January 16, 2001

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

SUBJECT: BEAVER VALLEY POWER STATION
NRC INSPECTION REPORT NO. 05000334/00-014; 05000412/00-014

Dear Mr. Myers:

On December 15, 2000, the NRC completed a team inspection of the design and performance capability of Unit 1 river water system and Unit 2 emergency alternating current system, and the evaluation of changes, tests and experiments at the Beaver Valley Power Station Units 1 and 2. The results of this inspection were discussed on December 15, 2000, with you and other members of your staff.

The inspection was an examination of 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. Within these areas, the inspection consisted of a selected examination of procedures and representative records, observations of activities, and interviews with personnel.

The NRC team identified one issue of very low safety significance (Green). The issue involved an inadequate operating procedure. This finding was determined to be a violation of NRC requirements, however, this violation was not cited due to its very low safety significance and because it was entered into your corrective action program. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington, D.C. 20555-0001; with copies to the Regional Administrator Region I; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, D.C. 20555-0001; and the NRC Resident Inspector at the Beaver Valley Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document

Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/NRC/ADAMS/index.html (the Public Electronic Reading Room).

Sincerely,

/RA by J. Linville Acting for/

Wayne D. Lanning, Director
Division of Reactor Safety

Docket Nos. 05000344, 05000412
License Nos. DPR-66, NPF-73

Enclosure:
NRC Inspection Report 05000344/2000-014 and 05000412/2000-014
Inspection Report Attachments:
(1) LIST OF DOCUMENTS REVIEWED
(2) NRC's REVISED REACTOR OVERSIGHT PROCESS
(3) LIST OF ACRONYMS USED
(4) SUPPLEMENTAL INFORMATION

cc w/encl:
L. W. Pearce, Plant General Manager
R. Fast, Director, Plant Maintenance
F. von Ahn, Director, Plant Engineering
R. Donnellon, Director, Projects and Scheduling
M. Pearson, Director, Plant Services
T. Cosgrove, Manager, Licensing
J. A. Hultz, Manager, Projects and Support Services, FirstEnergy
M. Clancy, Mayor, Shippingport, PA
Commonwealth of Pennsylvania
State of Ohio
State of West Virginia

Distribution w/encl:
Region I Docket Room (with concurrences)
D. Kern, DRP - NRC Resident Inspector
H. Miller, RA
J. Wiggins, DRA
J. Rogge, DRP
N. Perry, DRP
C. O'Daniell, DRP

Distribution w/encl **(VIA E-MAIL)**:
J. Shea, OEDO
E. Adensam, PD1, NRR
M. Gamberoni, NRR
L. Burkhart, NRR (LJB)

DOCUMENT NAME: C:\BVreport.00-14.wpd
After declaring this document "An Official Agency Record" it **will** be released to the Public.
To receive a copy of this document, indicate in the box: "**C**" = Copy without attachment/enclosure "**E**" = Copy with attachment/enclosure "**N**" = No copy

OFFICE		E				E				
	LSC			*rrr*	*rCL rrr*		

OFFICI ECO CO

U. S. NUCLEAR REGULATORY COMMISSION

REGION I

Docket Nos:	50-334, 50-412
License Nos:	DPR-66, NPF-73
Report Nos:	05000334/00-014, 05000412/00-014
Licensee:	FirstEnergy Nuclear Operating Company
Facility:	Beaver Valley Power Station
Location:	Post Office Box 4 Shippingport, Pennsylvania 15077
Dates:	November 27 - December 1, 2000, and December 11 - 15, 2000
Inspectors:	L. Cheung, Senior Reactor Inspector, Team Leader, DRS R. Bhatia, Reactor Inspector, DRS P. Bissett, Senior Reactor Inspector, DRS S. Chaudhary, Senior Reactor Inspector, DRS (part time) K. Kolaczyk, Reactor Inspector, DRS E. Lawrence, Reactor Inspector (Trainee), DRS A. Lohmeier, Senior Reactor Inspector, DRS S. Pindale, Reactor Inspector, DRS
Approved by:	Lawrence Doerflein, Chief Systems Branch Division of Reactor Safety

SUMMARY OF FINDINGS

IR 05000334-00-014; IR 05000442-00-014 on 11/27-12/15/2000; FirstEnergy Nuclear Operating Company, Beaver Valley Power Station, Units 1 & 2; Safety System Design and Functional Inspection.

The inspection was conducted by NRC region-based inspectors. The inspection team identified one green finding which was a non-cited violation of very low safety significance. The significance of issues is indicated by their color (green, white, yellow, red) and was determined by the Significance Determination Process in Inspection Manual Chapter 0609 (See Attachment 2.)

NRC Identified Findings

Cornerstone: Mitigating Systems

- Green. The inspection team identified a Non-Cited Violation for inadequate procedural guidance because no procedure was established detailing the steps for using fire protection water as an emergency backup cooling medium during a loss of normal cooling to the spent fuel pool cooling heat exchangers. In addition, the river water system design basis document stated that river water was used as an emergency backup supply for spent fuel pool cooling; however, a past design modification to this system had permanently removed the emergency backup supply connection.

