

July 1, 2003

MEMORANDUM TO: Neil Perry, Acting Chief
Projects Branch 7
Division of Reactor Projects

THRU: James C. Linville, Chief **/RA/**
Electrical Branch
Division of Reactor Safety

FROM: Christopher G. Cahill, Electrical Branch **/RA/**
Division of Reactor Safety

SUBJECT: FEEDER FOR BEAVER VALLEY INSPECTION REPORT
50-334/03-003 and 50-412/03-003

During the week of June 16 - 20, 2003, two inspectors from the Division of Reactor Safety and a contractor performed the biennial inspection of permanent plant modifications and the evaluation of changes, tests and experiments. The inspection was performed in accordance with inspection procedure 71111, Attachment 17 and Attachment 02.

The inspection was conducted by the following personnel:

Chris Cahill	Senior Reactor Inspector, Electrical Branch, Lead Inspector
Sammy McCarver	Reactor Inspector, Systems Branch
Ray Cooney	Contractor

Cover Letter Input

No input.

Summary of Findings Input

No findings of significance were identified.

Attached is the feeder for inspection report 50-334/03-003 & 50-412/03-003.

cc w/attachments:

W. Lanning, DRS
R. Crlenjak, DRS
D. Kern, DRP
P. Maccaglia, DRP
DRS File

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OFFICE	RI/DRS		RI/DRS						
NAME	CCahill		JLinville						
DATE	06/27/03		06/27/03						

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Report Details

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R02 Evaluations of Changes, Tests, or Experiments (IP 71111.02)

a. Inspection Scope

The inspectors reviewed eight selected safety evaluations associated with initiating event, mitigating, and barrier integrity cornerstones to verify that changes to the facility or procedures as described in the UFSAR were reviewed and documented in accordance with 10 CFR 50.59, and that the safety issues pertinent to the changes were properly resolved or adequately addressed. These safety evaluations were selected based on the safety significance of the changes and the risk to structures, systems and components.

The inspectors also reviewed seventeen screen-out evaluations for changes, tests and experiments for which the licensee determined that safety evaluations were not required. This review was performed to verify that the licensee's threshold for performing safety evaluations was consistent with 10 CFR 50.59.

In addition, the inspectors reviewed the administrative procedure that was used to control the screening, preparation, and issuance of the safety evaluations to ensure that the procedure adequately covered the requirements of 10 CFR 50.59.

The listing of the safety evaluations and screen-out evaluations reviewed is provided in **Attachment 1**.

a. Findings

No findings of significance were identified.

1R05 Fire Protection (IP 71111.05)

1. Post-fire Safe Shutdown Manual actions

a. Inspection Scope

The inspectors reviewed evaluation 50.59-01-003, for BVPS Unit 2. The evaluation reviewed an update to the Fire Protection Safe Shutdown Report to document spurious signal analysis for ventilation system components. The inspectors utilized the guidance provide in IP 71111.05, enclosure 2, to evaluate the acceptability of the new manual actions. Factors, such as timing, access to the equipment, diagnostic instrumentation and the availability of procedures, were considered in the inspectors' review. The team also reviewed condition report (CR) 02-00921 that identified problems with the application of manual actions.

b. Findings

The team identified an unresolved item concerning the acceptability of the licensee's use of manual actions to remotely operate equipment or defeat spurious actuations necessary for achieving and maintaining hot shutdown. This is unresolved pending completion of the licensee's validation of fire protection time critical manual actions.

USFAR section 9.5A.1.2.1.2.8, states "If manual actions are required these actions must be performed by onsite personnel within the necessary time interval without adversely affecting safe shutdown."

The inspectors utilized IP 71111.05, enclosure 2, "Inspection Criteria for Fire Protection Manual Actions" to evaluate the application of manual actions as described in USFAR section 9.5A.1.2.1.2.8. The IP provides guidance for the assessment of manual actions including diagnostic instrumentation, environmental considerations, staffing, communications, special tools, training, accessibility, procedures, verification and validation. In particular, the verification and validation guidance states "Determine whether the manual actions have been verified and validated by plant walkdowns using current procedures. Ensure that the licensee has adequately evaluated the capability of operators to perform the manual actions in the time available before the plant will be placed in an unrecoverable condition."

