort consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70.

Status: Open

Scheduled Completion Date: August 31, 1997

4. **"Inconsistencies between the SSW flow balance test acceptance criteria and the FSAR licensing basis values (Report Section E2.3.1.2)." [URI: Example 4 of 5]**

Specific Concern: Failure to Update the FSAR

This item pertained to an observation of an inconsistency between an FSAR table flow rate for SSW and the text description that the table made a distinction for design water temperatures (which it did not).

In response to this item, LDCN-FSAR-97-008 was generated to revise the FSAR table to clarify the wording regarding the design water temperatures.

The FSAR (Table 9.2-5) will be changed to show the total system flow rate for each SSW load. The Ultimate Heat Sink (UHS) calculation uses the heat loads, for each SSW load, and the flow rate is implied in the heat load. Therefore, listing the flow rate for each SSW load assumed for the UHS analysis is redundant information. The UHS loads are currently listed in FSAR Table 9.2-8.

The FSAR will be revised in the next revision to the FSAR (Amendment 52).



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Generic Implication:

We are currently in the process of reviewing and updating the FSAR. This effort consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70.

Status: Open

Scheduled Completion Date: August 31, 1997

5. "Inconsistencies between FSAR electrical distribution loads and associated calculations (Report Section E2.5.1.2)." [URI: Example 5 of 5]

Specific Concern: Failure to Update the FSAR

This item pertained to observations that FSAR electrical control power loads were incorrectly referenced, the electrical grid voltage schedule was incorrect, and that the battery load profile did not address all DC relay loads for the systems reviewed.

In response to this item, LDCN-FSAR-97-000, LDCN-FSAR-97-019 and LDCN-FSAR-97-035 were generated to correct the FSAR discrepancies. Calculation E/I-02-94-02 is being developed to address all DC electrical loads.

This change will be incorporated into the next revision to the FSAR (Amendment 52).

Generic Implication:

We are currently in the process of reviewing and updating the FSAR. This effort consists of verifying the technical accuracy of statements, consolidating information to improve accessibility and enhance maintainability, and ensuring that the FSAR contains the necessary information consistent with Regulatory Guide 1.70.

Status: Open

Scheduled Completion Date (FSAR): August 31, 1997

Scheduled Completion Date (CALC): March 31, 1998



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96-201-03 "Design Requirements Document (DRD) did not identify the RHR backup source of power (Report Section E2.1.2.2)." [IFI]

Specific Concern: Inaccurate Design Requirements Documents

This item pertained to observations that the RHR DRD did not list the backup source of power for pump motors. As noted in the inspection report, this correction to the RHR DRD is being tracked to completion.

In response to this item, the DRDs will be reviewed and revised, as necessary, as part of the ongoing DRD review effort, currently scheduled for completion during calendar year 1998.

Generic Implication:

The WNP-2 Design Requirements Documents were developed and intended to be used as "roadmaps" to the design requirements and associated documents applicable to the system or specialty area of review. Each DRD summarizes previously documented design basis information and, therefore, inaccurate details within the DRDs had not been treated with the degree of rigor associated with the primary design control documents.

Nevertheless, the DRDs are viewed as an important means of guiding engineers to appropriate documents which are germane to their system or topical specialty. It is intended that these DRDs will be a useful and efficient "institutionalized memory" throughout the lifetime of the plant for design information. Inaccuracies and omissions are treated as important items of concern in achieving the end-objective of these documents.

As a result of this finding and the results of previous self improvement initiatives, we are having our system engineers review their respective DRDs for inaccuracies. In addition, we will be reestablishing our standard for the desired content of the DRDs. Finally, following development of the DRD standard, the existing DRDs will be reviewed against the standard and missing information will be incorporated.