  The finding was determined to be Green (of very low safety significance) using Phase 1 of the SDP because the lack of procedural guidance for using fire protection water was not the only means of cooling the spent fuel pool heat exchangers. The licensee entered the finding into the corrective action program. (Section 1R21.1.2)

TABLE OF CONTENTS

Report Details

1. REACTOR SAFETY
Cornerstones: Mitigating Systems and Barrier Integrity

1R21 Safety System Design and Performance Capability

.1 Unit 1 River Water System (RWS)

.1.1 Design - Mechanical, Electrical, and Instrumentation and Controls

a. Inspection Scope

The team reviewed the RWS design and licensing basis documents to determine the system functional requirements during normal and accident conditions. The documents reviewed included the design basis document (DBD), Technical Specifications and the Updated Final Safety Analysis Report (UFSAR), piping and instrumentation drawings (P&ID), and engineering calculations. The calculations reviewed included: 1) heat transfer calculations to verify that major heat exchangers in the system were adequately sized to provide sufficient cooling capability for component cooling and decay-heat removal during normal and accident conditions; 2) electrical voltage calculations and protective relaying to verify that reliable electrical power sources were available for system pumps and valves operations; and 3) control logic diagrams and instrument set-point calculations to verify that electrical equipment was properly controlled and operating within the required ranges.

The team also reviewed design change packages (DCPs) and technical evaluation reports (TER) associated with the RWS, including their safety evaluations and post-modification testing. The review was to verify that these design changes met the requirements of licensing bases and that these changes did not degrade the RWS functional capability or place the plant in an unsafe condition.

Also included in the team's review were the licensing basis documents of the auxiliary RWS, which was required to provide alternate cooling capability to safely shutdown the plant when the normal intake structure was disabled by a postulated design basis event (gasoline barge impact). The scope of this review included the auxiliary river water pumps and associated piping and valves.

Finally, the team conducted a field walkdown of the RWS to verify proper installation of system components. Components examined included RWS pumps and valves, piping and pipe supports, flood doors, instrument mounting and sensing line supports, operator aids, and heating and ventilation equipment in the pump rooms (required to maintain room temperature for proper electric motor operations).

b. Findings

No findings of significance were identified.

.1.2 Operations and Maintenance

a. Inspection Scope

The team reviewed normal, abnormal and emergency operating procedures for the design basis functions identified in the RWS DBD and the UFSAR. The review included procedures that dealt with not only the loss of RWS, but the use of the RWS as an alternate cooling supply to other cooling systems when normal cooling failed. Interviews were held with licensed operators to discuss the adequacy of training that they had received on the RWS. Reviews and discussions were held with training personnel regarding training that had been given to both licensed and non-licensed operators within the past two years. Simulator scenarios, system lesson plans, job performance tasks and testing material involving the RWS were also reviewed and discussed with licensed personnel as necessary. Operator actions in the field during emergency situations were reviewed and walked down with operators who simulated required actions to be taken.

The team also reviewed various maintenance-related procedures that dealt with maintenance related activities, both corrective and preventive. Also, maintenance rule reviews were performed by the team regarding the past performance and present status of the RWS, including the most recent periodic assessment of the maintenance rule program. Several discussions were held with the responsible RWS engineer in an effort to ascertain his knowledge and responsibilities concerning the RWS. The latest RWS health report was also reviewed and discussed with the system engineer. Maintenance-related RWS condition reports were also reviewed.

b. Findings

The team identified a Non-Cited Violation for inadequate procedural guidance because no procedure was established detailing the steps for using fire protection water as an emergency backup cooling medium during a loss of normal cooling to the spent fuel pool cooling heat exchangers. The finding was determined to be Green (very low safety significance) using Phase 1 of the SDP because using fire protection water was not the only means of cooling the spent fuel pool heat exchangers.

Section 2.1, Safety-Related Functions, of the RWS DBD stated that the RWS provided a hookup connection to supply temporary cooling water to the spent fuel pool (SFP) cooling system when normal cooling from primary component cooling water failed. The DBD also stated that four hours were required to connect the temporary piping. To verify this design basis function, the team reviewed alarm response procedure (ARP) 10M-20.4.AAD “Spent Fuel Pool Temp High.” The team found that the procedure was both inadequate and incorrect when describing operator corrective actions to be taken in the event component cooling water was completely lost to the SFP cooling heat exchangers (HX). Corrective actions under step 2.a of 10M-20.4.AAD stated that river water could be used to supply cooling water to the SFP cooling HX. The team found, however, that a design change package (DCP 2104) had previously removed the river water piping that was to be used as alternate cooling to the SFP cooling system, and that fire protection water system was now to be used in lieu of the RWS. Procedure ARP 10M-20.4.ADD, however, did not provide any instructions on how the fire protection

water system was to be used as an emergency source of cooling water to the SFP HXs. The inadequate procedure, ARP 10M-20.4.AAD, was a violation of technical specifications, Section 6.8.1, which states in part, "Written procedures shall be established, implemented, and maintained . . . " The safety significance was an increase in the probability of spent fuel pool boiling should a total loss of SFP cooling occur. Condition Report 00-4349 was generated by the licensee to correct the inadequacies associated with 10M-20.4.AAD, including not only the lack of specific instructions, but also the staging of equipment necessary to complete the temporary firewater system hookup to the SFP cooling system. This condition report also addressed the need to revise Section 2.1 of the RWS DBD to state that the fire protection water system would be used instead of river water as a back-up to component cooling water to the SFP cooling HX.

