



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

July 29, 2005

Tennessee Valley Authority
ATTN: Mr. K. W. Singer
Chief Nuclear Officer and
Executive Vice President
6A Lookout Place
1101 Market Street
Chattanooga, TN 37402-2801

SUBJECT: BELLEFONTE NUCLEAR PLANT - NRC INSPECTION REPORT NOS.
50-438/05-01 AND 50-439/05-01

Dear Mr. Singer:

On June 29, 2005, the NRC completed an annual inspection at your Bellefonte Units 1 and 2 reactor facilities. The enclosed report documents the inspection results which were discussed on June 29, 2005, with Mr. M. Phillippe and other members of your staff.

The purpose of the inspection was to determine whether equipment preservation activities authorized by the construction permits were conducted safely and in accordance with NRC requirements. Specific areas examined during the inspection are identified in the report. Within these areas, the inspection consisted of selected examinations of procedures and representative records, interviews with personnel, and observation of layup equipment in operation. Your layup and preservation program was found to be effective with no significant problems identified. However, based on the results of this inspection, one Severity Level IV violation of NRC requirements was identified resulting from failure to follow procedures for preventive maintenance. However, the NRC is treating this finding as a non-cited violation (NCV) consistent with Section VI.A of the NRC Enforcement Policy. If you contest the NCV in this report, 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, DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, United States Nuclear Regulatory Commission, Washington, DC 20555-0001. In accordance with 10 CFR 2.390 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).

TVA

2

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Sincerely,

/RA/

Stephen J. Cahill, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Docket Nos. 50-438, 50-439
Construction Permit Nos. CPPR-122, CPPR-123

Enclosure: NRC Inspection Report 50-438/05-01 AND 50-439/05-01
w/Attachment - Supplemental Information

cc w/encl: (See page 3)

TVA

3

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-438 and 50-439
Construction Permit Nos: CPPR-122 and CPPR-123

Report No: 50-438/05-01 and 50-439/05-01

Applicant: Tennessee Valley Authority (TVA)

Facility: Bellefonte Nuclear Plant, Units 1 & 2

Location: Bellefonte Road
Hollywood, AL 35752

Dates: June 28 - 29, 2005

Inspectors: R. L. Monk, Resident Inspector, Browns Ferry

Approved by: S. J. Cahill, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000438/2005-001, IR 05000439/2005-001; 6/28-29/2005; Bellefonte Nuclear Plant, Units 1 & 2; Routine Layup Inspection.

This annual inspection was to review the layup and maintenance of plant systems and the review of various plant records. This was an announced routine inspection conducted by one visiting Resident Inspector. Based on the results of this inspection one finding of significance was identified. The inspectors concluded that, overall, the applicant's layup and preservation program had been effective.

Inspection Results - Maintenance

- During a plant walkdown, the inspector noted aging issues associated with the battery cells on the vital batteries, and small quantities of accumulated water in the Unit 1 Auxiliary Building. (Section 1)
- A Severity Level IV Non-Cited Violation was identified during the current inspection for failure to maintain the proper oil level in several safety-related pumps, as required by the applicant's Preventive Maintenance Program. (Section 2)

Enclosure

Report Details

Summary of Plant Status

Bellefonte Nuclear Plant (BLN) Units 1 and 2 remain in a deferred construction status as described in a July 14, 2000, Tennessee Valley Authority (TVA) letter to the NRC regarding confirmation of construction deferral status. The majority of piping systems remain in dry lay-up with the exception of fire protection-related systems, chiller and associated support systems, and those systems required to support operation of the Unit 1 emergency diesel generators.

1.0 Plant Walkdowns

a. Inspection Scope (92050)

The inspector toured selected portions of the turbine building, auxiliary building, Units 1 and 2 reactor buildings, the intake structure, and Units 1 and 2 diesel generator buildings to evaluate the lay-up and preservation condition of selected safety-related equipment. During these tours, the inspector observed the proper operation of installed dehumidifiers and checked various safety-related components. Proper housekeeping practices and other control measures were verified to be in place. Selected safety-related components were checked by the inspector for external condition and protective covering, where necessary. Electrical motors and generators checked by the inspector were verified to be warm, with either internal heaters or heat tape energized. The following specific components were inspected:

- Unit 1 Component cooling 1A, 1B, and 3A pumps and motors
- Unit 1 Diesel generators (DGs) 1A and 1B
- Unit 1 High pressure injection (HPI) 1A, 1B, and 3B pumps and motors
- Unit 1 Reactor building spray 1A and 1B pumps and motors
- Unit 1 Decay heat removal 1A and 1B pumps and motors
- Unit 1 Motor-driven auxiliary feed water (MDAFW) 1A and 1B pumps and motors
- Unit 1 Turbine-driven auxiliary feed water (TDAFW) pump
- Unit 2 Component cooling 2A, 2B, and 3A pumps and motors
- Unit 2 Decay heat removal 2A and 2B pumps and motors
- Unit 2 HPI 2A and 2B pumps and motors
- Unit 2 Reactor building spray 2A and 2B pumps and motors
- Unit 2 MDAFW 2A and 2B pumps and motors
- Unit 2 TDAFW pump
- Unit 2 DGs 2A and 2B
- Unit 1 Vital battery rooms
- Unit 2 Vital battery rooms
- Unit 1 ERCW pumps and motors
- Unit 2 ERCW pumps and motors

