



WASHINGTON PUBLIC POWER SUPPLY SYSTEM

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100-115-1110-04

January 11, 1993  
G02-93-009

Docket No. 50-397

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, D. C. 20555

Gentlemen:

Subject: WNP-2, OPERATING LICENSE NO. NPF-21  
NRC INSPECTION REPORT 92-25  
AMENDED RESPONSE TO NOTICE OF VIOLATION

The Washington Public Power Supply System hereby provides an amended reply to the Notice of Violations contained in your letter dated October 7, 1992. Our reply, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, consists of this letter and Appendix A (attached). This amended response provides trend information, and clarifies certain event descriptions, and corrective actions taken and to be taken per discussions with Mr. Paul Narbut of your staff on December 11, 1992.

In Appendix A, the violations are addressed with an explanation of our position regarding validity, corrective action and date of full compliance.

Your letter transmitting the Inspection Report requested a description of the short term actions taken to clarify management's policy to Supply System personnel regarding procedural adherence. The following describes the corrective actions taken to date.

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Short term corrective actions have been implemented to reinforce the Supply System policy on procedural adherence. This policy has been more explicitly defined in the Use of Controlled Plant Procedures and the Conduct of Maintenance procedure. The Deputy Managing Director defined the Standards of Performance for procedural compliance in a memo to Senior Management personnel in July 1992. This memo further directs management at all levels to discuss the performance standards with their personnel. The Assistant Managing Director of Operations (AMDO) expectations, communicated in a memo entitled "Call Time Out," are that personnel are to stop work to resolve questions and/or difficulties regarding execution of a procedure. The Deputy Managing Director has reiterated management expectations in employee meetings in September 1992 and explained the absolute necessity for procedure compliance. On October 28, 1992, the Plant Manager held a special staff meeting with Plant managers and supervisors to communicate his expectations for strict procedural compliance. Per direction from the Plant Manager, the Plant managers and supervisors have held similar staff meetings to communicate these management expectations to their subordinates. Included in this discussion was the accountability of the employee and his Supervisor for strict procedural compliance and a review of our discipline policy for violation of our expectations. The Plant Manager has directed Plant personnel to initiate a Problem Evaluation Request (PER) for each occurrence of a procedural non-compliance. A Quality Action Team (QAT) on Standards and Expectations was commissioned in August 1992, to establish a set of standards and expectations that will apply to all Supply System employees. This new standard contains clear expectations on procedural compliance.

Strict adherence to procedures is the Supply System standard to operate and maintain WNP-2 safely and efficiently. Plant personnel are directed that if an activity requiring a procedure cannot be performed due to a lack of an existing procedure or an inadequate procedure, do not proceed with the task. All employees are expected to implement this standard into their activities. The Supply System management is committed to this standard and will continually emphasize the need for procedural compliance. This emphasis includes "self-checking" training of Plant personnel on a continuing basis. Egregious violations or instances of individual non-compliance will be evaluated with disciplinary actions taken where appropriate. In cases of serious violations or repeat occurrences, the degree of supervisory culpability will also be assessed, with appropriate actions administered.



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The discipline cited in these NOV responses were typically verbal counseling. Recent cases where there were failures of strict procedural compliance were dealt with more aggressively. Disciplinary action taken in association with the core power oscillation event demonstrates management commitment to holding personnel at all levels of the organization accountable for their actions.

Sincerely,

*J. V. Parrish*

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

REF/bk

Attachments

cc: JB Martin - NRC RV  
NS Reynolds - Winston & Strawn  
JW Clifford - NRR

NRC Site Inspector - 901A  
DL Williams - BPA/399



## APPENDIX A

During an NRC inspection conducted on July 13 through August 14, 1992, five violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1992), the violations are listed below:

- A. Criterion XI of 10 CFR Part 50, Appendix B, "Test Control," states in part that: "A test program shall be established to assure that all satisfactorily in service...is performed in accordance with written test instructions..."

Administrative Procedure PPM 1.3.7, "Maintenance Work Request," Revision 12, Section 1.3.7.12, requires post maintenance and post modification test instructions to be specified on a Maintenance Work Request (MWR) and Section 1.3.7.14 requires that MWR test instructions be performed.

Maintenance Work Request (MWR) AR4743 (steps 12-15) provided post maintenance test instructions for a replaced Reactor Core Isolation Cooling (RCIC) system transfer switch (RCIC-RMS-RSTS52) to demonstrate that the new switch would perform satisfactorily in service. Steps 12-15 required manipulation of the switch and verification that the proper system responses were obtained.

Contrary to the above, test steps 12-15 in MWR AR4743 were not performed, and the RCIC system was declared operable on July 11, 1992.

This is a Severity Level IV violation (Supplement I).

### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause of this event was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

The Plant procedure for MWRs provides a mechanism for the Operations Department to track MWRs currently being worked. This mechanism consists of providing Operations (in the main Control Room) with a pink copy of each MWR approved to be worked. The pink copy file in the Control Room (CR) represents the actual work in progress in the Plant. Per procedure, this pink copy may be removed from the Control Room under two conditions: If the work is complete and the testing has been performed satisfactorily, or the work is going to be delayed (unplanned) for more than 24 hours. In the latter case, the procedure requires the Shift Manager (SM) to review the MWR package prior to removal of the pink copy. If the equipment is ready for Post-Maintenance Testing (PMT), the SM would be expected to retain the pink copy in the CR.

If maintenance is delayed, the SM may revoke the work release authorization at the request of a Maintenance supervisor. In doing this, the SM ensures the equipment is left in a satisfactory condition, and restores the pink copy to the MWR package. Any outstanding Clearance Orders against the system or component are the remaining barriers to inappropriately declaring the equipment operable.

RCIC was removed from service by standard Clearance Order procedures and with an entry in the Limiting Condition of Operation (LCO) CR log. The SM approved the release for the maintenance work to proceed and retained the pink copy of the MWR in the CR file.

The field work for the RCIC transfer switch had been completed on May 8, 1992. The associated Clearance Orders were removed on May 9, 1992 to allow the PMT. However, the PMT was deferred for several days because maintenance activities on the Main Steam (MS) System placed Clearance Order restraints on the RCIC System. This prevented the PMT from being performed. The pink copy was appropriately retained in the CR file at this time.

While retrieving other pink copies, a Maintenance supervisor inadvertently removed the pink copy of the MWR for the RCIC transfer switch from the CR on May 13, 1992. The Maintenance supervisors are urged by the Operations Department to remove the pink copies of MWRs that have been delayed for more than 24 hours to ensure the CR file accurately reflects work in progress in the Plant. Contrary to the MWR procedure, the pink copy was removed without review and approval by the SM.

Prior to removal of the pink copy, another barrier had been breached due to another procedural violation. In the normal process, the MWR package was closed out on May 8, 1992, as Field Work Complete (FWC). However, the package was misplaced and was not returned to the CR as required by the MWR procedure when it reaches FWC status. Had it been returned to the CR, the required testing may have been completed.

The MS Clearance Orders were removed June 29, 1992. With no record of outstanding testing requirements in the CR (i.e., the pink copy of the MWR or the MWR package), there were no barriers to declaring the RCIC System operable. Therefore, the RCIC System was considered operable for the July 4, 1992, startup from the refueling outage without performance of the required PMT.