This finding was considered more than minor because it has a credible impact on safety. This issue is of very low risk significance because a significant heat load in the SFP only occurs for a short duration following a core off load and there are other methods available to maintain adequate level in the SFP if cooling is lost, i.e., supplying makeup water directly to the SFP from the fire protection hose reel stations located in the fuel building. This issue is being treated as a Non-cited Violation consistent with Section VI.A of the Enforcement Policy, issued on May 1, 2000 (65 FR 25368) **(NCV 05000334/2000-014-01)**.

.1.3 Surveillance and Testing

a. Inspection Scope

The team reviewed surveillance tests for the pumps and valves in the RWS and the auxiliary RWS to verify that these tests met the Technical Specifications (TS) and regulatory requirements. The reviews included test procedures and recent performance data of the three river water pumps, the two auxiliary river water pumps, the RWS check valves and motor-operated valves (including the eight containment isolation valves associated with the four recirculation spray heat exchangers). The team also reviewed the test procedures and recent test results for the heat exchanger tube side flow tests as prescribed in station procedure 1OST-30.12A&B, Trains A&B Reactor Plant River Water System Full Flow Tests (required by the TS). These tests involved the performance of the following heat exchangers: charging pump oil cooler, recirculation spray, and diesel cooling water heat exchangers.

b. Findings

No findings of significance were identified.

.2 Unit 2 Emergency Alternating Current (AC) Power System

a. Inspection Scope

The team reviewed the Unit 2 emergency AC power system design basis document (2DBD-36A), Technical Specifications, UFSAR, and design output documents to verify that the system was correctly designed and installed, and was capable of performing its intended design function as required during normal and abnormal operating conditions. The design output documents reviewed included P&ID, one-line diagrams, AC loading calculations, direct current voltage (for diesel generator and breaker controls) calculations, and relay set-point calculations. The team also reviewed the design capability of major components of the system, such as the two diesel generators and their recently modified governors, voltage regulators, diesel load sequencers, feeder breakers, and electrical protective devices including the degraded voltage and under voltage relays.

In addition, the team also reviewed diesel generator support systems, such as fuel oil, jacket and lube oil coolers, diesel starting air, and diesel room ventilation systems to determine the adequacy of their design. The team's review also included Calculation 10080-N-771, which evaluated the heat exchanger performance of Unit 2 emergency diesel generator (EDG) inter-cooler under degraded service water conditions due to possible zebra mussels entering the tube side of the heat exchangers.

Design change packages (DCP) and technical evaluations (TE) associated with the EDGs and the 4 kV emergency buses were reviewed to ensure that these changes did not degrade the functional capability of the emergency AC system. Selected condition reports associated with the emergency AC system were reviewed to verify that design issues were identified and appropriate corrective actions implemented to resolve the issues.

b. Findings

No findings of significance were identified.

.2.1 Operations and Maintenance

a. Inspection Scope

The team reviewed selected activities and procedures related to diesel generator operations and maintenance to verify that the diesel generator and the associated support systems were operated and maintained in a manner consistent with the design and licensing bases. Operational readiness and material condition of the diesel generator systems were assessed by conducting system walkdowns and reviewing procedures, component maintenance records, and system health reports. The team also interviewed selected individuals and evaluated condition reports associated with operations and maintenance deficiencies to verify that corrective actions were effective.

b. Findings

No findings of significance were identified.

.2.2 Surveillance and Testing

a. Inspection Scope

The team reviewed test procedures and recent test results, which included the diesel generator monthly surveillance and the refueling interval automatic tests (includes testing of the load sequencers) to verify that the tests met the Technical Specification requirements and licensing bases, and that the performance data met the acceptance criteria. The team also reviewed selected inservice test data and fuel and lube oil chemistry analysis results to verify that the data was consistent with Technical Specification requirements. The team observed the 2-1 diesel generator monthly test on November 29, 2000, and the 2-2 diesel generator monthly test on December 12, 2000. The 2-1 diesel generator monthly test included a troubleshooting effort related to the observed fuel rack oscillations experienced subsequent to the recent diesel generator governor system modification (DCP 2236).

b. Findings

No findings of significance were identified.

1R02 Evaluations of Changes, Tests, or Experiments

a. Inspection Scope

The team reviewed safety evaluations performed by the licensee to implement changes to the facilities and procedures as described in the UFSAR, and to verify that these changes were reviewed and documented in accordance with 10 CFR 50.59. The team reviewed nine safety evaluations, fourteen screened-out evaluations, and three procedures related to the safety evaluation process. The review was to verify that: 1) the licensee had evaluated the conditions under which the changes to the facilities and procedures could be made without obtaining a license amendment; 2) safety issues related to the changes had been resolved; and 3) the licensee's conclusions for the screened-out evaluations were correct and no unreviewed safety questions were involved. The reviews included discussions with cognizant engineering personnel, and reviews of supporting technical information, such as calculations and analyses. Additionally, the team reviewed six condition reports to verify that the licensee was identifying problems related to the effective implementation of the 10 CFR 50.59 safety evaluation program, and that the identified problems were appropriately resolved.

