

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos: 50-438 and 50-439
License Nos: CPPR-122 and CPPR-123

Report No: 50-438/99-02 and 50-439/99-02

Applicant: Tennessee Valley Authority (TVA)

Facility: Bellefonte Nuclear Plant, Units 1 & 2

Location: Bellefonte Road
Hollywood, AL 35752

Dates: December 14-15, 1999

Inspector: William C. Bearden, Reactor Inspector
J. Starefos, Resident Inspector, Browns Ferry

Approved by: P. E. Fredrickson, Chief
Reactor Projects Branch 6
Division of Reactor Projects

Enclosure

EXECUTIVE SUMMARY

Bellefonte Nuclear Plant, Units 1 & 2
NRC Inspection Report 50-438/99-02, 50-439/99-02

This inspection was conducted to review the layup and maintenance of plant systems and the review of various records. The report covers a two day period of an announced routine inspection by a regional reactor inspector. Overall, the inspector concluded that the applicant's layup and preservation program had been effective.

Maintenance

- Layup and preservation of equipment was acceptable (Section M2.1).
- Site personnel had continued to make a dedicated effort toward supporting the Preventive Maintenance (PM) Program which has remained effective in maintaining systems in layup (Section M8.1).

Report Details

Summary of Plant Status

Although TVA submitted to the NRC a letter, dated March 23, 1993, stating their intent to resume construction activities, no construction related activities have been conducted. The majority of piping systems, except chiller systems and the fire protection system which are operational, remained in dry layup. Essentially all Unit 1 electrical distribution systems are complete and available for use. System engineers are assigned to systems and are responsible for maintaining the layup conditions and evaluating issues that arise.

Temporary cooling water is supplied to the Unit 1 emergency diesel generators (EDGs) to allow the use of these EDGs as needed to assist in meeting temporary electrical distribution system peak load demand periods.

II. Maintenance

M2 Maintenance and Material Condition of Facilities and Equipment

M2.1 Plant Walkdowns

a. Inspection Scope (92050)

The inspector toured selected portions of the plant and reviewed the layup and preservation of safety-related equipment.

b. Observations and Findings

The inspector toured portions of the auxiliary building, turbine building, Unit 1 and Unit 2 reactor buildings, and Unit 1 diesel generator building. During these tours the inspector observed the proper operation of installed dehumidifiers and checked various safety-related components. Proper housekeeping practices and rodent control measures were verified to be in place. Safety-related components were checked by the inspector for external condition and protective covering, where necessary. All electrical motors and generators checked by the inspector were verified to be warm, with either internal heaters or heat tape energized. The following components were inspected:

Unit 1 and Common Components

Unit 1 Diesel Generators 1A and 1B
Decay Heat Removal Pump 1A Motor 1ND-EMOT-001A
Reactor Building Spray Pump 1A Motor 1NS-EMOT-001A
Motor Driven Auxiliary Feed Water Pump 1A Motor 1CA-EMOT-001A

Unit 2 Components

Decay Heat Removal Pump 2B Motor 2ND-EMOT-002B
Reactor Building Spray Pump 2B Motor 2NS-EMOT-002B
MU/HPI Pump 1A Motor 2NV-EMOT-001A

MU/HPI Pump 2A Motor 2NV-EMOT-002A
Control Rod Drive 2A Motor Generator 2NR-EMOT-017
Control Rod Drive 2B Motor Generator 2NR-EMOT-018
Steam Generator Circulation Pump 2A Motor 2CR-EMOT-002A

Additionally, the inspector observed the external condition of the roofs of the auxiliary building, Unit 1 diesel generator building, and the Unit 1 main steam valve room. No evidence of roof damage, degradation or accumulation of significant amounts of debris were observed by the inspector during this inspection. There was evidence of some rain leakage observed from inside the turbine building. However, the inspector did not identify any examples of leakage which represented an immediate threat to the condition of plant equipment.

c. Conclusions

No deficiencies were identified during the inspector's tour of the above areas. The inspector concluded that the layout and preservation of equipment observed during the tour was acceptable.

M8 **Miscellaneous Maintenance Issues**

M8.1 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 layout. Maintenance of the applicant's layout and preservation program relies on performance of many PMs. Examples of PMs performed under this program include motor heat verification, shaft rotation, component external inspections, system layout valve lineups and humidity checks. Specific PM requirements were specified in the Bellefonte Maintenance Code Book, Rev. 93.

b. Observations and Findings

The inspector reviewed the applicant's program for performance of PMs and determined that the applicant had continued to place strong emphasis on performance of PM items. Fewer than .08% of scheduled PMs were late during Fiscal Year (FY) 1999. Site personnel had performed approximately 19,000 scheduled PM items on an annual basis. The site goal was no missed PMs and no more than 1% late PMs.

