

September 4, 2001

Mr. L. W. Myers
Senior Vice President
Post Office Box 4
FirstEnergy Nuclear Operating Company
Shippingport, Pennsylvania 15077

SUBJECT: BEAVER VALLEY POWER STATION - NRC INSPECTION REPORT
50-334/01-07, 50-412/01-07

Dear Mr. Myers:

On August 11, 2001, the NRC completed an inspection at your Beaver Valley Units 1 & 2. The enclosed report documents the inspection findings which were discussed on August 15, 2001, with you and members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the results of this inspection, the inspectors identified one issue of very low safety significance (Green). This issue was determined to involve a violation of NRC requirements. However, because of the very low safety significance and because the issue has been entered into your corrective action program, the NRC is treating the issue as a Non-Cited Violation, in accordance with Section VI.A of the NRC's Enforcement Policy. If you deny the Non-Cited Violation, you should provide a response, with the basis for your denial, within 30 days of the date of this inspection report, to the Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator, Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Beaver Valley facility.

Mr. L. W. Meyers

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Sincerely,

/RA/

John F. Rogge, Chief
Projects Branch No. 7
Division of Reactor Projects

Docket Nos.: 50-334, 50-412
License Nos: DPR-66, NPF-73

Enclosures: Inspection Report 50-334/01-07; 50-412/01-07
Attachment 1: Supplemental Information

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U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos. 50-334, 50-412
License Nos. DPR-66, NPF-73

Report Nos. 50-334/01-07, 50-412/01-07

Licensee: FirstEnergy Nuclear Operating Company

Facility: Beaver Valley Power Station, Units 1 and 2

Location: Post Office Box 4
Shippingport, PA 15077

Dates: July 1 - August 11, 2001

Inspectors: D. Kern, Senior Resident Inspector
G. Wertz, Resident Inspector
S. Pindale, Reactor Systems Specialist

Approved by: J. Rogge, Chief, Projects Branch 7
Division of Reactor Projects

SUMMARY OF FINDINGS

IR 05000334-01-07, IR 05000412-01-07, on 7/01 - 8/11/2001; FirstEnergy Nuclear Operating Company; Beaver Valley Power Station; Units 1 & 2. Maintenance risk assessment and emergent work control.

The inspection was conducted by resident inspectors and a regional systems engineering specialist. The inspection identified one Green finding which was a Non-Cited Violation. The significance of most findings is indicated by their color (Green, White, Yellow, Red) using IMC 0609 "Significance Determination Process" (SDP). Findings for which the SDP does not apply are indicated by "No Color" or by the severity level of the applicable violation. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website <http://www.nrc.gov/NRR/OVERSIGHT/index.html>.

A. Inspector Identified Findings

Cornerstone: Mitigating Systems

- **Green.** The inspectors identified a Non-Cited Violation for failure to properly implement a maintenance procedure which resulted in additional unavailability of the Unit 2 'C' High Head Safety Injection pump. Poor communications during the maintenance crew turnover and insufficient attention to detail when annotating the procedure resulted in the outboard seal leaking when the pump was returned to service on June 30. On July 4, the pump was subsequently removed from service for repair which resulted in an additional 54 hours of pump unavailability.

The finding was of very low safety significance because both trains of High Head Safety Injection remained operable.

B. Licensee Identified Violations

No violations were identified.

Report Details

SUMMARY OF PLANT STATUS: Unit 1 began this inspection period at 100 percent power. On July 4, 2001, operators performed a planned power reduction to 60 percent power to repair an oil leak on the 'A' main feedwater pump (MFP). Full power operation resumed on July 4, following repair of the oil leak.

Unit 2 began this inspection period at 95 percent power while corrective maintenance to the first point feedwater heater level control valve 2HDH-LCV103A2 was performed. Full power operation resumed on July 2. On July 10, engineers identified that feedwater flow venturi instrumentation, used in the calorimetric heat balance calculation to determine reactor power level, may indicate lower than actual flow. Operators reduced reactor power by 2 percent, as a compensatory measure, pending resolution of the apparent feedwater flow indication accuracy issue (see Section 1R15). On August 5, operators briefly reduced power to 95 percent to facilitate repair of 2HDH-LCV103A2. At the close of the period, engineers determined that the feedwater flow venturi indication was approximately 1.5 percent lower than the actual feedwater flow. Operators continued to limit power to 98 percent of the previous full power value pending operational acceptance of a new feedwater flow indication instrument which was designed for improved accuracy.