The following 10 CFR 50.59 safety evaluations (seven evaluations in the mitigating systems cornerstone, one in the barrier integrity cornerstone, and one in the initiating events cornerstone) were selected for review:

00-16	EDG Initial Load Starting Capability;
00-29	Safety Evaluation for Primary Side Loose Parts;
00-38	Upgrade Reactor Plant River Water Pump Safety-Related Motor and Seal Water Supply;

00-52	Post DBA Hydrogen Control System;
00-78	Replacement BVPS-2 Emergency Diesel Generator Governor System;
00-98	Freeze Seals for DCP-2385 Installation, (½ CMP-75-Freeze Seal-1M);
00-104	Evaluation of Running Two EDGs on Single Service Water Header While in Mode 5/6;
00-109	Containment Penetration 2X-99 Evaluation to Prevent Overpressurization with Partially Filled Piping;
00-113	Engineered Safety Feature Response Time.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

For the RWS and the emergency AC power systems, the team reviewed the activities for identifying, evaluating, and correcting problems as documented in the licensee's condition reports which could impact the cornerstone objectives. In addition, the team reviewed a recently completed self-assessment of Unit 1 RWS (Unit 1 RWS Internal Assessment, conducted by the licensee's Independent Safety Engineering Group, March 12 - 29, 2000) and the condition reports resulting from the group's findings (mostly related to system enhancement). The review was to verify that the identified issues were appropriately either resolved or entered into the corrective action program for timely resolution.

b. Findings

No findings of significance were identified.

4OA6 Meetings, Including Exit

The team presented the inspection results to Mr. L. Myers, Senior Vice President, and other members of licensee management at the conclusion on the inspection on December 15, 2000. The licensee acknowledged the inspection findings presented.

ATTACHMENT 1 - LIST OF DOCUMENTS REVIEWED

Design Bases Documents

1DBD-30	Design Basis Document for River Water, Auxiliary River Water and Raw Water Systems, Revision 6
2DBD-36A	Revision 4 Addenda 1, Design Basis Document for Emergency Diesel Generator System, Revision 4

Engineering Analyses and Calculations

211-MT-145	Analysis to Verify the Adequacy of EDG Fuel Oil System, Revision 5
10080-N-726	Service Water Flow - Diesel Generator Flow Curve for 2OST 36.1&2, Revision 0
10080-N-779	Main Intake Bay Silt Buildup Limits
211EN-OL-043	Determination of Flow Rate in Operating Intake Bay
10080-E-045	Diesel Generator and service transformer Ground Resistor Sizing Calculations
10080-E-048	Emergency Diesel Generator Loading with Station Blackout, Addendum A1
10080-E-74	Station Service Fault Analysis -Unit 2 (ABB 5HK-350MVA Sym. Rated for Fault 42.4 kA at 4760 and Asm. 80kA
10080-E-115	Voltage Available During Worst-Case Sequential Start of Emergency Diesel Generator
10080-E-241	Transient Analysis for Emergency Diesel Generators, Addendum A1
10080-E-201	DC System Management BAT*2-1/BAT*CHG2-1, Addendum A5
10080-E-202	DC System Management BAT*2-2/BAT*CHG2-2, Addendum A5
10080-DEC 0195	Setpoint Inaccuracy Calculation for Emergency Bus Degraded Grid-ABB-27N
8700-E-074	Unit 1 Station Service Fault Analysis, worst case-Normal plant Operation (5HK250, 250MVA; Fault current available 29.9 kA versus 37.7kA symmetrical rated-Purple train 4 kV bus), Addendum A1
8700-E221	4160 V and 480 V AC Load Management and Voltage Profile Calculation Relating Bus 1AE, Addendum A2
8700-E222	4160 V and 480 V AC Load Management and Voltage Profile Calculation Relating Bus 1DF, Addendum AX
8700-E-202	DC System Management BAT2/BAT-CHG2, Addendum A4
10080-N-771	MPR Associates Scoping Calculation of Intercooler Water Cooler and Jacket Water Cooler Heat Exchanger Performance
10080-N-771	Scoping Calculation of Intercooler Water Cooler and Jacket Water Cooler Heat Exchanger Performance - Assessment of Diesel Generator Operability
10080-N-726	Minimum Wall Thickness, SWS Pump Revised MOP - Diesel Generator Flow Curve for OST 36.1 and 2
10080-N-771	MPR Associates Scoping Calculation of Inter-cooler Water Cooler and Jacket Water Cooler Heat Exchanger Performance - Unit 2- Assessment of EDG Operability
10080-N-718	EDG Cooling Under Appendix R Configuration, Running the Alternate Diesel on a Service Water Header
8700-DMO-2353	Evaluation of Tube Plugging Limits for the Recirculation Spray Heat

	Exchangers at BVPS Unit No. 1
8700-DMC-1013	B31.1 Pipe Stress Analysis Report SCE-008-3/Qualification of Support R-152 BVPS Unit 1
8700-DMC-2353	Evaluation of Tube Plugging Limits for the Recirculation Spray Heat Exchangers at BVPS Unit 1
8700-DMC-2571	Minimum Wall and Tube Plugging Limit Calculation for CC-E-1A, 1B, 1C
8700-SP-1RW-05	River Water Supply to Primary Component Cooling Water Heat Exchangers' Low Pressure Alarm