Status: Open

Scheduled Completion Date (System Engineer Review): December 31, 1998

Scheduled Completion Date (Standard Review): December 31, 1998

Scheduled Completion Date (DRD Followup): December 31, 1999



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96-201-04 "Plant Procedure (PPM) 4.7.1.9 did not reflect the plant response to an under-voltage condition, SM-8 (Report Section E2.1.2.2)." [IFI]

Specific Concern: Less than Adequate Procedure

This item pertained to an observation that PPM 4.7.1.9, "Loss of Power to SM-8," did not reflect actual plant response in that tripping of RHR pumps RHR-P-2B and RHR-P-2C would occur during an undervoltage trip on SM-8. This was not described in the procedure.

In response to this item, PPM 4.7.1.9 was revised to add RHR-P-2B and RHR-P-2C to the list of breakers and equipment that trip on SM-8 undervoltage. In addition, PPM 4.7.1.8, "Loss of Power to SM-7," was revised to add LPCS-P-1 and RHR-P-2A to the list of breakers and equipment that trip on SM-7 undervoltage.

With these corrections, the procedures now adequately reflect the plant response to undervoltage conditions on SM-7 and SM-8.

Generic Implication:

None

Status: Closed

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96-201-05 "The RHR DRD did not discuss I&C requirements and their implementation (Report Section E2.1.3.2)." [IFI]

Specific Concern: Inaccurate Design Requirements Document

This item pertained to an observation that the RHR DRD stated that the containment spray mode is capable of being operated from the Remote Shutdown Panel. However, only RHR-V-16B is capable of being operated from the Remote Shutdown Panel (control of RHR-V-17B is also necessary to initiate drywell sprays). Operation of the containment spray mode is not a required remote shutdown function.

In response to this item, PER 297-0044 was generated to correct the DRD description of the use of containment sprays. The DRDs will be revised as necessary as part of the ongoing DRD review effort, currently scheduled for completion during calendar year 1998.

Generic Implication:

The WNP-2 Design Requirements Documents were developed and intended to be used as "roadmaps" to the design requirements and associated documents applicable to the system or specialty area of review. Each DRD summarizes previously documented design basis information and, therefore, inaccurate details within the DRDs had not been treated with the degree of rigor associated with the primary design control documents.

Nevertheless, the DRDs are viewed as an important means of guiding engineers to appropriate documents which are germane to their system or topical specialty. It is intended that these DRDs will be a useful and efficient "institutionalized memory" throughout the lifetime of the plant for design information. Inaccuracies and omissions are treated as important items of concern in achieving the end-objective of these documents.

As a result of this finding and the results of previous self improvement initiatives, we are having our system engineers review their respective DRDs for inaccuracies. In addition, we will be reestablishing our standard for the desired content of the DRDs. Finally, following development of the DRD standard, the existing DRDs will be reviewed against the standard and missing information will be incorporated.

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Status: Open

Scheduled Completion Date (System Engineer Review): December 31, 1998

Scheduled Completion Date (Standard Review): December 31, 1998

Scheduled Completion Date (DRD Followup): December 31, 1999

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96-201-06 "NRC to verify that Appendix R alternate shutdown activities for RHR valves are accomplished from the remote shutdown panel and not the alternate remote shutdown panel (Report Section E2.1.3.2)." [IFI]

Specific Concern: Compliance with Remote Shutdown Requirements

This concern was identified during an inspection followup telephone conversation on March 10, 1997.

At WNP-2, a licensing basis fire in the Main Control Room requires evacuation and subsequent plant shutdown using remote shutdown equipment at local control areas. For the Main Control Room evacuation scenario, Division 2 RHR equipment is the fire-protected source of initial and long-term core and suppression pool cooling. The RHR, Division 2, equipment control and status displays are located on the Remote Shutdown Panel.

The accomplishment of shutdown activities relating to the control of RHR system pumps and valves, for the Main Control Room evacuation scenario, does not depend upon equipment located on the Alternate Remote Shutdown Panel.