1. **REACTOR SAFETY**

Cornerstone: Initiating Events, Mitigating Systems, Barrier Integrity

1R01 Adverse Weather Protection

a. Inspection Scope

The inspectors reviewed the station's seasonal preparations for hot weather to determine whether appropriate procedures, maintenance, and evaluations were performed to support continued mitigating system operability and minimize plant risk associated with hot weather related initiating events. Hot weather and corresponding warm river water (RW) temperatures pose challenges to various mitigating systems and increase the likelihood of initiating events. Material condition and heat exchanger performance of the Unit 1 RW system, Unit 2 service water (SW) system, and Units 1&2 circulating water systems were evaluated. In 1999, marine fouling (e.g., algae, clams, mussels, etc.) of various heat exchangers challenged safe plant operation of each unit. During this inspection period, Unit 2 condenser vacuum frequently fell below the low vacuum alarm setpoint due to the effects of warm weather. Additionally, Unit 1 cooling tower (CT) pump house air compressor IA-C-2 repeatedly failed, causing a loss of outside ventilation. This in turn led to high CT pump motor stator temperature alarms. Operators responded to the CT pump house and manually restored outside ventilation. The inspectors interviewed station personnel, performed partial system walkdowns, reviewed completed test and maintenance documents, and observed portions of the activities listed below to determine whether equipment performance was effectively maintained as specified by the acceptance criteria in the listed procedures.

- 1/2 Operating Surveillance Test (OST) 30.19, "Main and Alternate Intake Structure Silt Check and Bay Cleaning," Rev. 9
- 1/2 OST-30.19A, "Main Intake Structure 'A' Bay Silt Check and Bay Cleaning," Rev. 0

- 1/2 OST-30.19B, "Main Intake Structure 'B' Bay Silt Check and Bay Cleaning," Rev. 1
- 1/2 OST-30.19C, "Main Intake Structure 'C' Bay Silt Check and Bay Cleaning," Rev. 0
- 1/2 OST-30.19D, "Main Intake Structure 'D' Bay Silt Check and Bay Cleaning," Rev. 0
- 1/2 OST-30.19E, "Alternate Intake Structure 'A' Bay Silt Check and Bay Cleaning," Rev. 1
- 1/2 OST-30.19F, "Alternate Intake Structure 'B' Bay Silt Check and Bay Cleaning," Rev. 1
- 1 Beaver Valley Test (BVT) 1.30.3, "River Water Heat Exchanger Performance Program," Rev. 3
- 2BVT 1.30.3, "Service Water Heat Exchanger Performance Program," Rev. 6
- 1 Operating Manual (OM)-30.4.AJ, "BV-1 Asiatic Clam and Zebra Mussel Chemical Treatment Program," Rev. 13
- 2OM-30.4.M, "BV-2 Asiatic Clam and Zebra Mussel Chemical Treatment Program," Rev. 17
- Unit 1&2 Condenser Parameter Monitoring Log Sheets

Unit 1 station chiller performance was unreliable in 1999-2000, causing degraded containment temperature control which approached technical specification (TS) limits. Upgraded station chillers were installed in late 2000. The inspectors verified that the new Unit 1 chillers were properly aligned and operated within the vendor specifications. The 'C' chiller failed due to a damaged bearing during this inspection period. Initial investigation indicated that the bearing had not been greased during manufacture. Corrective action included an extent of condition review for the other two new chillers. Overall, the new Unit 1 chillers demonstrated notably improved reliability compared to the Unit 1 chillers in 1999-2000.

b. Findings

No findings of significance were identified.

1R04 Equipment Alignments

.1 Unit 1 Emergency AC System Complete Walkdown

a. Inspection Scope

The inspectors conducted a complete walkdown of the Unit 1 emergency alternating current (AC) system (safety related 4 kilovolt and emergency diesel generators). The inspectors reviewed OM figures associated with the systems, including support systems, as well as normal system alignment checklists (1OM-36.3.B.1 through 1OM-36.3.B.5, and 1OM-36.3.C.5 through 1OM-36.3.C.6) to determine proper equipment alignments. In addition, the inspectors reviewed and evaluated the potential impact on the emergency AC system operation for open work orders (WOs), design change packages (DCPs), engineering evaluations, and corrective action program condition reports (CRs). The system health reports were reviewed and open issues were discussed with the system engineer.

b. Findings

No findings of significance were identified.