A search of all Problem Evaluation Requests (PER) since 1988 (approximately 4500) identified 6 PERs where the PMT or a portion of the PMT was not performed prior to returning the equipment to operation. A review indicated that these incidents occurred primarily because of procedural noncompliance. No other documented instance was found where a PMT was not performed because the pink copy of the MWR was inadvertently removed and resulted in a system being inappropriately returned to operable status. This is considered an isolated instance.





The root cause, as noted, was personnel work practices were less than adequate. The MWR procedure was not followed with regard to removal of the pink copy of the MWR and failing to return the MWR package to the CR.

A contributing cause to this event was procedural instructional deficiencies regarding control of the MWR pink copies. An informal log was maintained in the CR documenting when the pink copy of an MWR was removed from the CR and who removed it. In this case, the log sheet had been completed properly. The log did not require documenting the reason for removal of the pink copy nor did it require a status of the equipment at the time the copy was removed. This information could have prevented Operations from declaring the RCIC System operable until the required testing was performed..

#### Corrective Steps Taken/Results Achieved

1. This event has been discussed with the individual responsible for the non-compliance of the MWR procedure. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. The log practices for removal of the pink copy of an MWR from the CR were changed to require documentation of the reason for removal of the copy and to provide a status of the affected equipment. Shift Manager approval is also required to remove the pink copy. This process provides the added barrier that if the pink copy is inadvertently removed or misplaced, the SM's signature would be missing from the log sheet, prompting further investigation as to the status of the equipment.
3. The log sheet for the pink copy of the MWR has been proceduralized.
4. The SM's duties regarding the pink copy of the MWR have been clarified in Section 11.4 of Plant procedure PPM 1.3.7.

#### Corrective Action to be Taken

All appropriate Plant and contractor personnel will be made aware of the changes to Section 11.4 of PPM 1.3.7 and the necessity for the changes by January 22, 1993.

#### Date of Full Compliance

WNP-2 was in full compliance when the required testing was satisfactorily performed on the RCIC System on August 1, 1992. The transfer switch operated as designed, and was therefore operable during the period the RCIC System was considered operable without performance of the PMT.



- B. Criterion XI of 10 CFR Part 50, Appendix B, "Test Control," requires in part that: "A test program shall be established to assure that all testing required to demonstrate that...components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits...."

Administrative Procedure PPM 1.3.7, "Maintenance Work Request, Revision 12, Section 1.3.7.12, requires post maintenance and post modification test instructions to be specified on a Maintenance Work Request (MWR) and Section 1.3.7.14 requires that MWR test instructions be performed.

Maintenance work request AR8673 provided test instructions for a modification to Reactor Core Isolation Cooling (RCIC) system control power supplies. Prerequisite 1 specified the acceptance limits for the RCIC system power supply output voltage to be  $24 \pm 1$  volts DC. Steps 19 and 20 of the MWR specified the voltage acceptance limits at six system locations to be  $48 \pm 2$  volts DC.

Contrary to the above, on June 19, 1992, the acceptance limits for prerequisite 1 were not met in that voltage was recorded as 26.17 volts DC; on June 27, 1992, the acceptance limits of steps 19 and 20 were not met in that voltages were recorded as 52.6, 52.3, 50.9, 50.7, and 50.5 volts DC.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause of this event was personnel work practices by several Contractor supervisors were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

Contractor personnel measured and recorded the above described voltages twice: first as a prerequisite requirement on June 19, 1992, and second for post-modification testing on June 27, 1992. In both cases, the Contractor foreman recognized the measured values were not within the acceptance limits provided in the MWR and brought it to the attention of the System Engineer and Contractor supervision. Each time, the System Engineer indicated the measured values were acceptable, and that the Contractor was to revise the affected work instructions. Contrary to the MWR procedure PPM 1.3.7, the Contractor supervisor present at the time instructed the Contractor foreman to proceed with the work, without revising the affected work instructions. Upon completion of the work instructions, the Contractor foreman's supervisor signed the MWR as field work complete on June 30, 1992, indicating that all work was performed within accepted limits. As a result, the work was performed contrary to PPM 1.3.7 which requires satisfactory completion of the work instructions.



Based upon concerns raised by the NRC, the System Engineer reviewed the subject MWR and found the voltage checks for the 48 VDC power supply for the RCIC Turbine Governor to be outside of the specified limits. The discrepancy was documented on a Problem Evaluation Request (PER) on August 11, 1992. The measured voltages were determined acceptable and the equipment was determined operable.

The root cause analysis determined the root cause was personnel work practices. Three Contractor supervisors were involved in the performance and/or review of the MWR. Two of the supervisors had received detailed training of the MWR procedure PPM 1.3.7 in 1991 following a major revision. Although the third supervisor had not received the detailed training, he was aware of the requirements to satisfactorily complete procedure steps before proceeding to the next one. Training is not considered to be contributory. There may have been perceived schedule pressures at the time to complete the job and accept the MWR packages which overrode the sense to follow the procedures.

#### Corrective Steps Taken/Results Achieved

1. This incident was discussed with the personnel involved in the non-compliance of the MWR procedure. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. Supply System management transmitted a letter to the Contractor management emphasizing that procedural compliance is mandatory.
3. Training seminars developed by the Supply System on procedural compliance and on PPM 1.2.3, Use of Controlled Plant Procedures, were used in Contractor training sessions to employees. The individual Contractors are responsible for training their employees to Supply System procedures. It is Supply System and Contractor management's expectations that personnel are familiar with the portions of the procedure they are using and to comply with the procedure. Training of all Contractor employees on procedural compliance and PPM 1.2.3 has been completed.

#### Corrective Action to be Taken

No further corrective actions were identified.

#### Date of Full Compliance

WNP-2 was in full compliance when the as-measured power supply voltages were determined acceptable on August 11, 1992.



- C. Technical Specification 6.8.1 states that: "Written procedures shall be established, implemented and maintained covering...applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978...." Appendix A of Regulatory Guide 1.33 specifies procedures for temporary changes, procedure adherence, surveillance tests and performing maintenance.

Procedure PPM 1.2.3, "Use of Controlled Plant Procedures," Revision 17, dated November 14, 1991, required in part: "Any person performing a task for which there is a procedure is responsible for doing the job as described by the procedure. When a procedure is unable to be performed as approved...a procedure deviation shall be initiated to allow the procedure to be performed."

Contrary to the above, established procedures were not implemented on three separate occasions:

- (1) Annunciator Response Procedure No. 4.601.A2, Revision 4 requires in part, that in response to an RHR pump B discharge pressure high/low alarm, the operator confirm that valve RHR-V-16B was closed.

Procedure PPM 1.2.2, "Plant Procedure Preparation," includes in the definition of the term "confirm," "...an implied requirement to take corrective action if the identified conditions do not exist."

Contrary to the above, during the performance of "RHR Loop B Operability Test," Procedure PPM 7.4.5.1.9, on July 16, 1992, the operator, in response to an RHR pump B discharge pressure low alarm, failed to confirm that RHR-V-16B was closed. The valve was open and remained open for several hours.

- (2) Inservice Test Procedure PPM 7.4.6.3.3, "CSP and CEP Containment Isolation Valve Operability," erroneously stated in part that "stroke time measurement terminates when the corresponding position indicating light becomes lit." Accepted industry practice terminates stroke time measurement, for dual position indication valves, after the corresponding position indication becomes lit and the opposite indication becomes unlit.