The inspector reviewed CR 02-00921, which identified that the BVPS Unit 2, Fire Protection Safe Shutdown Report and associated safe shutdown procedures did not clearly identify critical actions which must be accomplished within prescribed time frames. The inspectors concluded that an assessment of the manual actions could not be completed until the licensee had analyzed and validated the critical fire protection safe shutdown manual actions which must be accomplished within prescribed frames. This issue has been entered into the licensee's corrective action program as corrective action (CA) 13, to CR 02-00921. This issue will remain unresolved pending the licensee's validation of fire protection time critical manual actions. **(URI 50-412/03-003-01)**

1R17 Permanent Plant Modifications (IP 71111.17)

a. Inspection Scope

The inspectors reviewed nine selected risk-significant plant modification packages to verify that: (1) the design bases, licensing bases, and performance capability of risk significant Structures, Systems or Components (SSC) had not been degraded through modifications; and, (2) modifications performed during increased risk configurations did not place the plant in an unsafe condition. The modification packages were selected from among the design changes that were completed within the past two years.

The selected plant modifications were distributed among initiating event, mitigating, and barrier integrity cornerstones. For these selected modifications, the inspectors reviewed the design inputs, assumptions, and design calculations, such as instrument set-point, instrument uncertainty, and electrical loading calculations, to determine design

adequacy. The inspectors also reviewed field change notices that were issued during the installation to confirm that the problems associated with the installation were adequately resolved. In addition, the inspectors also reviewed the post-modification testing, functional testing, and instrument calibration records to determine readiness for operations. Finally, the inspectors reviewed the affected procedures, drawings, design basis documents, and UFSAR sections to verify that the affected documents were appropriately updated.

The listing of the reviewed modifications is provided in **Attachment 1**.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

a. Inspection Scope

The inspectors reviewed CRs associated with 10 CFR 50.59 issues and plant modification issues to ensure that the licensee was identifying, evaluating, and correcting problems associated with these areas and that the corrective actions for the issues were appropriate. The inspectors also reviewed two self-assessments related to 10 CFR 50.59 and plant modification activities at Beaver Valley.

The listing of the condition reports and self assessments reviewed is provided in **Attachment 1**.

b. Findings

No findings of significance were identified.

4OA5 Meetings, including Exit

The inspectors presented the inspection results to Mr. L. W. Pearce, Site Vice President, and other members of licensee management at the conclusion of the inspection on June 20, 2003. The licensee acknowledged the inspection findings presented.

SUPPLEMENTAL INFORMATION

Key Points of Contact

Licensee

G. Cacciani	50.59 Program Manager
C. Mancuso	Engineering Change Program Owner
M. Manolerar	Design Engineering
D. Mickinac	Regulatory Affairs
L. Pearce	Site Vice President
G. Ritz	Engineering Assessment Board Chairman
F. Oberlitner	Design Engineering

NRC

D. Kern, Senior Resident Inspector, Beaver Valley

a. Items Opened, Closed, and Discussed

Opened

50-412/03-03-01	URI Validation and Verification of Manual Actions not Complete (Section 1R05)
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b. List of Acronyms Used

ARV	automatic recirculation valves
BVPS	Beaver Valley Power Station
CFR	Code of Federal Regulations
CR	condition reports
ECP	engineering change package
EDG	emergency diesel generator
FENOC	First Energy Nuclear Operating Company
HHSI	high head safety injection
IP	inspection procedure
NCV	non-cited violations
PI&R	problem identification and resolution
RG	Regulatory Guide
SE	safety evaluation
SSC	structures, systems or components
SWS	service water system
TBD	to be determined
TS	Technical Specifications
UFSAR	Updated Final Safety Analysis Report