.2 Unit 1 Fire Protection System

a. Inspection Scope

The inspectors performed a partial walkdown of the Unit 1 fire protection system focusing on the adequacy of contingency actions implemented as a result of the motor driven fire pump, 1FP-P-1, having been removed from service for maintenance. The inspectors reviewed the requirements delineated in Nuclear Power Division Administrative Manual (NPDAP) 3.5, "Fire Protection," Rev. 16, when one of two permanently installed fire protection pumps is out of service. The inspectors reviewed the configuration of the installed spare fire protection pump, 1FP-P-5B, in accordance with OM Figure 33-1A, "Fire Protection Water Distribution Network," Rev. 15, and 1OM-33.3.B.1, "Chapter 33 Valve List - 1FP," Rev. 14, to ensure the pump was properly configured. The inspectors reviewed 1OM-33.4.S, "Portable Pump Operating While [1FP-P-1 and/or 2] Are Out of Service," Rev. 3, and interviewed equipment operators in order to assess the pump's operational readiness. The inspectors noted minor equipment, procedure, and operator knowledge discrepancies which were captured in CR 01-5089.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

.1 Fire Protection Area Walkdown

a. Inspection Scope

The inspectors reviewed the Unit 1 Updated Fire Protection Appendix 'R' Review, Rev. 16, and the Unit 2 Fire Protection Safe Shutdown Report, Addendum 18 and identified the following risk significant areas:

- Unit 1 Process Instrument Room (Fire Area CR-4)
- Unit 1 Communication Equipment and Relay Panel Room (Fire Area CR-3)
- Unit 1 Auxiliary Feedwater (AFW) and Quench Spray Subarea (Fire Area QP-1)
- Unit 1 Primary Auxiliary Building 735' Elevation (Fire Area PA-1E)
- Unit 2 DF Emergency Switchgear Room (Fire Area SB-2)

The inspectors reviewed the fire protection conditions of the above listed areas in accordance with the criteria delineated in NPDAP 3.5, "Fire Protection," Rev. 16. Control of transient combustibles, material condition of fire protection equipment, and the adequacy of any fire protection impairments and compensatory measures were included in these plant specific reviews.

b. Findings

No findings of significance were identified.

.2 Fire Brigade Drill

a. Inspection Scope

The inspectors observed a Unit 1 fire drill in the south yard area outside of the primary auxiliary building. The drill scenario was a fire which consumed roofing materials and chemicals which had been staged to support roof maintenance. Hazards included a nearby pressurized nitrogen gas truck, seavans filled with radioactive material, new reactor fuel in shipping containers, and drains which could transport chemicals and runoff water from the firefighting activity to the Ohio river. The drill included treatment of a simulated injured man who was overcome by smoke and chemical fumes from the fire. The inspectors reviewed: 1) the effectiveness of communications; 2) the assessment of the fire and the use of proper fire fighting strategy; 3) the adequacy and condition of fire fighting equipment; 4) treatment of fire victims; and 5) the knowledge and skill of the fire brigade. The drill critique was also observed to ensure all deficiencies were identified and that the drill assessment was accurately documented as required on Figure 48.5.A-3, "Emergency Squad and Fire Brigade Drill Report," Rev. 0.

b. Findings

No findings of significance were identified.

1R07 Heat Sink Performance

a. Inspection Scope

The inspectors reviewed Unit 1 and Unit 2 heat exchanger monitoring prior to and following performance of clamicide treatment. Bulk clamicide injections are performed two to four times per year between the months of April and November to limit the presence of mussels and clams in the safety-related RW and SW systems. This chemical treatment has the potential to block various safety-related heat exchangers with shells (see NRC Inspection Report 50-334(412)/99-07) as the clamicide kills and transports any mussels and clams which may be adhering to the piping wall. The inspectors reviewed procedures, accompanied station personnel during clamicide application and monitoring, and interviewed engineers regarding post-clamicide heat exchanger performance and the acceptance criteria specified in the procedures below. Engineers monitored several heat exchangers during this evolution, including those for emergency diesel generators (Units 1 and 2), safeguards building air conditioning (Unit 2), alternate shutdown panel air conditioning (Unit 2), control room air conditioning (Unit 2), and various motor control centers' ventilation (Unit 2). Additionally, the inspectors verified that test equipment used to monitor heat exchanger flow and differential pressures was appropriately scaled and calibrated.