Contrary to the above, during performance of Procedure PPM 7.4.6.3.3, on August 12, 1992, the operator did not perform the test as described by the approved Procedure PPM 7.4.6.3.3 nor did the operator initiate a procedure deviation to allow the procedure to be performed correctly. The operator measured the stroke time test per the accepted industry practice.

- (3) Standby Service Water heat exchanger test Procedure PPM 8.4.70, "Thermal Performance Testing of PRA-FC-1A and PRA-FC-1B," Section 7, required that a clamp-on ultrasonic flow meter be installed.





Contrary to the above, on July 29, 1992, the technician performing Procedure PPM 8.4.70 failed to install a clamp-on ultrasonic flow meter.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of the violation. A root cause common to the three incidents described above was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

The first incident occurred while performing a quarterly surveillance on the Residual Heat Removal (RHR) Loop B. The surveillance required the lower Drywell spray outboard isolation valve, RHR-V-16B, to be opened. When the valve was opened by the Reactor Operator (RO); a system low pressure alarm annunciated. A failure of the affected RHR loop can result due to water hammer if the system is actuated with a low pressure condition in the RHR piping. The annunciator response procedure required the RO to confirm that RHR-V-16B and other listed valves were closed. Based on previous experience, the RO knew that a low pressure condition would occur during this evolution. The line between RHR-V-16B and the inboard isolation valve RHR-V-17B had been previously drained prior to opening RHR-V-17B to prevent contaminated water from spraying in the Drywell. Upon opening the RHR-V-16B, the flow rate into the drained section of RHR piping exceeds the capability of the keep fill pump, RHR-P-3, and a low pressure alarm occurs. The ROs expected this condition to occur during performance of the surveillances for the containment isolation spray valves. Believing it would not be a sustained low pressure condition, the RO did not follow the annunciator response procedure, and as a result, the RHR-V-16B remained open for several hours. The pressure in the system was restored with the operating keep fill pump, RHR-P-3, within a few minutes and the RO reset the annunciator alarm.

The root cause of this incident was that the RO failed to correctly follow Plant procedures. The valve should have been closed and a PER initiated to document the abnormal condition.

The low pressure condition also occurs on RHR Loop A during performance of a similar surveillance procedure. The practice of leaving the outboard isolation valve open in response to the low pressure condition during performance of this procedure had been accepted practice. A contributing cause to this event was management methods in that procedure compliance was not adequately enforced at the CR supervisory level. This condition was recognized as a chronic problem, but no action was taken to enforce management policy by either performing the tasks required by the annunciator response procedures or changing the procedures to allow the appropriate actions to be taken. The surveillance procedure did not provide a caution of possible occurrence of this condition, nor did it provide steps to preclude its occurrence. Another contributing cause to this incident was inadequate instructional provisions in the procedures to warn of or preclude the possible low pressure condition.



The second incident occurred during the performance of the quarterly surveillance for the Containment Supply Purge (CSP) and the Containment Exhaust Purge (CEP) System Containment Isolation Valve Operability. The procedure stated that the stroke time measurement terminates when the corresponding position indicating light illuminates. The correct method for stroke time measurement of dual position indication valves is to initiate time measurement when the control switch is turned to either open or close. Time measurement is terminated when the indicating light opposite to the direction of travel extinguishes. The RO performing the test recognized the error in the procedure, stroked the valves in question using the correct method and recorded this data. This was not in accordance with the procedure. Consequently, the RO failed to follow procedure. The test should have been stopped and the procedure should have been revised or deviated in accordance with established Plant procedures. In addition, a PER should have been written to address a possible generic problem with ASME valve In-service Test (IST) surveillance procedures.

The first root cause of this incident was that the work practices of the RO were less than adequate because the Plant procedures were not followed correctly. The second root cause of this incident was omission of relevant information in the surveillance procedure. If the proper directions had been included in the procedure, the RO would not have violated Plant procedures.

The difference between the procedure instruction and the correct method for stroke time measurement has been a chronic problem. The accepted practice has been to use the correct method contrary to the procedure direction. Consequently, a contributing cause to the event was management method in that procedure compliance was not adequately enforced at the CR supervisory level.

If the stroke time measurements were obtained per the incorrect procedure instructions, the stroke times would have been a fraction of a second. This would have been outside the acceptance criteria and would have resulted in corrective actions. The ROs are trained to the correct method of stroke time testing. Based on this, the previous test results are considered acceptable and the affected valves are considered to have satisfied their operability requirements.

The third incident occurred during performance of the Thermal Performance Testing of the Standby Service Water (SW) Pump House Return Air (PRA) heat exchanger. The test procedure required that an ultrasonic flow meter be installed to provide backup data to a permanently installed flow sensor in the system. This procedure is used to gather trending information on the heat exchangers. The Supply System technician installed the flow meter as required by the procedure, but the data were invalid because of the location. The flow meter was removed with the intention of reinstalling it in another location on the piping. However, the test proceeded without the flow meter being reinstalled. The root cause of this incident was personnel error in that the procedures were not followed correctly.



Corrective Steps Taken/Results Achieved

1. The above described incidents were reviewed with the personnel involved in the non-compliance of the respective procedures. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. The appropriate Plant procedures were changed to provide the instructions for appropriate RO response to the nonstandard conditions experienced in the above described incidents.
3. Directions were provided in the CR Night Orders that procedure compliance is mandatory.
4. All CR operating crews and supervision have been trained regarding mandatory procedure compliance. The training emphasized that unauthorized departure from a Plant procedure is forbidden, especially in response to a recurring problem, even though the reasons for the problem are well understood. If difficulties are encountered while performing a procedure, it is management's expectations that performance of the procedure should be suspended, the Plant placed in a safe condition, and the conditions evaluated and appropriately resolved.
5. Engineering and Plant Technical personnel have also received training on procedural compliance.
6. As indicated in the cover letter, egregious violations or instances of individual non-compliance will be evaluated with disciplinary actions taken where appropriate. Supervisory culpability will also be assessed.
7. With regard to the first incident, the appropriate RHR surveillance procedures have been changed to preclude occurrence of the system low pressure condition experienced when the lower DW spray outboard isolation valve was opened.
8. The surveillance procedure for the CSP and CEP isolation valves have been changed to include the proper stroke time measurement method information to preclude recurrence of the second incident. In addition, all twenty-three ASME valve IST surveillance procedures have been changed to reflect the proper stroke time measurement methodology for dual position indication valves.
9. The test procedure described in the third incident was changed to remove the requirement to use the ultrasonic flow meter.

Corrective Action to be Taken

No further corrective actions were identified.



Date of Full Compliance

WNP-2 will be in full compliance when the ASME valve IST surveillance procedures are changed by November 30, 1992.

- D. Technical Specification 6.8.1 states that: "Written procedures shall be established, implemented and maintained covering...applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978...." Appendix A of Regulatory Guide 1.33 specifies procedures for temporary changes, procedure adherence, surveillance tests and performing maintenance.

Contrary to the above, applicable procedures were not implemented on several occasions. Two examples are detailed below:

- (1) Administrative Procedure PPM 1.3.7, "Maintenance Work Request, Revision 12, Section 4, requires in part that "The MWR [maintenance work request] is the document used to initiate and record maintenance activities or to implement and record Plant Modifications." Section 1.3.7.14 requires that MWR test instructions be performed.