Note: 2 ERCW motors and 1 pump removed

Enclosure

b. Observations and Findings

The inspector noted that some battery cells were continuing to show signs of impending failure (cell structure was buckled) on the vital batteries. One of two battery channels for each train of each unit is functioning. The other four channels have been removed from service with one battery charger per unit functioning. The inspectors verified that battery condition was monitored daily during operator rounds and ventilation of the battery rooms was maintained. Resources to dispose of aged batteries in 2005 have been used to remove approximately 100 of 120 construction transformers. These transformers represented an immediate threat of leakage onto plant grounds. The inspector was informed that the applicant still planned to dispose of the aged battery cells at some future date and to provide an alternate means of providing 125-VDC control power for switchgear as required.

Minor amounts of accumulated water were noted on the floor in both the Unit 1 Decay Heat Removal (DHR) pump rooms and the 2B Motor Driven pump room on elevation 590' in the Auxiliary Building. The water accumulation appeared to be from ground water intrusion. Service Request 2539 was issued to remove the water from these rooms and re-install a plastic cover on the Unit 2 HPI pump, which had been removed.

The inspector verified that motor heat was applied to all of the motors inspected.

No findings of significance were identified.

2.0 Preventive Maintenance Program

a. Inspection Scope (92050)

The inspector reviewed the applicant's Preventive Maintenance (PM) Program to determine adequacy of the program for maintaining systems in lay-up. Maintenance of the applicant's layup and preservation program relies on performance of PM. Examples of PM performed under this program include motor heat verification, shaft rotation, component external inspections, system lay-up valve lineups, and humidity checks. Specific PM requirements were specified in the BLN Maintenance Code Book, Revision 94. Site personnel have performed approximately 4,500 to 5,500 scheduled PM activities on an annual basis, depending on the schedule requirements. The inspector reviewed the results of the applicant's program for verification of system dry lay-up by performance of drain valve checks and humidity checks. Verifications involved routinely opening drain valves at designated low points in each system to check for the presence of moisture. Humidity checks involved sampling system flow paths for relative humidity.

The inspector reviewed documentation associated with various PM requirements that were completed by site personnel during the period of July 2004 - June 2005, including a review of applicable portions of the BLN Maintenance Code Book which specified the PM requirements. The inspector also reviewed completed PM records to verify that the PM requirements had been satisfied and that actions had been initiated to address any

discrepancies which were identified during performance of the PM. In addition, the inspector reviewed documentation for selected inspection intervals of the PM activities to verify that the frequencies were performed on schedule.

The following PM records were reviewed:

Component	PM Codes	Work Performed
1KC-MPMP/EMOT-001-A	010, 052, 160, 625, 115, 202	Oil level checks, oil sample checks, shaft rotation, visual inspection of external/internal surfaces and clean as necessary.
1ND-MPMP/EMOT-002-B, Decay Removal Pump and Motor	243, 533, 115, 160, 202	Rotate pump/motor shaft, run aux lube pump, perform visual inspection of external/internal surfaces and clean as necessary. Verify motor heat.
1CA-MPMP/EMOT-001-A Aux Feed Water Pump and Motor	022, 243, 155, 201, 625, 115	Rotate pump/motor shaft, verify oil level, perform visual inspection of external/internal surfaces and clean as necessary and verify motor heat.
1RT-MDSL-001-1A4 Unit 1 A EDG Jacket Water Chemistry	592	Verify correct concentration of NALCO in the Jacket Water.
1NV-MPMP/EMOT-003-B, High Pressure Injection Pump and Motor	115, 243, 533, 151, 202	Run aux oil pump, rotate pump/motor shaft, verify oil levels, perform visual inspection of external/internal surfaces and clean as necessary and verify motor heat.
1NS-MPMP/EMOT-001-A, Reactor Building Spray Pump and Motor	243, 116, 160, 202	Perform visual inspection of external/internal surfaces and clean as necessary, verify oil levels, rotate pump/motor shaft and verify motor heat.
1RT-MDSL-001-1A1 Unit 1 A EDG	048, 539	Lubricate barring device, lubricate and inspect governor linkage.
1CA-MPMP/EMOT-002-B Aux Feed Water Pump and Motor	022, 243, 155, 201, 625, 115	Rotate pump/motor shaft, verify oil level, perform visual inspection of external/internal surfaces and clean as necessary and verify motor heat.