- 1BVT 1.30.3, "River Water Heat Exchanger Performance Program," Rev. 4
- 2BVT 1.30.3, "River Water Heat Exchanger Performance Program," Rev. 6

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule Implementation

a. Inspection Scope

The inspectors evaluated Maintenance Rule (MR) implementation for the issues listed below. Specific attributes reviewed included MR scoping, characterization of failed structures, systems, and components (SSCs), MR risk categorization of SSCs, SSC performance criteria or goals and appropriateness of corrective actions. The inspectors verified that the issues were addressed as required by 10 Code of Federal Regulations (CFR) 50.65, "Requirements for Monitoring the Effectiveness of Maintenance of Nuclear Power Plants," and System and Performance Engineering Administrative Manual 3.2, "Maintenance Rule Program Administration," Rev. 3. For selected systems, the inspectors observed maintenance rule steering committee meetings to determine whether system performance was properly dispositioned for MR category (a)(1) or (a)(2) performance monitoring.

- On July 7, the Unit 2 'C' High Head Safety Injection (HHSI) pump was restored to service following repeat maintenance which required an additional 54 hours of unavailability (see Section 1R13 for additional information). The inspectors reviewed the MR unavailability goals as described in the "Maintenance Rule System Basis Document, Chemical and Volume Control System, System 7," Rev. 3, and determined that the additional 54 hours did not result in the 'C' HHSI pump exceeding any MR performance goals. The inspectors also reviewed the performance criteria for the Unit 2 HHSI system and discussed the system's recent performance with the system engineer.
- Unit 2 Containment Instrument Air System restoration from (a)(1) status to (a)(2) performance monitoring.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessment and Emergent Work Control

.1 Unit 2 High Head Safety Injection Pump Maintenance

a. Inspection Scope

On June 30, the 'C' HHSI pump failed to satisfy its post-maintenance test requirements following maintenance which replaced the pump's mechanical seals. On July 4, the HHSI pump was removed from service again in order to correct a seal leak. The inspectors, recognizing the risk importance of the HHSI pump, reviewed the maintenance performed, and interviewed plant operators, a maintenance supervisor, and the system engineer in order to evaluate the risk assessment and management of the maintenance activity.

b. Findings

The inspectors identified a Non-Cited Violation (NCV) of TS 6.8.1 for failure to properly implement a maintenance procedure for repair of the Unit 2 'C' HHSI pump. This finding was of very low safety significance (Green) because two trains of HHSI remained operable.

The inspectors determined that maintenance technicians failed to comply with maintenance procedure "1/2CMP-7CHS-Charging Pump-1M," Rev. 5, while performing maintenance on the 'C' HHSI. Procedural steps to tighten a set of screws in the outboard mechanical seal assembly were not performed. The inspectors determined that poor communications during the maintenance crew turnover and insufficient attention to detail when annotating the procedure caused the outboard seal to leak when the pump was returned to service on June 30. On July 4, the pump was subsequently removed from service for repair which resulted in an additional 54 hours of pump unavailability.

The finding is more than minor because the additional unavailability of the safety-related 'C' HHSI pump resulted in an increase in the delta core damage frequency (delta-CDF) for the plant; thus constituted an actual impact to plant safety. The safety significance of this finding, however, was very low (Green) because two trains of HHSI remained operable. Additionally, the inspectors reviewed the risk profile with the station's probabilistic risk engineer who indicated that the delta-CDF was less than 1E-6.

Technical Specification 6.8.1 requires that written procedures are properly implemented covering the activities referenced in Appendix "A" of Regulatory Guide 1.33, Rev. 2, February 1978. Appendix "A" of Regulatory Guide 1.33 specifies that maintenance affecting the performance of safety-related equipment should be performed in accordance with written procedures. Contrary to these requirements, maintenance performed on the Unit 2 'C' HHSI pump was not performed in accordance with the instructions in maintenance procedure "1/2CMP-7CHS-Charging Pump-1M," Rev. 5. This violation of TS 6.8.1 is being treated as a Non-Cited Violation, consistent with Section VI. A.1 of the NRC Enforcement Policy (**NCV 50-412/01-07-01**). This violation was entered in the licensee's corrective action program as CR 01-3151.