MWR AR5692, for 250 volt DC battery replacement, step H, required that battery condition data be recorded; steps L and M required recording additional battery data every 24 hours for 94 hours.

Contrary to the above, on May 4, 1992, data was not recorded in MWR AR5692 as directed by step H; the data directed by step L and M was recorded on May 5 and 6, 1992 only, a period of less than 94 hours.

- (2) Procedure PPM 1.2.3, "Use of Controlled Plant Procedures," Revision 17, dated November 14, 1991, required in part: "Any person performing a task for which there is a procedure is responsible for doing the job as described by the procedure.

Administrative Procedure PPM 1.5.1, "Technical Specification Surveillance Testing Program," Revision 26, dated February 6, 1991, Section 1.5.1.4.C, states that "Prerequisites...are required to have a signature blank for...verifying compliance with the prerequisite."

Contrary to the above, as of August 14, 1992, Procedure PPM 7.4.7.3.3B, "RCIC Quarterly Operability Test," Prerequisite 3.1, which required the reactor to be between 920 psig and 1020 psig, had no signature blank for verifying compliance with the prerequisite.





Contrary to the above, as of August 14, 1992, Procedure PPM 7.4.3.7.5.18, "Accident Monitoring Instrumentation RCIC Flow Indication CC," Prerequisite 3.4, which required the shift manager to verify that RCIC system testing would not be affected by the operability status of any ECCS system, had no signature blank for verifying compliance with the prerequisite.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of this violation. A root cause common to the examples described above was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

In the first example, the subject MWR provided for replacement of the 250 Volt DC station battery. Following replacement, Step H of the MWR work instructions required that battery data be recorded marking the end of a minimum 24 hour stabilization charge. The data were recorded on May 6, 1992, but on the wrong data sheet. The data sheet was included in the MWR package. Steps L and M of the work instructions required that battery data be recorded once every 24 hours for 94 hours following completion of the stabilization charge and initiation of the equalization charge. These data were recorded on two data sheets, but had been filed separately from the MWR package. The data were poorly recorded but were evaluated to have satisfied the intended requirements of the work instructions. The 94-hour requirement was to satisfy vendor warranty requirements.

The root cause of this event was that personnel work practices were less than adequate, resulting in improper recording of data. Technical Specification surveillances performed on the battery after installation verified operability of the battery.

With regard to the second example of prerequisite signoff described above, the procedure writers had referred primarily to the guidance of Plant Procedure PPM 1.2.2, Plant Procedure Preparation. This procedure does not require the inclusion of a signoff space for prerequisites of surveillance procedures. The procedure writers were not aware of the prerequisite signoff requirement included in PPM 1.5.1. The root cause of this condition was personnel work practices were less than adequate.



Corrective Steps Taken/Results Achieved

1. PPM 1.2.3, "Use of Controlled Plant Procedures," was changed to more clearly define management's expectations that performance of all prerequisites is mandatory.
2. Based upon management's expectations that all prerequisites will be performed, the prerequisite signature requirement has been deleted from PPM 1.5.1.
3. A review of the PERs since 1989 did not reveal a trend of the procedure writers failing to follow PPM 1.5.1.

Corrective Action to be Taken

No further corrective actions were identified.

Date of Full Compliance

WNP-2 was in full compliance November 13, 1992, when PPM 1.5.1 was changed.

- E. Technical Specification 4.0.5 stated in part that "Inservice testing of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (CODE) and applicable Addenda."

Subarticle IWP-4120 of Division 1 of Section XI of the ASME Code stated that "The full-scale range of each instrument shall be three times the reference value or less."

Contrary to the above, as of August 12, 1992, Residual Heat Removal (RHR) surveillance procedure PPM 7.4.5.1.8, "RHR Loop A Operability Test," required (and completed quarterly test data sheets showed) measurements of the pump discharge pressure for pump RHR-P-2A by instrumentation with a full-scale range of 0-600 pounds per square inch gauge (psig). The reference value for this pump parameter was 138.3 psig, which requires a maximum scale range of 415 psig or less.

This is a Severity Level V violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The surveillance procedures allowed use of data obtained from the Transient Data Acquisition System (TDAS) or panel gauges when TDAS was unavailable. Evaluation of the accuracy of selected instruments on RHR Loops A, B, and C, the High Pressure Core Spray (HPCS) System and Reactor Core Isolation Cooling (RCIC) System determined that the panel gauges and the TDAS data did not satisfy the full-scale range requirements of the ASME Code. These instruments were included in the original design of the systems.

The first root cause for failing to satisfy the ASME Code accuracy requirements was a design deficiency of the affected systems. Appropriately ranged instruments were not provided with the systems to obtain operability test data within an acceptable accuracy. The second root cause of this condition was personnel work practices were less than adequate. The intended verification in the development and performance of the surveillance procedures was not performed to ensure the appropriate gauges were being used.

Corrective Steps Taken/Results Achieved

1. Current design review practices require a more thorough review to ensure ASME Code requirements are satisfied before new or modified equipment is accepted for use.
2. Further evaluation determined that TDAS data satisfied the technical accuracy requirements of the Code. A Basis for Continued Operation (BCO) was developed to demonstrate the acceptability of using TDAS data only to perform operability surveillances. The BCO determined that the loop accuracy of the TDAS measurement is 1% of full scale of the sensor versus 2% for the panel gauges. The lower TDAS accuracy error satisfies the ASME Code accuracy error requirements even though the sensors may not satisfy the full scale range requirements of the Code. The panel gauges are outside both the full scale range and accuracy requirements of the Code, and therefore, are not suitable for use in performing Technical Specification surveillances. The appropriate surveillance procedures have been changed to only allow the use of TDAS data where corresponding panel gauges do not satisfy the Code accuracy requirements. Where TDAS instruments are unavailable, appropriately ranged instruments will be used to perform the surveillance tests. In addition, the accuracy of instruments used in other Technical Specification surveillances were reviewed and found to be within the ASME Code acceptable values.
3. This response has been reviewed by personnel involved in preparing test procedures for the purpose of emphasizing the need for individual attention to detail and technical accuracy.
4. A relief request was submitted to obtain a waiver of the ASME Code requirements to allow use of TDAS data that exceed the full scale range requirements of the Code but satisfy the accuracy requirements.

Corrective Action to be Taken

No further corrective actions were identified.



Date of Full Compliance

WNP-2 will be full compliance when the relief request is approved. The BCO justifies current and past testing practices. Overview of past surveillance data shows no operability concerns.

# ACCELERATED DOCUMENT DISTRIBUTION SYSTEM

REGULATORY INFORMATION DISTRIBUTION SYSTEM (RIDS)

ACCESSION NBR:9301210291 DOC.DATE: 93/01/11 NOTARIZED: NO DOCKET #  
FACIL:50-397 WPPSS Nuclear Project, Unit 2, Washington Public Powe 05000397  
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ARRISH, J.V. Washington Public Power Supply System  
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Document Control Branch (Document Control Desk)

SUBJECT: Amended response to NRC 921007 ltr re violation in insp  
rept 50-397/92-25. Corrective actions: all appropriate plant  
personnel will be made aware of changes to Section 11.4 of  
PPM 1.3.7 & necessity for changes by 930122.