Surveillance Tests and Maintenance Activities

2MSP-36.01E	2AE 4 kV Emergency Bus Loss of Voltage Protection Relays (27-VE200)
2MSP-36.07-E	2DF 4 kV Emergency Bus Degraded Voltage Protection Relays (27-VF3200)
2MSP-36.06-E 2DF	4 kV Emergency Bus Degraded Voltage Protection Relays (27-VF3200)
2MSP-36.06-E 2DF	4 kV Emergency Bus Degraded Voltage Protection Relays (47D)
2MSP-36.05D-E	Functional Test of 4 kV Emergency Bus
2MSP-36.00A-E	Load Shedding and Auto Sequencing of "A" Train Emergency Bus Breaker Cubicles
2MSP-36.03E	2AE 4 kV Emergency Bus Degraded Voltage Protection Relays 18 Months Calibration
MSP-36.33-E	2AE 4 kV Emergency Bus Degraded Voltage Protection Relays Surveillance Test
2MSP-36.21-E	2AE 4 kV Emergency Bus Degraded Voltage Protection Relays 18 months Calibration
2MSP-36.15A-E 2AE	4 kV Emergency Bus Diesel Start Under Voltage Protection Relays (27-VE2200)
2PMP-36-Kilowatt METER-3E	Testing Westinghouse Type K241 Kilowatt Meter (2EGS-EG 2-1 and 2-2) in Control Room Calibration
2MSP-36.41A-E	Calibration of Frequency Meter in Control Room (FM-VE210)
2MSP-36.40A-E	Calibration of Voltmeter in Control Room (VM-VE210)
21CP-36-LIS203A	2EGF*LIS203A, Emergency Diesel Generator 2-1 Fuel Tank 2EGF*TK22A Level Indicating Switch Calibration
21CP-36-LIS204A	2EGF*LIS204A, Emergency Diesel Generator 2-1 Fuel Tank 2EGF*TK22A Level Indicating Switch Calibration
21CP-36-PS202-1-1	2EGF*PS202-1, Emergency Diesel Generator 2-1 Fuel Oil Low Pressure Switch Calibration
21CP-36-PS202-2-1	2EGF*PS202-2, Emergency Diesel Generator 2-2 Fuel Oil Low Pressure Switch Calibration
21CP-36-PS203	2EGA*PS203, Emergency Diesel Generator 2-1 Air Tank Pressure Switch Calibration
OST 2.36.3	Emergency Diesel Generator [2EDG2-1] Automatic Test (18 months basis) Revision 14, dated October 18, 2000
3BVT 2.36.3,	SBO Cross-Tie Operational Test, Revision 0, dated October 13, 1997
1OST-30.12B(ISS2)	Train B Reactor Plant River Water System Full Flow Test, Issue 2
1OST-30.12A (ISS2)	Train A Reactor Plant River Water System Full Flow Test - Unit 1
WO 00-008530-000	Primary Plant Component 1CC-E-1A Cooling Water Heat Exchanger Maintenance Unit 1 - 6/19/00

WO 00-000137-000	1-RCBX Recirculation Spray Coolers Heat Exchanger 1A Maintenance, Unit 1- 3/01/00
WO 99-211769-000	1-RBX-718 Recirculation Spray Cooler Heat Exchanger 1A Support Maintenance Unit1- 7/07/99
2RO8	Eddy Current testing of Unit 2 Recirculation Spray Heat Exchangers 2RSS-E21B and 2RSS-E21D - 10/26/00
1BVT 01.39.07	Beaver Valley Unit 1, Station Battery No. 2 Capacity (60 Months Interval) Test, Revision 2, November 4, 1997
1BVT 01.39.01	Beaver Valley Unit 1 Station Battery No. 1 Service Test, Revision 3, April 1, 2000
1BVT 01.39.02	Beaver Valley Unit 1 Station Battery No. 2 Service Test, Revision 3, March 22, 2000
1OST-30.2	Reactor Plant River Water 1A Test, Revision 21
1OST- 30.1A	(1WR-P-9A) Auxiliary River Water Pump Test, Revision 20
1OST-30.4	Reactor Plant River Water System Valve Test for A Header, Revision 17
1OST-3012A	Train A Reactor Plant River Water Full Flow Test, Revision 14
1OST -30.14	Stroke Test of River Water Valves, Revision 8
1OM-30.4AJ	BV-1 Asiatic Clam and Zebra Mussel Chemical Treatment Program, Revision 10
1/2OST-30.21A	Group 1 Flood Door System Operability Check, Revision 0
1/2OST-30.21B	Group 2 Flood Door System Operability Check, Revision 0
CM 2-3.61	EDG New Fuel Oil Shipment, Revision 6
CM 2-3.62	EDG Fuel Oil Day Tanks [EGF-TK22A, 22B], Revision 4
CM 2-3.63	EDG Fuel Oil Storage Tanks [2EGF-TK21A, 21B], Revision 8
2OST-36.1	Emergency Diesel Generator [2EGS*EG2-1] Monthly Test, Revision 29
2OST-36.2	Emergency Diesel Generator [2EGS*EG2-2] Monthly Test, Revision 30
2OST-36.3	Diesel Generator [2EGS*EG2-1] Automatic Test, Revision 14
2OST-36.4	Diesel Generator [2EGS*EG2-2] Automatic Test
2502.190-230-001	Operation and Maintenance Manual - EDG (Vendor Manual)
2OM-36.4.U	Filling an EDG Fuel Oil Storage Tank
2OM-36.4.AA	Barring the EDGs
2OM-36.4.ADL	Jacket Coolant Level Low
2OM-36.4.ADY	Jacket Coolant Temperature Low
2OM-36.4.AEA	Fuel Oil Pressure Low
2OM-36.4.AED	Jacket Coolant Temperature High
00-027588-000	Load Sharing and Speed Controller for EDG 2-1, Work Order
SPEAP 2.4	System and Performance Engineering Administrative Manual - River/Service Water System Control and Monitoring Program - Revision 1 - 4/05/00
SPEAP 2.4	2EGS-E22ATube Side Heat Exchanger Inspection Sheet - 10/11/00
SPEAP 2.4	2EGS-E21ATube Side Heat Exchanger Inspection Sheet - 10/12/00
EE-E-1A	Attachment 3, Tube Side, Heat Exchanger Inspection Sheet - 4/16/95
EE-E-1B	Attachment 3, Tube Side, Heat Exchanger Inspection Sheet - 4/20/00
CH-E-7C	Attachment 2, Tube Side, Heat Exchanger Inspection Sheet - 3/4/00