.2 Other Maintenance Risk and Emergent Work Control Items

a. Inspection Scope

The inspectors reviewed the scheduling and control of maintenance activities in order to evaluate the effect on plant risk. This review was against criteria contained in NPDAP 7.12, "Non-outage Planning, Scheduling, and Risk Assessment," Rev. 11. The inspectors reviewed the routine planned maintenance and emergent work for the following equipment removed from service:

- On June 30, a manager performing a plant tour identified an oil leak on the Unit 1 'A' MFP. The leak, which was approximately 5 gallons per day, was constantly monitored by plant operators who added oil the pump as necessary. On July 4, plant power was reduced to 65 percent in order to remove the 'A' MFP from service and perform a repair. The inspectors assessed the condition of the MFP oil leak because a sudden loss of the MFP would likely result in an initiating event such as a reactor trip. The inspectors also reviewed WO 01-014810-000 and the defective oil line in order to understand the cause of the oil leak and evaluate the effectiveness of the corrective actions.
- On July 10, engineers identified a 1.5 percent flow discrepancy between the installed Unit 2 feedwater flow venturi instrumentation, used in the calorimetric heat balance calculation to determine reactor power level, and the recently installed leading edge flow monitor instrument. The non-conservative flow measurement meant Unit 2 may be operating approximately 1.5 percent above the licensed power limit. Operators immediately reduced power by 2 percent, as a compensatory measure, pending resolution of the apparent feedwater flow indication accuracy issue. The calorimetric procedure and corresponding nuclear instrument indications were promptly revised to reflect the new full power limit. Temporary modifications (TMs) were implemented to rescale the overpower delta temperature and overtemperature delta temperature reactor trip setpoints by 2 percent. Several reactor protection system trip signals were required while the TMs were implemented. The inspectors reviewed supervisory controls and verified other plant activities were restricted during this period to manage plant risk as required by NPDAP 7.12.
- On July 23, operators determined that the Unit 2 'A' train Supplemental Leak Collection and Release System (SLCRS) charcoal bank was inoperable due to low radioactive methyl iodine removal efficiency. Corrective maintenance was immediately initiated to replace the charcoal and retest the 'A' SLCRS train. On-line maintenance risk was already elevated due to other planned maintenance activities. Operators postponed certain maintenance activities, including repair of a degraded off-site power supply breaker pending restoration of the 'A' SLCRS train. Corrective maintenance and testing were effectively managed to minimize 'A' SLCRS unavailability. Appropriate charcoal sampling of the 'B' SLCRS train was initiated to verify extent of condition.
- The Unit 1 steam driven AFW pump had steam leakage and condensate present downstream of the normally closed steam supply valves. Engineers identified two potential sources of the leakage and evaluated the risk which the steam leakage

posed to pump operability. Engineers recommended deferring corrective maintenance until the upcoming refueling outage (September 2001) in lieu of making the steam driven AFW pump inoperable to perform repairs while the unit was on line. The inspectors determined that the associated risk assessment was reasonable and verified that the corrective maintenance was included in the refueling outage work scope.

b. Findings

No findings of significance were identified.

1R14 Personnel Performance During Non-routine Plant Evolutions

a. Inspection Scope

The inspectors reviewed human performance during the following non-routine plant evolution, to determine whether personnel performance caused unnecessary plant risk or challenges to reactor safety. The inspectors verified station personnel properly implemented precautions and limitations specified in the procedure listed below.

- 2OM-30.4.M, "BV-2 Asiatic Clam and Zebra Mussel Chemical Treatment Program," Rev. 17

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors reviewed operability evaluations in order to determine that proper operability justifications were performed for the following items. In addition, where a component was determined to be inoperable, the inspectors verified the TS limiting condition for operation implications were properly addressed.

- The inspectors reviewed CR 01-2020, which was previously initiated to address deficiencies the inspectors had identified with the intake structure cubicles internal flood analysis. Engineers developed calculation 8700-DMC-3443, Rev. 1, which concluded that internal flooding of one cubicle would not threaten operability of SW and RW components in the adjacent cubicle, provided the interconnecting flood door was in place. The inspectors identified several errors in the calculation, including underestimation of the worst-case internal flood rate and incorrect application of a flow equation, which resulted in underestimation of the rate at which water migrated from the flooded cubicle to the adjacent cubicle. Based on these observations, station management directed that the intake structure interconnecting flood door seals be inflated to provide protection from an internal flooding event. At the conclusion of this inspection period, engineers completed 8700-DMC-3443, Rev. 2, which resolved the inspectors' observations, and determined that the flood doors

(without the rubber flood seals inflated) were sufficient to protect components in the adjacent cubicle from internal flooding in the effected cubical.