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January 11, 1993  
G02-93-009

Docket No. 50-397

U. S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Mail Station P1-137  
Washington, D. C. 20555

Gentlemen:

Subject:        **WNP-2, OPERATING LICENSE NO. NPF-21**  
                 **NRC INSPECTION REPORT 92-25**  
                 **AMENDED RESPONSE TO NOTICE OF VIOLATION**

The Washington Public Power Supply System hereby provides an amended reply to the Notice of Violations contained in your letter dated October 7, 1992. Our reply, pursuant to the provisions of Section 2.201, Title 10, Code of Federal Regulations, consists of this letter and Appendix A (attached). This amended response provides trend information, and clarifies certain event descriptions, and corrective actions taken and to be taken per discussions with Mr. Paul Narbut of your staff on December 11, 1992.

In Appendix A, the violations are addressed with an explanation of our position regarding validity, corrective action and date of full compliance.

Your letter transmitting the Inspection Report requested a description of the short term actions taken to clarify management's policy to Supply System personnel regarding procedural adherence. The following describes the corrective actions taken to date.

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RESPONSE TO NOTICE OF VIOLATION

Short term corrective actions have been implemented to reinforce the Supply System policy on procedural adherence. This policy has been more explicitly defined in the Use of Controlled Plant Procedures and the Conduct of Maintenance procedure. The Deputy Managing Director defined the Standards of Performance for procedural compliance in a memo to Senior Management personnel in July 1992. This memo further directs management at all levels to discuss the performance standards with their personnel. The Assistant Managing Director of Operations (AMDO) expectations, communicated in a memo entitled "Call Time Out," are that personnel are to stop work to resolve questions and/or difficulties regarding execution of a procedure. The Deputy Managing Director has reiterated management expectations in employee meetings in September 1992 and explained the absolute necessity for procedure compliance. On October 28, 1992, the Plant Manager held a special staff meeting with Plant managers and supervisors to communicate his expectations for strict procedural compliance. Per direction from the Plant Manager, the Plant managers and supervisors have held similar staff meetings to communicate these management expectations to their subordinates. Included in this discussion was the accountability of the employee and his Supervisor for strict procedural compliance and a review of our discipline policy for violation of our expectations. The Plant Manager has directed Plant personnel to initiate a Problem Evaluation Request (PER) for each occurrence of a procedural non-compliance. A Quality Action Team (QAT) on Standards and Expectations was commissioned in August 1992, to establish a set of standards and expectations that will apply to all Supply System employees. This new standard contains clear expectations on procedural compliance.

Strict adherence to procedures is the Supply System standard to operate and maintain WNP-2 safely and efficiently. Plant personnel are directed that if an activity requiring a procedure cannot be performed due to a lack of an existing procedure or an inadequate procedure, do not proceed with the task. All employees are expected to implement this standard into their activities. The Supply System management is committed to this standard and will continually emphasize the need for procedural compliance. This emphasis includes "self-checking" training of Plant personnel on a continuing basis. Egregious violations or instances of individual non-compliance will be evaluated with disciplinary actions taken where appropriate. In cases of serious violations or repeat occurrences, the degree of supervisory culpability will also be assessed, with appropriate actions administered.

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The discipline cited in these NOV responses were typically verbal counseling. Recent cases where there were failures of strict procedural compliance were dealt with more aggressively. Disciplinary action taken in association with the core power oscillation event demonstrates management commitment to holding personnel at all levels of the organization accountable for their actions.

Sincerely,

*JT Harold for*

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

REF/bk

Attachments

cc: JB Martin - NRC RV  
NS Reynolds - Winston & Strawn  
JW Clifford - NRR

NRC Site Inspector - 901A  
DL Williams - BPA/399

## APPENDIX A

During an NRC inspection conducted on July 13 through August 14, 1992, five violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1992), the violations are listed below:

- A. Criterion XI of 10 CFR Part 50, Appendix B, "Test Control," states in part that: "A test program shall be established to assure that all satisfactorily in service...is performed in accordance with written test instructions..."

Administrative Procedure PPM 1.3.7, "Maintenance Work Request," Revision 12, Section 1.3.7.12, requires post maintenance and post modification test instructions to be specified on a Maintenance Work Request (MWR) and Section 1.3.7.14 requires that MWR test instructions be performed.

Maintenance Work Request (MWR) AR4743 (steps 12-15) provided post maintenance test instructions for a replaced Reactor Core Isolation Cooling (RCIC) system transfer switch (RCIC-RMS-RSTS52) to demonstrate that the new switch would perform satisfactorily in service. Steps 12-15 required manipulation of the switch and verification that the proper system responses were obtained.

Contrary to the above, test steps 12-15 in MWR AR4743 were not performed, and the RCIC system was declared operable on July 11, 1992.

This is a Severity Level IV violation (Supplement I).

### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause of this event was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

The Plant procedure for MWRs provides a mechanism for the Operations Department to track MWRs currently being worked. This mechanism consists of providing Operations (in the main Control Room) with a pink copy of each MWR approved to be worked. The pink copy file in the Control Room (CR) represents the actual work in progress in the Plant. Per procedure, this pink copy may be removed from the Control Room under two conditions: If the work is complete and the testing has been performed satisfactorily, or the work is going to be delayed (unplanned) for more than 24 hours. In the latter case, the procedure requires the Shift Manager (SM) to review the MWR package prior to removal of the pink copy. If the equipment is ready for Post-Maintenance Testing (PMT), the SM would be expected to retain the pink copy in the CR.

If maintenance is delayed, the SM may revoke the work release authorization at the request of a Maintenance supervisor. In doing this, the SM ensures the equipment is left in a satisfactory condition, and restores the pink copy to the MWR package. Any outstanding Clearance Orders against the system or component are the remaining barriers to inappropriately declaring the equipment operable.

RCIC was removed from service by standard Clearance Order procedures and with an entry in the Limiting Condition of Operation (LCO) CR log. The SM approved the release for the maintenance work to proceed and retained the pink copy of the MWR in the CR file.

The field work for the RCIC transfer switch had been completed on May 8, 1992. The associated Clearance Orders were removed on May 9, 1992 to allow the PMT. However, the PMT was deferred for several days because maintenance activities on the Main Steam (MS) System placed Clearance Order restraints on the RCIC System. This prevented the PMT from being performed. The pink copy was appropriately retained in the CR file at this time.

While retrieving other pink copies, a Maintenance supervisor inadvertently removed the pink copy of the MWR for the RCIC transfer switch from the CR on May 13, 1992. The Maintenance supervisors are urged by the Operations Department to remove the pink copies of MWRs that have been delayed for more than 24 hours to ensure the CR file accurately reflects work in progress in the Plant. Contrary to the MWR procedure, the pink copy was removed without review and approval by the SM.

Prior to removal of the pink copy, another barrier had been breached due to another procedural violation. In the normal process, the MWR package was closed out on May 8, 1992, as Field Work Complete (FWC). However, the package was misplaced and was not returned to the CR as required by the MWR procedure when it reaches FWC status. Had it been returned to the CR, the required testing may have been completed.

The MS Clearance Orders were removed June 29, 1992. With no record of outstanding testing requirements in the CR (i.e., the pink copy of the MWR or the MWR package), there were no barriers to declaring the RCIC System operable. Therefore, the RCIC System was considered operable for the July 4, 1992, startup from the refueling outage without performance of the required PMT.