The inspector reviewed the results of the applicant's program for verification of system dry layout 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. These checks were performed as part of the applicant's PM Program. The inspector determined that the applicant had performed 232 drain valve checks

during FY 1999. No moisture was found during any check. This was consistent with previous decreasing trends with moisture found for five drain valve checks during FY 1995, one drain valve check during FY 1996, and no drain valve checks during FYs 1997 and 1998. Nineteen paths with relative humidity greater than 40% were identified out of 1518 paths checked during FY 1999. This was consistent with previous trends with relative humidity above 40% for 53 paths checked during FY 1995, 19 paths checked during FY 1996, six paths checked during FY 1997, and 15 paths checked during FY 1998.

The inspector reviewed documentation associated with various PM requirements that were completed by site personnel during the period from June - November 1999. This review included a review of applicable portions of the Bellefonte Maintenance Code Book which specified the PM requirements. The inspector then reviewed the records for completed PMs to verify that the PM requirements had been satisfied in accordance with the documented requirements and that actions had been initiated to address any discrepancies which were identified during performance of the PM. The following completed PM records were reviewed:

PM item number	PM Codes	Work performed
0NM-EMOT-003-B/01	N/A	check motor insulation resistance
0RF-MFCV-Z51/01	601	fire protection dry pipe supervised alarm test and general inspection
0VK-SAMP-005	N/A	sample system and analyze for ammonia and dissolved oxygen concentrations
1CA-MPMP-003-Q	022, 052	check lubrication level, visual inspection of oil for color and contamination, inspect internal bearing housing surface for water and corrosion, clean and grease as necessary
1IX-IXPC-003	230	perform external visual inspection for damage and corrosion
1KE-MH-1A1-1A10	N/A	inspect manholes for presence of water
1NI-EPEN-065-B	177	check containment electrical penetration for as-found nitrogen pressure, recharge to maintain 15 to 58 psig

2R5-CPCW-001/1	558	inspect containment tendons for grease leakage from vertical tendons in tendon gallery, clean up leakage, document any leakage
ROOF-INSP-1	N/A	perform inspection of auxiliary building roof
ROOF-INSP-10	N/A	perform inspection of Unit 1 diesel generator building roof
ROOF-INSP-11	N/A	perform inspection of Unit 2 diesel generator building roof
ROOF-INSP-18	N/A	perform inspection of Unit 2 main steam valve room roof
ROOF-INSP-26	N/A	perform inspection of Unit 1 reactor building roof
ROOF-INSP-27	N/A	perform inspection of Unit 2 reactor building roof

The inspector reviewed documentation for selected inspection intervals of the above PM activities and determined that the frequencies were performed on schedule.

Additionally, the inspector reviewed the results of selected periodic roof inspections. The inspector determined that applicant's PM program included inspections of the roof for each permanent structure on a semiannual basis. During those inspections applicant personnel had inspected the roof for evidence of damage, degradation, drainage problems and presence of debris which might cause blockage of roof drains. The inspector noted that these inspections had resulted in identification of conditions which if left uncorrected could have resulted in degradation of the roofs for several permanent structures. In each case roof repairs or other actions were completed to correct the problem. Based on this review the inspector determined that the applicant's program for periodic inspections of roofs of permanent structures was adequate.

c. Conclusions

The applicant's program for periodic inspections of roofs of permanent structures was adequate. Site personnel continued to make a dedicated effort toward supporting the PM Program which has remained effective in maintaining systems in layup. This was evident from discussions with site personnel and from the fact that fewer than .08% of scheduled PMs were late during FY 1999.

V. MANAGEMENT MEETINGS**X1 Exit Meeting Summary**

The inspectors presented the inspection results to members of applicant management at the conclusion of the inspection on December 15, 1999. The applicant acknowledged the findings presented.

PARTIAL LIST OF PERSONS CONTACTED**Applicant**

J. Blackburn, Nuclear Assurance & Licensing Manager
R. Davis, System Engineer
G. Lyle, System Engineer
M. Phillippe, Operations and Maintenance Manager

LIST OF INSPECTION PROCEDURES

IP92050: Review of Quality Assurance for Extended Construction Delay