- On June 14, operators identified that Unit 1 containment penetration isolation valve 1RW-615 had been made inoperable by WO 01-002686 on June 11. The operators reviewed the TS actions as described in TS 3.6.3.1, action c, and determined that the clearance used in the above WO satisfied the TS action requirement. The inspectors reviewed station clearance 1W08-43-RM-001 and independently verified that the TS action statements were met by the configuration of the clearance. The condition was documented as CR 01-4268.
- On June 29, the Latent Issues Review (LIR) team identified a potential discrepancy in test data obtained from 1OST-11.14B, "HHSI Full Flow Test," performed in April 1996. The test data was used to establish the HHSI branch flow versus pressure correlations. The LIR team noted in CR 01-4012 that the flow data had a high degree of variation. The inspectors reviewed the operability evaluation and discussed the results with design engineers. The design engineers performed a statistical analysis and determined that the data was within the uncertainty assumptions of the HHSI hydraulic flow model.
- Unit 2 basis for continued operation (BCO) 2-01-004, "Leading Edge Flow Meter - Reactor Thermal Power Overpower Condition," Rev. 0, addressed the potential that the feedwater flow venturi instrumentation indicated 1.5 percent below actual flow. As a result, the reactor may have been operating above the licensed power limit of 2652 megawatts thermal without the operators' knowledge. The BCO established several compensatory measures (described in Section 1R13) to verify the reactor would be operated within the licensed power level and that the various reactor protective system trip functions would remain operable. The inspectors noted that BCO 2-01-004 did not address the P-13 permissive interlock for various "at power reactor trips." The P-13 permissive interlock remained operable (within the design analysis), while technicians promptly revised the P-13 interlock setpoint. This issue was documented in CR 01-4201.

b. Findings

No findings of significance were identified.

1R17 Permanent Plant Modifications

a. Inspection Scope

The inspectors reviewed DCP 2417, "River Water Pump Seal Water Supply Enhancements," Rev. 0. The inspectors observed installation activities to ensure that the availability of the Unit 1 RW system was not adversely impacted, reviewed the post-modification testing plan and witnessed the testing. The post-modification test acceptance criteria of 1.0 gallon per minute seal water flow to the 'C' RW pump was not met. The inspectors discussed the issue with the test and design engineers who determined that the motor bearing cooling flow valve, 1-RW-668, had to be throttled in order to increase the flow to the pump seals. Since this was not originally anticipated during the development of the modification, the engineers had to revise the modification and re-perform the test. Additionally, CR 01-4087 was written to document the unanticipated design discrepancy. The inspectors reviewed the test results and determined that the corrective action to throttle 1-RW-668 was adequate to support operability of the 'C' RW pump.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed and/or observed several post-maintenance tests (PMTs) to ensure: 1) the PMT was appropriate for the scope of the maintenance work completed; 2) the acceptance criteria were clear and demonstrated operability of the component; and 3) the PMT was performed in accordance with procedures. The following PMTs were observed:

- TV-SA-105 functions to close, and isolate instrument air from the station air system upon sensing degraded station air pressure. Operators noted that the valve previously failed to fully close and may have contributed to the June 2001 Unit 1 loss of station air pressure event. Following actuator rebuild, the PMT fully stroked the valve open and closed by applying and removing air pressure from the TV-SA-105 actuator in accordance with WO 01-014787. The inspectors further verified the PMT was appropriate based on reviewing vendor manual Masoneilan, Series 35000 Camflex Valve Instructions.
- On July 9, Unit 2 control room operators identified that the 'C' steam generator AFW pump throttle valve, 2FWE-HCV100A, lost position indication from the control room benchboard and attempts to stroke the valve were unsuccessful. This valve provides containment isolation of isolating the AFW pump supply to the 'C' steam generator. The control room operators entered and met the appropriate TS and license requirements manual action statement requirements. Following emergent maintenance to replace a power supply, the operators performed the PMT in accordance with the criteria described 2OST-47.3B, "Containment Penetration and

ASME Section XI Valve Test," Rev. 23. The inspectors discussed the PMT criteria with the shift supervisor and reviewed the PMT results in the OST. Operators documented the problem in CR 01-4153.