A search of all Problem Evaluation Requests (PER) since 1988 (approximately 4500) identified 6 PERs where the PMT or a portion of the PMT was not performed prior to returning the equipment to operation. A review indicated that these incidents occurred primarily because of procedural noncompliance. No other documented instance was found where a PMT was not performed because the pink copy of the MWR was inadvertently removed and resulted in a system being inappropriately returned to operable status. This is considered an isolated instance.

The root cause, as noted, was personnel work practices were less than adequate. The MWR procedure was not followed with regard to removal of the pink copy of the MWR and failing to return the MWR package to the CR.

A contributing cause to this event was procedural instructional deficiencies regarding control of the MWR pink copies. An informal log was maintained in the CR documenting when the pink copy of an MWR was removed from the CR and who removed it. In this case, the log sheet had been completed properly. The log did not require documenting the reason for removal of the pink copy nor did it require a status of the equipment at the time the copy was removed. This information could have prevented Operations from declaring the RCIC System operable until the required testing was performed.

#### Corrective Steps Taken/Results Achieved

1. This event has been discussed with the individual responsible for the non-compliance of the MWR procedure. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. The log practices for removal of the pink copy of an MWR from the CR were changed to require documentation of the reason for removal of the copy and to provide a status of the affected equipment. Shift Manager approval is also required to remove the pink copy. This process provides the added barrier that if the pink copy is inadvertently removed or misplaced, the SM's signature would be missing from the log sheet, prompting further investigation as to the status of the equipment.
3. The log sheet for the pink copy of the MWR has been proceduralized.
4. The SM's duties regarding the pink copy of the MWR have been clarified in Section 11.4 of Plant procedure PPM 1.3.7.

#### Corrective Action to be Taken

All appropriate Plant and contractor personnel will be made aware of the changes to Section 11.4 of PPM 1.3.7 and the necessity for the changes by January 22, 1993.

#### Date of Full Compliance

WNP-2 was in full compliance when the required testing was satisfactorily performed on the RCIC System on August 1, 1992. The transfer switch operated as designed, and was therefore operable during the period the RCIC System was considered operable without performance of the PMT.



- B. Criterion XI of 10 CFR Part 50, Appendix B, "Test Control," requires in part that: "A test program shall be established to assure that all testing required to demonstrate that...components will perform satisfactorily in service is identified and performed in accordance with written test procedures which incorporate the requirements and acceptance limits...."

Administrative Procedure PPM 1.3.7, "Maintenance Work Request, Revision 12, Section 1.3.7.12, requires post maintenance and post modification test instructions to be specified on a Maintenance Work Request (MWR) and Section 1.3.7.14 requires that MWR test instructions be performed.

Maintenance work request AR8673 provided test instructions for a modification to Reactor Core Isolation Cooling (RCIC) system control power supplies. Prerequisite 1 specified the acceptance limits for the RCIC system power supply output voltage to be  $24 \pm 1$  volts DC. Steps 19 and 20 of the MWR specified the voltage acceptance limits at six system locations to be  $48 \pm 2$  volts DC.

Contrary to the above, on June 19, 1992, the acceptance limits for prerequisite 1 were not met in that voltage was recorded as 26.17 volts DC; on June 27, 1992, the acceptance limits of steps 19 and 20 were not met in that voltages were recorded as 52.6, 52.3, 50.9, 50.7, and 50.5 volts DC.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of this violation. The root cause of this event was personnel work practices by several Contractor supervisors were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

Contractor personnel measured and recorded the above described voltages twice: first as a prerequisite requirement on June 19, 1992, and second for post-modification testing on June 27, 1992. In both cases, the Contractor foreman recognized the measured values were not within the acceptance limits provided in the MWR and brought it to the attention of the System Engineer and Contractor supervision. Each time, the System Engineer indicated the measured values were acceptable, and that the Contractor was to revise the affected work instructions. Contrary to the MWR procedure PPM 1.3.7, the Contractor supervisor present at the time instructed the Contractor foreman to proceed with the work, without revising the affected work instructions. Upon completion of the work instructions, the Contractor foreman's supervisor signed the MWR as field work complete on June 30, 1992, indicating that all work was performed within accepted limits. As a result, the work was performed contrary to PPM 1.3.7 which requires satisfactory completion of the work instructions.





Based upon concerns raised by the NRC, the System Engineer reviewed the subject MWR and found the voltage checks for the 48 VDC power supply for the RCIC Turbine Governor to be outside of the specified limits. The discrepancy was documented on a Problem Evaluation Request (PER) on August 11, 1992. The measured voltages were determined acceptable and the equipment was determined operable.

The root cause analysis determined the root cause was personnel work practices. Three Contractor supervisors were involved in the performance and/or review of the MWR. Two of the supervisors had received detailed training of the MWR procedure PPM 1.3.7 in 1991 following a major revision. Although the third supervisor had not received the detailed training, he was aware of the requirements to satisfactorily complete procedure steps before proceeding to the next one. Training is not considered to be contributory. There may have been perceived schedule pressures at the time to complete the job and accept the MWR packages which overrode the sense to follow the procedures.

#### Corrective Steps Taken/Results Achieved

1. This incident was discussed with the personnel involved in the non-compliance of the MWR procedure. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. Supply System management transmitted a letter to the Contractor management emphasizing that procedural compliance is mandatory.
3. Training seminars developed by the Supply System on procedural compliance and on PPM 1.2.3, Use of Controlled Plant Procedures, were used in Contractor training sessions to employees. The individual Contractors are responsible for training their employees to Supply System procedures. It is Supply System and Contractor management's expectations that personnel are familiar with the portions of the procedure they are using and to comply with the procedure. Training of all Contractor employees on procedural compliance and PPM 1.2.3 has been completed.

#### Corrective Action to be Taken

No further corrective actions were identified.

#### Date of Full Compliance

WNP-2 was in full compliance when the as-measured power supply voltages were determined acceptable on August 11, 1992.



- C. Technical Specification 6.8.1 states that: "Written procedures shall be established, implemented and maintained covering...applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978...." Appendix A of Regulatory Guide 1.33 specifies procedures for temporary changes, procedure adherence, surveillance tests and performing maintenance.

Procedure PPM 1.2.3, "Use of Controlled Plant Procedures," Revision 17, dated November 14, 1991, required in part: "Any person performing a task for which there is a procedure is responsible for doing the job as described by the procedure. When a procedure is unable to be performed as approved...a procedure deviation shall be initiated to allow the procedure to be performed."

Contrary to the above, established procedures were not implemented on three separate occasions:

- (1) Annunciator Response Procedure No. 4.601.A2, Revision 4 requires in part, that in response to an RHR pump B discharge pressure high/low alarm, the operator confirm that valve RHR-V-16B was closed.

Procedure PPM 1.2.2, "Plant Procedure Preparation," includes in the definition of the term "confirm," "...an implied requirement to take corrective action if the identified conditions do not exist."

Contrary to the above, during the performance of "RHR Loop B Operability Test," Procedure PPM 7.4.5.1.9, on July 16, 1992, the operator, in response to an RHR pump B discharge pressure low alarm, failed to confirm that RHR-V-16B was closed. The valve was open and remained open for several hours.

- (2) Inservice Test Procedure PPM 7.4.6.3.3, "CSP and CEP Containment Isolation Valve Operability," erroneously stated in part that "stroke time measurement terminates when the corresponding position indicating light becomes lit." Accepted industry practice terminates stroke time measurement, for dual position indication valves, after the corresponding position indication becomes lit and the opposite indication becomes unlit.