Attachment 1**Documents Reviewed****Modifications**

ECP 02-0040 Determine Minimum Number of Tensioned Reactor Head Studs to Commence Reactor Fill and Vent
 ECP 02-0077 Removing Blocking Diodes from Rod Control Circuits
 ECP 02-0183 Install Feedwater Isolation Valve to Support Power Up-rate
 ECP 02-0063 Replacement of the No. 4 Vital Bus Inverter
 ECP 02-0253 Replace 6 inch Service Water Piping with 4 inch Piping
 ECP 02-0514 Modify Fire Damper
 ECP 02-0731 Change the Fuses in the Control System Power Cabinet
 TER 1355 Update Unit 2 Fire Protection Safe Shutdown Report to Document Spurious Signal Analysis for Ventilation System

10 CFR 50.59 Safety Evaluations

00-019 Installation of Mechanical Clamp on BVPS-2 Atmospheric Steam Dump
 00-081 Revise UFSAR Section 8.4
 00-113 Engineering Safety Feature Response Times
 01-003 Update Unit 2 Fire Protection Safe Shutdown Report to Document Spurious Signal Analysis for Ventilation System
 01-2854 Install Automatic Recirculation Control Valves (ARV) at Discharge of HHSI/Charging Pump 2CHS*P21C
 02-2417 Replace Service Water System 6 inch Supply and Return Headers to Control Room Chillers.
 03-0294 Unit 1 Feedwater Isolation Valve Installation
 03-0655 Turbine Missile Analysis

10 CFR 50.59 Screening Evaluations

02-2590 Replacement of Service Water System 6 inch Supply and Return Headers to Control Room Chillers
 02-3127 Inverter No. 4 Replacement
 02-3318 Replace Voltage Regulator
 02-3521 Connection of Newly Installed Service Water Lines from the Control Room
 02-3679 Install 3/4 inch Branch Line on 2-SWS-006-164-3 for ECP 02-0253
 02-3946 Install 3/4 inch Branch Line on 2-SWS-006-163-3 for ECP 02-0253
 03-1327 Transformer Tap Changes
 03-1335 Vital Bus Inverter Voltmeter
 03-1427 Battery Equalizing Charge
 03-1436 EDG Monthly Test
 03-1581 Main Generator Loss of Field Relay Setting Change
 03-1605 Possible Circuit Anomaly EDG 1-2 During Sequence Test
 03-1793 Return to Service 4KV Emergency Bus 1DF
 03-1870 7300 Power Supply Change

03-2145 Safeguards Train A Miscellaneous
 03-2145 Oil Filter Pressure Switch GO Test
 03-0294 Unit 1 Feedwater Isolation Valve Installation

Self-Assessments

Nuclear Quality Assessment: 10 CFR 50.59 Evaluations, dated February 28, 2003
 Engineering Assessment Board, Product No. ECP 02-0214

Corrective Action Reports

01-3399, 01-4509, 01-0758, 02-7268, 02-09517, 02-2996, 02-7927, 02-7928, 02-6733, 03-5404

Procedures

DE-DG-005, Engineering Assessment Board, Revision 0
 ½-ADM-1902, Fire Brigade, Revision 0
 ½-ADM-2007, Operational Acceptance of Engineering Change Packages, Revision 4
 2OM-56B.3.B.3, Fire Prevention and Control, Pre-Fire Strategies, Revision 14
 NOP-CC-2001, Design Verification, Revision 1
 NOP-CC-2002, Design Input, Revision 1
 NOP-LP-4003, Evaluation of Changes, Tests and Experiments, Revision 0

Miscellaneous

BVPS-2 Fire Safe Shutdown Report
 Unit 2 Drill Report 2OM-56C, Post-Fire Alternate Shutdown from Outside of the Control Room
 NUREG-1057, Supplement No. 5, Safety Evaluation Report Related to the Operation of Beaver
 Valley Power Station Unit 2