- 1OST-7.6, "Centrifugal Charging Pump Test [1CH-P-1C]," Rev. 18, following replacement of the speed changer and motor.
- 1OST-30.1B, "1WR-P-9B Auxiliary River Water Pump Test," Rev. 21, following pump replacement and motor overhaul. Work Request 01-004452 was written to correct the inability to adjust the backup seal water supply pressure.

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

The inspectors observed and reviewed the following OSTs, concentrating on verification of the adequacy of the test to demonstrate the operability of the required system or component safety function.

- 1OST-1.1, "Control Rod Assembly Partial Movement Test," Rev. 8. The inspectors determined that corrective actions (CRs 01-1309 and 01-1385) to resolve previous inspector observations were effective at improving analog rod position indication accuracy.
- 1/2 OST 30.19, "Main and Alternate Intake Structure Silt Check and Bay Cleaning," Rev. 9

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator Verification

High Head Safety Injection and Auxiliary Feedwater Safety System Unavailability

a. Inspection Scope

The inspectors reviewed the Unit 1 and 2 performance indicators (PIs) for the HHSI and AFW systems to ensure the PIs were reported in accordance with the guidance in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 0. The inspectors verified accuracy of the reported data through reviews of the last six months (January - June 2001) of reported data, shift technical

advisors' logs, and the June 2000 shift operator logs. In addition, the following procedures were reviewed to evaluate determination of availability.

- 1OST-7.4 "Centrifugal Charging Pump Test [1CH-P-1A]," Rev. 18
- 1OST-7.6 "Centrifugal Charging Pump Test [1CH-P-1C]," Rev. 18
- 1OST-24.2 "Motor Driven Auxiliary Feed Pump Test [1FW-P-3A]," Rev. 18
- 1OST-24.4 "Steam Turbine Driven Auxiliary Feed Pump Test [1FW-P-2],"
Rev. 17
- 2OST-24.4 "Steam Driven Auxiliary Feed Pump [2FWE*P22] Quarterly Test,"
Rev. 39

In addition, the inspectors reviewed CR 00-2712 and associated corrective actions, which addressed performance weaknesses in determining safety system unavailability.

b. Findings

No Findings of significance were identified.

4OA6 Management Meetings

.1 Exit Meeting Summary

The inspectors presented the inspection results to Mr. Lew Myers and other members of licensee management following the conclusion of the inspection on August 15, 2001. The licensee acknowledged the findings presented.

The licensee did not indicate that any of the information presented at the exit meeting was proprietary.

**ATTACHMENT 1
SUPPLEMENTAL INFORMATION**

a. Key Points of Contact

T. Cosgrove	Manager, Licensing
R. Donnellon	Director, Projects and Scheduling
R. Fast	Director, Plant Maintenance
L. Myers	Senior Vice President, FENOC
M. Pearson	Director, Plant Services
F. von Ahn	Director, Plant Engineering
L. W. Pearce	Plant General Manager

b. List of Items Opened, Closed and Discussed

Opened/Closed

50-412/01-07-01	NCV	Failure to Properly Implement a Maintenance Procedure Resulting in Additional Unavailability of the Unit 2 'C' HHSI pump (Section 1R13.1)
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c. List of Acronyms Used

AC	Alternating Current
AFW	Auxiliary Feedwater
ASME	American Society of Mechanical Engineers
BCO	Basis for Continued Operation
BVT	Beaver Valley Test
CFR	Code of Federal Regulations
CR	Condition Report
CT	Cooling Tower
DCP	Design Change Package
DRP	Division of Reactor Projects
FENOC	FirstEnergy Nuclear Operating Company
HHSI	High Head Safety Injection
LIR	Latent Issues Review
MFP	Main Feedwater Pump
MR	Maintenance Rule
NCV	Non-Cited Violation
NEI	Nuclear Energy Institute
NPDAP	Nuclear Power Division Administrative Procedure
NRC	Nuclear Regulatory Commission
OM	Operating Manual
OST	Operating Surveillance Test
PI	Performance Indicator
PMT	Post-Maintenance Test
RW	River Water
SLCRS	Supplementary Leak Collection and Release System
SDP	Significant Determination Process

SSC	Structures, Systems, and Components
SW	Service Water
TM	Temporary Modification
TS	Technical Specification
WO	Work Order