Operating and Training Procedures

10M-20.4AAD	Spent Fuel Pool Temp High, Revision 2

10M-53A.1.2-H	Makeup to PDWST[1WT-TK-10], Revision 2
ECA-0.0	Loss of All Emergency 4KV AC Power, Revision 5
E-0	Reactor Trip or Safety Injection
AOP 1.30.2	River Water/Normal Intake Structure Loss, Revision 2
10M-29.4H	Initiating River Water Backup Cooling to the Containment Recirculation Cooling Coils, Revision 0
10M-53C.4.1.30.2	River Water/Normal Intake Structure Loss, Revision 2
AOP2-1	Response to Loss of AFW Pump Suction Flow, Revision 2
JPM1PL-074	Locally Make-up to the SFP, Revision 0
LP# 1LP-SIM-CP	Primary Cooling System, Revision 3
LP# 1LP-SIM-CS	Secondary Cooling, Revision 1
LP# 04-11-003	Loss of Annun &VB2/RCS Problems, Revision 0
LP# LP-LOT-V-11	Loss of River Water (Scenario 3), Revision 6
LP# LP-LOT-V-17	Plant operation at Power with Malfunctions, Revision 3
LP# 08-02-346	Turbine Plant River Water System, Revision 9
LP# LP-SQS-CP	Primary Cooling Systems, Revision 3
LP# 04-12-006	Plant Status Update, Revision 1
LP# 08-02-347	Reactor Plant River Water System, Revision 8
LP# 02-02-312	NLOR - River Water System, Revision 11
LP# 1/2LP-NLRT-030	River/Service Water Systems, Revision 3

Design Change Packages (DCP)

DCP 2126	DG Jacket Water Overcooling Resolution, Revision 1
DCP 2236	Replacement of BVPS-2 EDG Governor System, Revision 0
DCP 2255	Replacement of the actuator and valve components of MOV-RW-102C1 to provide weak link of 2,200 ft.-lbs.
DCP 2400	Modification of the Seal Water Design for the River Water Pumps with a larger “Y” Strainer in parallel with a Lakos Separator to improve the Safety-Related means of lubricating each reactor plant river water pump seal along with cooling its associated motor bearings.
DCP 2173	Water Piping Supply and Return Replacement - 2/28/95
DCP 2173	50.59 Replacement of Unit 1 River Water Piping to Control Room Air Conditioners and Backup Cooling Coils - 3/29/95
DCP 2126	50.59 Unit 2 Jacket Water Over Cooling Resolution for the EDG
DCP 2316	Degraded Grid Protection Shorting Switches
DCP2308	Revising the MCC Circuit Breaker Size for WR-P40A

Technical Evaluation Reports (TER)

TER-11291	Setting Changes Instrument Overcurrent 2CCP-P21A, B, C
TER-11349	4KVS-2B4 Trip Coil Replacement
TER-11691	EDG Load Step 2 Time Delay Evaluation
TER-11796	Degraded Grid Under voltage Relay Allowable Value Change
TER-12111	Evaluation of BV-2 EDG Operating Frequency
TER-13264	Replacement Temperature Switches for TR-2A, TR-2B, TR-2C, and TR-2D
TER-12039	Acceptance Criteria for EDG Load Rejection Tests
TER-13077	EDG Load Starting Capability
TER 12388	DeZurick 8" Butterfly Valve Model Replacement With NIMCO
TER 12651	Replacement Vacuum Breaker Check Valves
TER 12703	Replacement for 20" Mission Duo-Check Valve
TER 12775	Reorientation of MOV-1RW-102B1 Seat to Upstream Side of Valve
TER 12383	BW/IP Documentation Update for 2{ 600 psi Y-Check Kerotest Valve
TER 12853	Evaluate Replace Rockwell McCanna 10" Butterfly With Bray Valve and Controls
TER 13249	River Water Pump Minimum Operating Point Change
TER 12,771	EDG Required Service Water Flow Curve for 2OST 36.1&2
TER 12048	QA Category Reclassification for Pipelines ACC-34 and WR-461 and Valves CCR-306, CCR-307, and CCR-308
TER 11603	Component Equivalent Design Change - Pipe Support Modification
TER 12726	Piping Material Change (Saran Lined to PTEE Lined)
TER 11698	Incorrect ASTM Material Shown on Butterfly Valve Drawing
TER 12771	EDG Required Service Water Flow Curve for 2OST-36 1& 2
TER 13518	Addition of Inlet Isolation Valve and Piping at 2EGS-EG2-1-GOV & 2egs-EG2-2-GOV DG Governor Oil Cooler
TER-11910	WR-S-2 Replacement Motor
TER-013203	MOV-IRW-114A Motor Replacement (5FT-LB)
TER-13399	Revision to the River Water Pump Seal Pressure Switch (PS-1RW-105A, B, C) Setpoints