1NS-MPMP/EMOT-001-B, Reactor Building Spray Pump and Motor	243, 116, 160, 202	Perform visual inspection of external/internal surfaces and clean as necessary, verify oil levels, rotate pump/motor shaft and verify motor heat.
2KC-MPMP/EMOT-002-B	010, 052, 160, 625, 115, 202	Oil level checks, oil sample checks, shaft rotation, visual inspection of external/internal surfaces and clean as necessary.

b. Observations and Findings

The inspector noted a significant reduction in the scope of the PM program and reduction in staffing since the previous inspection. Staff levels have been reduced to 12 from a previous level of 28 and annual PM activities performed from 12,000 to 15,000 to approximately 4,500 to 5,500 PM activities performed annually. The inspector determined that certain types of PM activities had remained the same. These included PM activities with respect to fire protection or detection equipment, humidity verification of primary systems, and water intrusion verification at stainless steel drain valves. In addition, the applicant plans to continue previous PM activities on selected high economic value components such as HPI pumps and motors, DHR pumps and motors, Component Cooling Water (CCW) pumps and motors, Reactor Building Spray pumps and motors, AFW pumps and motors, Emergency Diesel Generators (EDGs), and Vital Batteries. Also, the applicant continues to run the dehumidification system on the secondary components, but will do no humidity verifications. The inspector concluded that these changes met the requirements of the applicants Quality Assurance Plan. Specifically, Revision 13 to the applicant's QA plan, as approved by NRC letter dated May 28, 2004, incorporated a change to the applicant's layup program which provided the applicant the flexibility to terminate layup PMs on selected equipment without further notice to the NRC, provided that the inactive layup status of the affected equipment was entered into the applicant's corrective action program. The inspector noted that PER BLP040006, which had been issued on October 25, 2004, documented the entry of the affected components as having an inactive layup status.

During the walkdown of selected components in the Auxiliary Building, the inspector noted that there was no visible oil level in the sight glass for one or both bearings on the 1A MDAFW Pump Motor, 1B MDAFW Pump Motor, 1B Reactor Building Spray Pump Motor, and 1A CCW Pump Motor. In addition, the 2B CCW Pump Motor had no visible oil level with oil present on the floor under the pump. All large safety-related motors were required by the Bellefonte PM program to be maintained with the proper oil level as specified in the BLN Maintenance Code Book. Maintenance Code No. 115 requires that personnel check lubricant level for the above motors every six months and refill if low. As a result of these observations, the applicant issued PER BLP050005 to address lack of proper oil level in safety-related motors. In addition, the oil present near the 2B CCW pump was included in Service Request 2539.

Enclosure

Based on a review of the applicant's PER investigation results and discussions with applicant personnel, the inspector determined that the failure to maintain proper oil level was of low safety significance. All safety-related motors will require refurbishment and testing if the applicant resumes construction at the site. The investigation also determined that the safety-related motors were checked by a inexperienced member of the staff who was unfamiliar with the specific PM requirements and he did not properly service them at the last PM interval. A Severity Level IV NCV 50-438,439/2005-01-01, Failure to Follow Preventive Maintenance Instructions, was identified. This violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. These events were documented by the licensee in PER BLP050005.

3.0 Exit Meeting Summary

The inspectors presented the inspection results to Mr. M. Phillippe, Operations and Maintenance Manager, and other members of staff on June 29, 2005. The inspector asked the applicant whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified. The applicant acknowledged the findings presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Applicant Staff

S. Patterson, System Engineer
M. Phillippe, Operations and Maintenance Manager

ITEMS OPENED AND CLOSED

Opened and Closed

50-438,439/05-01-01	NCV	Failure to Follow Preventive Maintenance Instructions (Section 2.0b).
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Closed

None

LIST OF DOCUMENTS REVIEWED

- NRC Letter regarding Quality Assurance Program Changes, May 28, 2004
- TVA Nuclear Quality Assurance Plan, TVA-NQA-PLN89-A, Revision 13
- TVA Nuclear Quality Assurance Plan, TVA-NQA-PLN89-A, Revision 14
- Generic Letter 87-15, Policy Statement on Deferred Plants
- TVA Memorandum dated July 1, 1988, transmitting Draft Quality Assurance Plan for Deferred Plants/Units
- TVA Letter dated July 14, 2000, BLN Nuclear Plant Units 1 & 2 and Watts Bar Nuclear Plant Unit 2 - Confirmation of Construction Deferral Status
- TVA Letter dated December 13, 1999, BLN Nuclear Plant - PM reductions for manpower leveling
- BLN Engineering Requirements Specification Manual
- BLN Maintenance Code Book, Revision 94
- Site Specific Procedure (SSP) - 9.90, Preventative Maintenance for Long Term Lay-up, Revision 3
- PER BLP040006, Change to layup scope
- PER BLP050005, Failure to perform PM requirements