Contrary to the above, during performance of Procedure PPM 7.4.6.3.3, on August 12, 1992, the operator did not perform the test as described by the approved Procedure PPM 7.4.6.3.3 nor did the operator initiate a procedure deviation to allow the procedure to be performed correctly. The operator measured the stroke time test per the accepted industry practice.

- (3) Standby Service Water heat exchanger test Procedure PPM 8.4.70, "Thermal Performance Testing of PRA-FC-1A and PRA-FC-1B," Section 7, required that a clamp-on ultrasonic flow meter be installed.



Contrary to the above, on July 29, 1992, the technician performing Procedure PPM 8.4.70 failed to install a clamp-on ultrasonic flow meter.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of the violation. A root cause common to the three incidents described above was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

The first incident occurred while performing a quarterly surveillance on the Residual Heat Removal (RHR) Loop B. The surveillance required the lower Drywell spray outboard isolation valve, RHR-V-16B, to be opened. When the valve was opened by the Reactor Operator (RO), a system low pressure alarm annunciated. A failure of the affected RHR loop can result due to water hammer if the system is actuated with a low pressure condition in the RHR piping. The annunciator response procedure required the RO to confirm that RHR-V-16B and other listed valves were closed. Based on previous experience, the RO knew that a low pressure condition would occur during this evolution. The line between RHR-V-16B and the inboard isolation valve RHR-V-17B had been previously drained prior to opening RHR-V-17B to prevent contaminated water from spraying in the Drywell. Upon opening the RHR-V-16B, the flow rate into the drained section of RHR piping exceeds the capability of the keep fill pump, RHR-P-3, and a low pressure alarm occurs. The ROs expected this condition to occur during performance of the surveillances for the containment isolation spray valves. Believing it would not be a sustained low pressure condition, the RO did not follow the annunciator response procedure, and as a result, the RHR-V-16B remained open for several hours. The pressure in the system was restored with the operating keep fill pump, RHR-P-3, within a few minutes and the RO reset the annunciator alarm.

The root cause of this incident was that the RO failed to correctly follow Plant procedures. The valve should have been closed and a PER initiated to document the abnormal condition.

The low pressure condition also occurs on RHR Loop A during performance of a similar surveillance procedure. The practice of leaving the outboard isolation valve open in response to the low pressure condition during performance of this procedure had been accepted practice. A contributing cause to this event was management methods in that procedure compliance was not adequately enforced at the CR supervisory level. This condition was recognized as a chronic problem, but no action was taken to enforce management policy by either performing the tasks required by the annunciator response procedures or changing the procedures to allow the appropriate actions to be taken. The surveillance procedure did not provide a caution of possible occurrence of this condition, nor did it provide steps to preclude its occurrence. Another contributing cause to this incident was inadequate instructional provisions in the procedures to warn of or preclude the possible low pressure condition.

The second incident occurred during the performance of the quarterly surveillance for the Containment Supply Purge (CSP) and the Containment Exhaust Purge (CEP) System Containment Isolation Valve Operability. The procedure stated that the stroke time measurement terminates when the corresponding position indicating light illuminates. The correct method for stroke time measurement of dual position indication valves is to initiate time measurement when the control switch is turned to either open or close. Time measurement is terminated when the indicating light opposite to the direction of travel extinguishes. The RO performing the test recognized the error in the procedure, stroked the valves in question using the correct method and recorded this data. This was not in accordance with the procedure. Consequently, the RO failed to follow procedure. The test should have been stopped and the procedure should have been revised or deviated in accordance with established Plant procedures. In addition, a PER should have been written to address a possible generic problem with ASME valve In-service Test (IST) surveillance procedures.

The first root cause of this incident was that the work practices of the RO were less than adequate because the Plant procedures were not followed correctly. The second root cause of this incident was omission of relevant information in the surveillance procedure. If the proper directions had been included in the procedure, the RO would not have violated Plant procedures.

The difference between the procedure instruction and the correct method for stroke time measurement has been a chronic problem. The accepted practice has been to use the correct method contrary to the procedure direction. Consequently, a contributing cause to the event was management method in that procedure compliance was not adequately enforced at the CR supervisory level.

If the stroke time measurements were obtained per the incorrect procedure instructions, the stroke times would have been a fraction of a second. This would have been outside the acceptance criteria and would have resulted in corrective actions. The ROs are trained to the correct method of stroke time testing. Based on this, the previous test results are considered acceptable and the affected valves are considered to have satisfied their operability requirements.

The third incident occurred during performance of the Thermal Performance Testing of the Standby Service Water (SW) Pump House Return Air (PRA) heat exchanger. The test procedure required that an ultrasonic flow meter be installed to provide backup data to a permanently installed flow sensor in the system. This procedure is used to gather trending information on the heat exchangers. The Supply System technician installed the flow meter as required by the procedure, but the data were invalid because of the location. The flow meter was removed with the intention of reinstalling it in another location on the piping. However, the test proceeded without the flow meter being reinstalled. The root cause of this incident was personnel error in that the procedures were not followed correctly.





Corrective Steps Taken/Results Achieved

1. The above described incidents were reviewed with the personnel involved in the non-compliance of the respective procedures. The review emphasized that procedure compliance is mandatory and departure from established procedures is forbidden.
2. The appropriate Plant procedures were changed to provide the instructions for appropriate RO response to the nonstandard conditions experienced in the above described incidents.
3. Directions were provided in the CR Night Orders that procedure compliance is mandatory.
4. All CR operating crews and supervision have been trained regarding mandatory procedure compliance. The training emphasized that unauthorized departure from a Plant procedure is forbidden, especially in response to a recurring problem, even though the reasons for the problem are well understood. If difficulties are encountered while performing a procedure, it is management's expectations that performance of the procedure should be suspended, the Plant placed in a safe condition, and the conditions evaluated and appropriately resolved.
5. Engineering and Plant Technical personnel have also received training on procedural compliance.
6. As indicated in the cover letter, egregious violations or instances of individual non-compliance will be evaluated with disciplinary actions taken where appropriate. Supervisory culpability will also be assessed.
7. With regard to the first incident, the appropriate RHR surveillance procedures have been changed to preclude occurrence of the system low pressure condition experienced when the lower DW spray outboard isolation valve was opened.
8. The surveillance procedure for the CSP and CEP isolation valves have been changed to include the proper stroke time measurement method information to preclude recurrence of the second incident. In addition, all twenty-three ASME valve IST surveillance procedures have been changed to reflect the proper stroke time measurement methodology for dual position indication valves.
9. The test procedure described in the third incident was changed to remove the requirement to use the ultrasonic flow meter.

Corrective Action to be Taken

No further corrective actions were identified.

Date of Full Compliance

WNP-2 will be in full compliance when the ASME valve IST surveillance procedures are changed by November 30, 1992.

- D. Technical Specification 6.8.1 states that: "Written procedures shall be established, implemented and maintained covering...applicable procedures recommended in Appendix A of Regulatory Guide 1.33, Revision 2, February 1978...." Appendix A of Regulatory Guide 1.33 specifies procedures for temporary changes, procedure adherence, surveillance tests and performing maintenance.