Safety Evaluations and Applicability Reviews

1OST–13.10B	Vibration Points Added in Vibration Program
2OST-1.11D	Safeguard Protection Train A CIAGO Test
1MSP-36.05A-E	1A RCP 4 kV Bus Under voltage Relay 27-VA 100 Functional Test
TER- 13243	Contractor Change for Stock # 0900056-2C
2MSP-43.37B-1	Steps for Performing Alternate Sampling in HP Procedure
½-ADM-1332	Maintenance Supervisor Training Program
DCP-2114	Main Generator Voltage Regulator Adjuster Modification
TER-13250	Part No. Change for Transformer Cooling Fan Motor
NPDAP 2.1	General Instruction, New Procedure ½-AM-010
QSP-5.5	Instruction for Preparation and Revision of NDE and Test Procedures
DCP-2255	MOV-RW-102 Performance Improvement 1OM-7.4.N (TCN 1-00-429) The Change to Assure Adequate River Water Flow is Available

2PMP-29CDS-CHL23A-B-C-1E	Centrifugal Liquid Chiller Maintenance
NPDAP 8.18	10 CFR 50.59 Evaluations, Revision 10, dated November 1, 2000
NPDAP 7.3	Final Safety Analysis Report Update, Revision 5, dated January 1, 2000

Condition Reports

00-0531	Adequacy of RWS Lift Settings
00-1372	SWOPI Report Unresolved Issues
00-1373	RWS Valves Have Excessive Leakby
00-1374	Reactor Water System Vacuum Breaker Location
00-1375	IST Stroke Time Questions
00-1377	Evaluate Cathodic Protection Scheme
00-1378	Biocide Treatment Needs Assessment
00-1440	Rubber Expansion Joint Program Review
99-2821	EDG Jacket Water Temperature Range
00-1263	Control Switch for 2EDF-P22B Found Off
00-2047	2SWS-408 Found Corroded in the Shut Position
00-2068	Maintenance Rule Self Assessment BV-SA-0059 (EDG Performance Criteria)
00-3325	Zebra Mussel Shells Found in 2EDG-E22B
00-3463	Speed Control Issues With New Governor
00-03534	Improper Internal Ports in New EDG Governors
00-3723	EDG 2-1 Failed Auto Load Test
00-1300	Bypassed QC Verification of the root pass of welds for DCP 2400
00-1281	Improper drilling for core bore activities for DCP 2400
00-0528	Unit 1 “B” River Water Pump (WR-P-01B) problems
00-0531	Unit 1 “B” & “C” River Water Pumps (WR-P-01B & 1C) problems
00-0606	Unit 1 Check valve WR-P-1C leaking in the reverse direction
00-0909	Unit 1 Failure of Relief Valves (RV-1CC-109 & RV-1CC-116A) to lift at established lift setpoints
00-1186	Unit 1, Failure of “B” Recirc Spray Heat Exchanger (HX) and the “A” Emergency Diesel Generator HX Relief Valves to lift at design lift setpoints.
00-1213	Raw Water Pump Discharge Isolation MOV-1RW-110B leaking by
00-1002	1C River Water Pump performance issues due to Silt
00-2722	River Water Main Intake Structure regarding Silt levels
97-0819	Issued to evaluate assumptions made in initial River Water Main Intake Bay Allowable Silt Levels
00-3808	Excessive amounts of clams noted in Intake Bay during 1/20ST-30.19 - 10/23/00
00-1439	Heat Exchanger Inspection Program - 4/5/00
00-0142	Failure to Evaluate Safety Significance of Equipment Problem
00-1934	EMS not Found During Periodic Review of Open Items
00-2031	Maintenance Use of Work Order Feedback not up to Maintenance Standard
00-2932	Train A Standby Service Water Exceeds MPFF Limits
00-3712	Through-wall Leak in the Body of 2SWC-DCV 116
00-3885	Procedural Torquing Discrepancy

Drawings

10080-RM-72B (Rev. 14)	Flow Diagram - Diesel Generator Auxiliary Systems
10080-RM-436-4A (Rev. 6)	Diesel Cooling Water
10080-RM-436-4B (Rev. 7)	Diesel Cooling Water
10080-RM-436-5A (Rev. 5)	Diesel Generator Lube Oil
10080-RM-436-5B (Rev. 6)	Diesel Generator Lube Oil
10080-RM-72A (Rev. 18)	Flow Diagram - Fuel Oil and Compressed Air - Emergency Diesel Generator
10080-RM-436-2 (Rev. 3)	Diesel Air Intake, Exhaust and Vacuum
10080-RM-436-1, Rev. 4	Diesel Fuel Oil
4792-1, Rev. 1	42" O.D. Starting Air Tank
NS6124A, Rev. III	Emergency Generator Fuel Oil Day Tank
S6092, Rev. VD	Diesel Generator Fuel Oil Storage Tank
8700-1SH0068A, Rev. 2	River Water System Cable Vault Area
8700-1SH0069B-4, Rev. 4	River Water System Auxiliary Building
8700-1SH0128B2, Rev. 3	River Water System Auxiliary Building
RM-530-1, Rev. 16	River Water System
RM-530-2, Rev. 15	River Water System
RM-530-3, Rev. 16	River Water System
08700-04.021-0021, Rev. A	Recirculation Spray Cooler, Outline Drawing, BVPS Unit 1
08700-04.021-0023, Rev. A	Recirculation Spray Cooler, Bundle Assembly, BVPS Unit 1
C-6301-1 Rev. C	Recirculation Spray Cooler
8700-2.19-35	Diesel Generator Heat Exchanger Assembly for EE-1A
08700-107-A	Tubesheet Map, Charging Pump Lubrication Oil Cooler
08700-10.1-45D	Forced Circulation Air Cooling Coils VS-E-1A, B, C, E-2A, B, C, E-4A, B, C
08700-04.21-0003	Recirculation Spray Coolers Tube Sheet & Bundle Details
08700-04.21-0001	Recirculation Spray Coolers Setting Plan
8700-RE-21KW, Rev. 5	Electrical and Control Schematic Diagram River Water Pump WR-P-1A and 1B
8700-RE-21KX, Rev. 4	Electrical and Control Schematic Diagram River Water Pump WR-P-1C
8700-RE-21LA, Rev. 6	Electrical and Control Schematic Diagram for River Water Recirc. Spray HT EXG WTR HDR Valves for MOV-RW-103A, B, C, and D
10080-RE-1F, Sh. 3, Rev. 19	4160V One Line Diagram
10080-RE-1AR, Rev. 18	125V DC One Line Diagram for Bus 2AE (SH. 1)
10080-E-12B, Sh. 2, Rev. 18	Elementary Diagram Diesel Generator 2-2 Auto Loading
8700-RE-21LA, Rev. 6	Electrical and Control Schematic Diagram for River Water Recirc.