Generic Implication:

None

Status: Closed

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96-201-07 **"The differential design pressure for the ADS actuator was not adequately analyzed for low containment pressure (Report Section E2.2.1.2)." [URI]**

Specific Concern: ADS not Analyzed for Certain Design Basis Conditions

This item consisted of several questions pertaining to the adequacy of the differential pressure design ratings for ADS solenoid valve actuators as a result of drywell temperature changes under LOCA temperature conditions and non-design basis actuation of containment sprays.

This is an event of low probability and pertains to a concern that a new, not previously required, set of design conditions would lead to exceeding ADS actuator design pressure. The condition would result in a slight increase over design pressure.

An ADS main steam safety relief valve actuator design evaluation is currently in process. This effort has involved the actuator vendor and includes a review of the actuator as well as system design pressure, procedures and calculations.

Appropriate changes to design documentation will be made as determined necessary by the evaluation.

Generic Implication:

None

Status: Open

Scheduled Completion Date: October 15, 1997



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96-201-08 "Incomplete documentation for main steam relief valve quencher support and tail pipe support design (Report Section E2.2.1.2)." [IFI]

Specific Concern: Lack of Documentation for Design

This item pertained to a concern with the design basis calculation for main steam relief valve quencher support and verifying allowable values.

The inspection team requested the source of the design stress used by Calculation NE-02-89-18, "Minimum SRV Re-opening Pressure and SRV Tail Pipe Level Limit to Support EOPs," for the quencher and tail pipe supports. A subsequent search determined that it could not be retrieved.

In response to this item, three Calculation Modification Records (CMRs) were subsequently generated to reassess margins in the historical structural calculations. The piping-to-quencher support load was determined using a detailed piping support model. The resulting loads were evaluated using a new quencher support tower frame and baseplate model.

The minimum faulted support margin has increased from three percent to 13 percent. These calculations need to be verified prior to issuance of the CMRs.

Generic Implication:

None

Status: Open

Scheduled Completion Date: September 17, 1997



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**96-201-09 "DRD discrepancy in identifying ADS valves (Report Section E2.2.3.2)."
[IFT]**

Specific Concern: Inaccurate Design Requirements Document

This item pertained to an error in the DRD for the ADS System. The DRD incorrectly stated that Main Steam (MS) System relief valves MS-RV-2A, MS-RV-2C, and MS-RV-3B could be opened from the Alternate Remote Shutdown Panel. The correct valves are MS-RV-3D, MS-RV-5B and MS-RV-5C.

In response to this item, PER 297-0044 was generated to correct the DRD description of the ADS valves. This PER identifies that a design change provided controls from the Alternate Remote Shutdown Panel to three ADS valves rather than three non-ADS valves. Figure 2.6-2 in the DRD contains a note which identifies which valves can be controlled from the panel. However, the design change failed to identify the need to revise DRD-307, "Main Steam System," to reflect the correct valves. The DRD is currently in the process of being revised.

Generic Implication:

The WNP-2 Design Requirements Documents were developed and intended to be used as "roadmaps" to the design requirements and associated documents applicable to the system or specialty area of review. Each DRD summarizes previously documented design basis information and, therefore, inaccurate details within the DRDs had not been treated with the degree of rigor associated with the primary design control documents.

Nevertheless, the DRDs are viewed as an important means of guiding engineers to appropriate documents which are germane to their system or topical specialty. It is intended that these DRDs will be a useful and efficient "institutionalized memory" throughout the lifetime of the plant for design information. Inaccuracies and omissions are treated as important items of concern in achieving the end-objective of these documents.

As a result of this finding and the results of previous self improvement initiatives, we are having our system engineers review their respective DRDs for inaccuracies. In addition, we will be reestablishing our standard for the desired content of the DRDs. Finally, following development of the DRD standard, the existing DRDs will be reviewed against the standard and missing information will be incorporated.