Contrary to the above, applicable procedures were not implemented on several occasions. Two examples are detailed below:

- (1) Administrative Procedure PPM 1.3.7, "Maintenance Work Request, Revision 12, Section 4, requires in part that "The MWR [maintenance work request] is the document used to initiate and record maintenance activities or to implement and record Plant Modifications." Section 1.3.7.14 requires that MWR test instructions be performed.

MWR AR5692, for 250 volt DC battery replacement, step H, required that battery condition data be recorded; steps L and M required recording additional battery data every 24 hours for 94 hours.

Contrary to the above, on May 4, 1992, data was not recorded in MWR AR5692 as directed by step H; the data directed by step L and M was recorded on May 5 and 6, 1992 only, a period of less than 94 hours.

- (2) Procedure PPM 1.2.3, "Use of Controlled Plant Procedures," Revision 17, dated November 14, 1991, required in part: "Any person performing a task for which there is a procedure is responsible for doing the job as described by the procedure.

Administrative Procedure PPM 1.5.1, "Technical Specification Surveillance Testing Program," Revision 26, dated February 6, 1991, Section 1.5.1.4.C, states that "Prerequisites...are required to have a signature blank for...verifying compliance with the prerequisite."

Contrary to the above, as of August 14, 1992, Procedure PPM 7.4.7.3.3B, "RCIC Quarterly Operability Test," Prerequisite 3.1, which required the reactor to be between 920 psig and 1020 psig, had no signature blank for verifying compliance with the prerequisite.



Contrary to the above, as of August 14, 1992, Procedure PPM 7.4.3.7.5.18, "Accident Monitoring Instrumentation RCIC Flow Indication CC," Prerequisite 3.4, which required the shift manager to verify that RCIC system testing would not be affected by the operability status of any ECCS system, had no signature blank for verifying compliance with the prerequisite.

This is a Severity Level IV violation (Supplement I).

#### Validity of Violation

The Supply System acknowledges the validity of this violation. A root cause common to the examples described above was personnel work practices were less than adequate because procedures were not followed correctly. As indicated in the cover letter to this response, corporate wide corrective actions are being taken to minimize the occurrence of procedural violations.

In the first example, the subject MWR provided for replacement of the 250 Volt DC station battery. Following replacement, Step H of the MWR work instructions required that battery data be recorded marking the end of a minimum 24 hour stabilization charge. The data were recorded on May 6, 1992, but on the wrong data sheet. The data sheet was included in the MWR package. Steps L and M of the work instructions required that battery data be recorded once every 24 hours for 94 hours following completion of the stabilization charge and initiation of the equalization charge. These data were recorded on two data sheets, but had been filed separately from the MWR package. The data were poorly recorded but were evaluated to have satisfied the intended requirements of the work instructions. The 94-hour requirement was to satisfy vendor warranty requirements.

The root cause of this event was that personnel work practices were less than adequate, resulting in improper recording of data. Technical Specification surveillances performed on the battery after installation verified operability of the battery.

With regard to the second example of prerequisite signoff described above, the procedure writers had referred primarily to the guidance of Plant Procedure PPM 1.2.2, Plant Procedure Preparation. This procedure does not require the inclusion of a signoff space for prerequisites of surveillance procedures. The procedure writers were not aware of the prerequisite signoff requirement included in PPM 1.5.1. The root cause of this condition was personnel work practices were less than adequate.



Corrective Steps Taken/Results Achieved

1. PPM 1.2.3, "Use of Controlled Plant Procedures," was changed to more clearly define management's expectations that performance of all prerequisites is mandatory.
2. Based upon management's expectations that all prerequisites will be performed, the prerequisite signature requirement has been deleted from PPM 1.5.1.
3. A review of the PERs since 1989 did not reveal a trend of the procedure writers failing to follow PPM 1.5.1.

Corrective Action to be Taken

No further corrective actions were identified.

Date of Full Compliance

WNP-2 was in full compliance November 13, 1992, when PPM 1.5.1 was changed.

- E. Technical Specification 4.0.5 stated in part that "Inservice testing of American Society of Mechanical Engineers (ASME) Code Class 1, 2, and 3 pumps and valves shall be performed in accordance with Section XI of the ASME Boiler and Pressure Vessel Code (CODE) and applicable Addenda."

Subarticle IWP-4120 of Division 1 of Section XI of the ASME Code stated that "The full-scale range of each instrument shall be three times the reference value or less."

Contrary to the above, as of August 12, 1992, Residual Heat Removal (RHR) surveillance procedure PPM 7.4.5.1.8, "RHR Loop A Operability Test," required (and completed quarterly test data sheets showed) measurements of the pump discharge pressure for pump RHR-P-2A by instrumentation with a full-scale range of 0-600 pounds per square inch gauge (psig). The reference value for this pump parameter was 138.3 psig, which requires a maximum scale range of 415 psig or less.

This is a Severity Level V violation (Supplement I).

Validity of Violation

The Supply System acknowledges the validity of this violation. The surveillance procedures allowed use of data obtained from the Transient Data Acquisition System (TDAS) or panel gauges when TDAS was unavailable. Evaluation of the accuracy of selected instruments on RHR Loops A, B, and C, the High Pressure Core Spray (HPCS) System and Reactor Core Isolation Cooling (RCIC) System determined that the panel gauges and the TDAS data did not satisfy the full-scale range requirements of the ASME Code. These instruments were included in the original design of the systems.



The first root cause for failing to satisfy the ASME Code accuracy requirements was a design deficiency of the affected systems. Appropriately ranged instruments were not provided with the systems to obtain operability test data within an acceptable accuracy. The second root cause of this condition was personnel work practices were less than adequate. The intended verification in the development and performance of the surveillance procedures was not performed to ensure the appropriate gauges were being used.

#### Corrective Steps Taken/Results Achieved

1. Current design review practices require a more thorough review to ensure ASME Code requirements are satisfied before new or modified equipment is accepted for use.
2. Further evaluation determined that TDAS data satisfied the technical accuracy requirements of the Code. A Basis for Continued Operation (BCO) was developed to demonstrate the acceptability of using TDAS data only to perform operability surveillances. The BCO determined that the loop accuracy of the TDAS measurement is 1% of full scale of the sensor versus 2% for the panel gauges. The lower TDAS accuracy error satisfies the ASME Code accuracy error requirements even though the sensors may not satisfy the full scale range requirements of the Code. The panel gauges are outside both the full scale range and accuracy requirements of the Code, and therefore, are not suitable for use in performing Technical Specification surveillances. The appropriate surveillance procedures have been changed to only allow the use of TDAS data where corresponding panel gauges do not satisfy the Code accuracy requirements. Where TDAS instruments are unavailable, appropriately ranged instruments will be used to perform the surveillance tests. In addition, the accuracy of instruments used in other Technical Specification surveillances were reviewed and found to be within the ASME Code acceptable values.
3. This response has been reviewed by personnel involved in preparing test procedures for the purpose of emphasizing the need for individual attention to detail and technical accuracy.
4. A relief request was submitted to obtain a waiver of the ASME Code requirements to allow use of TDAS data that exceed the full scale range requirements of the Code but satisfy the accuracy requirements.

#### Corrective Action to be Taken

No further corrective actions were identified.



Date of Full Compliance

WNP-2 will be full compliance when the relief request is approved. The BCO justifies current and past testing practices. Overview of past surveillance data shows no operability concerns.