ATTACHMENT 2 - NRC's REVISED REACTOR OVERSIGHT PROCESS

The federal Nuclear Regulatory Commission (NRC) recently revamped its inspection, assessment, and enforcement programs for commercial nuclear power plants. The new process takes into account improvements in the performance of the nuclear industry over the past 25 years and improved approaches of inspecting and assessing safety performance at NRC licensed plants.

The new process monitors licensee performance in three broad areas (called strategic performance areas): reactor safety (avoiding accidents and reducing the consequences of accidents if they occur), radiation safety (protecting plant employees and the public during routine operations), and safeguards (protecting the plant against sabotage or other security threats). The process focuses on licensee performance within each of seven cornerstones of safety in the three areas:

Reactor Safety	Radiation Safety	Safeguards
● Initiating Events	● Occupational	● Physical Protection
● Mitigating Systems	● Public	
● Barrier Integrity		
● Emergency Preparedness		

To monitor these seven cornerstones of safety, the NRC uses two processes that generate information about the safety significance of plant operations: inspections and performance indicators. Inspection findings will be evaluated according to their potential significance for safety, using the Significance Determination Process, and assigned colors of GREEN, WHITE, YELLOW or RED. GREEN findings are indicative of issues that, while they may not be desirable, represent very low safety significance. WHITE findings indicate issues that are of low to moderate safety significance. YELLOW findings are issues that are of substantial safety significance. RED findings represent issues that are of high safety significance with a significant reduction in safety margins.

Performance indicator data will be compared to established criteria for measuring licensee performance in terms of potential safety. Based on prescribed thresholds, the indicators will be classified by color representing varying levels of performance and incremental degradation in safety: GREEN, WHITE, YELLOW, and RED. GREEN indicators represent performance at a level requiring no additional NRC oversight beyond the baseline inspections. WHITE corresponds to performance that may result in increased NRC oversight. YELLOW represents performance that minimally reduces safety margins and requires even more NRC oversight. And RED indicates performance that represents a significant reduction in safety margins but still provides adequate protection to public health and safety.

The assessment process integrates performance indicators and inspection so the agency can reach objective conclusions regarding overall plant performance. The agency will use an Action Matrix to determine in a systematic, predictable manner which regulatory actions should be taken based on a licensee's performance. The NRC's actions in response to the significance (as represented by the color) of issues will be the same for performance indicators as for inspection findings. As a licensee's safety performance degrades, the NRC will take more and increasingly significant action, which can include shutting down a plant, as described in the Action Matrix.

More information can be found at: http://www.nrc.gov/NRR/OVERSIGHT/index.html.

ATTACHMENT 3 - LIST OF ACRONYMS USED

AC	Alternating Current
ARP	Alarm Response Procedure
CFR	Code of Federal Regulations
CR	Condition Report
DBD	Design Basis Document
DCP	Design Change Package
EDG	Emergency Diesel Generator
HX	Heat Exchanger
NCV	Non-Cited Violation
NRC	Nuclear Regulatory Commission
P&ID	Piping & Instrument Diagrams
SDP	Significance Determination Process
SFP	Spent Fuel Pool
RWS	River Water System
TER	Technical Evaluation Reports
UFSAR	Updated Final Safety Analysis Report

ATTACHMENT 4 - SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Boyle	System Engineer
R. Fast	Director, Maintenance
M. Gerber	Latent Issue Manager
C. Hawley	Manager, Design Engineering
D. McBride	System Engineer
N. Morrison	System Engineer
L. Myers	Senior Vice President, Nuclear
L. Pearce	Station Manager
M. Ressler	Acting Supervisor, Design Basis
B. Sepelak	Senior Licensing Supervisor
F. VonAhn	Director, Plant Engineering

INSPECTION PROCEDURES USED

IP 71111.02	Evaluation of Changes, Tests, or Experiments.
IP 71111.21	Safety System Design and Performance Capability.

ITEMS OPENED, CLOSED AND DISCUSSED

05000334/2000-014-01	NCV	Inadequate procedure for supplying alternate cooling to the SFP in the event that component cooling water was lost.