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Status: Open

Scheduled Completion Date (System Engineer Review): December 31, 1998

Scheduled Completion Date (Standard Review): December 31, 1998

Scheduled Completion Date (DRD Followup): December 31, 1999

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96-201-10 "Failure to implement the requirements of Regulatory Guide 1.62 requirements for ADS manual initiate (Report Section E2.2.3.2)." [URI]

Specific Concern: Design not in Conformance with Requirements

This item pertained to an observation that two ADS logic seal-in contacts did not appear to be implemented as shown on an FSAR functional control diagram.

In response to this item, PER 296-0857 was generated and a design change to correct the wiring error will be implemented during the next Refueling and Maintenance Outage (R-13), currently scheduled for Spring 1998. The scope of the design change consists of adding seal-in circuits such that, when ADS is manually initiated, the ADS function will go to completion.

Generic Implication:

None

Status: Open

Scheduled Completion Date: August 15, 1998

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96-201-11 "Inadequate design documentation to demonstrate containment flooding capability (Report Section E2.3.1.2)." [IFI]

Specific Concern: Less than Adequate Design Documentation

This item pertained to the ability of the SSW System to flood the containment and still supply cooling water to required loads. This was addressed by a previous PER in 1990. However, closure documentation for the PER lacked sufficient detail to provide the rationale for acceptability of the SSW capability with regard to containment flooding.

In response to this item, a formal evaluation of the concern is currently in process. Included in the evaluation are assessments of pump runout and net positive suction head (NPSH) considerations. Based on engineering judgment, the SSW System would be able to provide cooling to the diesel generators while operating in the containment flooding mode.

Generic Implication:

None

Status: Open

Scheduled Completion Date: September 1, 1997



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96-201-12 "Immediate corrective action to implement corrosion monitoring of HPCS service water (Report Section E2.3.1.2)." [URI]

Specific Concern: Less than Adequate Corrective Action

This item pertained to an observation that the generic aspect of corrosion monitoring in the SSW System was not expanded to the High Pressure Core Spray (HPCS) System during the disposition of PER 295-1229. The portion of the SSW system that services the HPCS System is susceptible to the same corrosion mechanisms.

In response to this item, the resolution of PER 295-1229 was revised to include a discussion related to the potential for corrosion in the portion of the SSW System that services the HPCS System. The pipe wall thickness preventive maintenance program was also revised to include an inspection of the HPCS SSW System.

The Maintenance Work Order which is used to perform the ultrasonic (UT) measurements at various locations in the SSW System has been modified to include the HPCS SSW System.

Generic Implication:

None

Status: Closed

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96-201-13 "Licensee will redevelop calculation to identify potential cavitation areas in the SSW system (Report Section E2.3.1.2)." [IFI]

Specific Concern: Retrievability of Design Information

This item pertained to cavitation calculation ME-02-96-28, "Evaluation of Cavitation Potential in the SW System," that could not be located. The calculation was mis-filed and is available for NRC review.

The calculation had been performed to determine if the potential for cavitation existed in the SSW System. The evaluation was initiated by PER 295-1002 which described leakage through a very small hole initiated in the pipe interior that showed damage that was characteristic of cavitation.

It was determined from the calculation that a cavitation potential existed at flow elements SW-FE-1A and SW-FE-1B when the SSW System is operated in the spray bypass mode. To correct the problem, a design change was implemented that added an orifice to the outlet of the spray bypass piping. The orifice increased the back pressure on the flow elements in the bypass mode and eliminated the cavitation potential.

Generic Implication:

None

Status: Closed

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96-201-14 "Exclusion of the fuel pool heat exchanger and the control room emergency chiller from the SSW test lineup (Report Section E2.3.1.2)." [IFI]

Specific Concern: Less than Adequate Testing

This item pertained to an observation that Fuel Pool Cooling (FPC) System Heat Exchanger FPC-HX-1B and Control Room Emergency Chiller CCH-CU-1B were excluded from the SSW test lineup.

Procedure PPM 7.4.7.1.1.2, "Standby Service Water, Loop B, Valve Position Verification/Flow Balance," is used to demonstrate the operability of the SSW System (Loop B). However, all the safety related loads that are required to be cooled by SSW, Loop B, are included in the flow balance with the exception of Fuel Pool Cooling (FPC) System Heat Exchanger FPC-HX-1B.

Since the SSW is credited for being able to supply cooling water to FPC-HX-1B in an accident scenario, a hydraulic model was developed to estimate what impact valving in FPC-HX-1B would have on the flow balance for the SW Loop B components during an accident. Calculation ME-02-95-25, "Evaluation of Standby Service Water Capability," indicates that there is adequate margin for the remainder of the components cooled by SW Loop B when FPC-HX-1B is valved into service.

The inspection team considered that it would be more conservative to perform the flow balance using Control Room Emergency Chiller CCH-CU-1B rather than Control Room Emergency Chiller WMA-CC-51B because it requires more flow than WMA-CC-51B.

The flow balance is currently performed with SSW flow aligned to WMA-CC-51B instead of CCH-CU-1B primarily because WMA-CC-51B is required for Control Room operability, while CCH-CU-1B is required for Control Room habitability. The difference in flow rate is 40 gpm. The total SSW System flow rate is approximately 10,000 gpm. Valving in CCH-CU-1B during a design basis accident should have negligible impact on the flow balance of the SSW System, and the system has adequate capability to supply this additional load.



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Test procedure PPM 8.4.81, "SSW System Performance with FPC Heat Exchanger Valved In," is being prepared to test the effects on the flow balance when valving in FPC-HX-1B and CCH-CU-1B. The test is currently scheduled to be performed in September 1997.

Generic Implication:

None

Status: Open

Scheduled Completion Date: October 31, 1997



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96-201-15 "Use of the FSAR instead of source calculations to set the battery profile for the load test (Report Section E2.5.1.2)." [IFI]

Specific Concern: Use of FSAR as a Design Input Document

This item pertained to a question of the process used to update field test personnel when the DC load calculation is revised and an observation that the FSAR was not listed as an output document.

In response to this item, field personnel use the FSAR table to set the battery profile for the load test. The FSAR is updated whenever the DC load calculation changes. FSAR tables (duty profiles) were added as output documents to calculation 2.05.01.

Management expectations were reinforced pertaining to the use of the FSAR as a calculation output document.

Generic Implication:

None

Status: Closed

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96-201-16 "Did not meet the guidance of Engineering Directorate Manual 2.15 concerning outstanding CMRs (Report Section E2.5.1.2)." [URI]

Specific Concern:

This item pertained to an observation that certain calculations had several more outstanding change notices than allowed by procedure.

Engineering procedure EDP 2.15, "Preparation, Verification and Approval of Calculations," requires that no more than five changes can be outstanding against a calculation before the calculation must be revised, unless authorized by the responsible manager/supervisor. The NRC inspection team identified three calculations that exceeded the five Calculation Modification Record (CMR) limit.

Our approach to this problem has been two-fold. In the near term, Engineering management has reemphasized expectations to supervisors and personnel as follows:

- Management will not accept any new CMRs on calculations which already have five changes against them, unless an individual assignment to a responsible engineer is made and a due date established on the Plant Tracking Log to revise the calculation.
- New changes should identify the number of CMRs against the calculation and include a statement that all of the outstanding CMRs have been reviewed for adverse impact and that none exists.

In the long term, we have established a team of Engineering personnel to perform a self-assessment on our calculation process and controls. Included in this self-assessment will be benchmarking our program with the industry; a review of the overall adequacy of our program for controlling and revising calculations; and a review of existing guidance and direction in maintaining the relationship between calculations/CMRs with the licensing basis documents. Following the self-assessment, recommendations for improvements will be made as necessary.

Generic Implication:

None

Status: Open

Scheduled Completion Date: October 15, 1997