



UNITED STATES  
 NUCLEAR REGULATORY COMMISSION  
 REGION II  
 101 MARIETTA STREET, N.W.  
 ATLANTA, GEORGIA 30303

AUG 24 1984

Report Nos.: 50-438/84-14 and 50-439/84-14

Licensee: Tennessee Valley Authority  
 500A Chestnut Street  
 Chattanooga, TN 37401

Docket Nos.: 50-438 and 50-439

License Nos.: CPPR-122 and CPPR-123

Facility Name: Bellefonte 1 and 2

Inspection Dates: July 23-27, 1984

Inspection at Bellefonte site near Scottsboro, Alabama

Inspector: C. M. Upright for 8/21/84  
 R. W. Wright Date Signed

Approved by: C. M. Upright 8/21/84  
 C. M. Upright, Section Chief Date Signed  
 Division of Reactor Safety

SUMMARY

Inspection on July 23-27, 1984

Areas Inspected

This routine unannounced inspection involved 40 inspector-hours on site in the areas of licensee actions on previous inspection findings, QA inspection of civil (concrete) activities, followup on previously identified items, and licensee identified (10 CFR 50.55(e)) items.

Results

Of the four areas inspected, no violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*L. S. Cox, Project Manager
- \*P. C. Mann, Nuclear Licensing Unit Supervisor
- \*J. T. Barnes, Office of QA Section Supervisor
- \*D. E. Nixon, Civil QC Units A & B Supervisor (CQC)
- \*H. C. Johnson, Assistant Quality Manager, Hanger, Mechanical, Welding
- \*D. Smith, Assistant Construction Engineer, Mechanical/Welding
- R. G. Delay, Hanger, QC Unit Supervisor (HQC)
- M. R. Richardson, Instrumentation, QC Unit Supervisor (IQC)
- V. L. Parde, Engineering Equipment Calibration Group Leader
- R. M. Roy, Concrete & Soils QC Group Leader
- S. F. Cooper, Batch Plant QC Inspector
- J. K. Sanford, Concrete Placement QC Inspector
- J. E. McFarland, Jr., Concrete Placement QC Inspector
- D. R. McBee, Concrete Testing QC Inspector
- R. A. Rowland, Concrete Testing QC Inspector
- J. Wilkins, Assistant Manager of Construction, Knoxville

Other licensee employees contacted included construction craftsmen, technicians, site engineers, QA/QC, and office personnel.

#### NRC Resident Inspector

- \*J. W. York

\*Attended exit interview.

### 2. Exit Interview

The inspection scope and findings were summarized on July 27, 1984 with those persons indicated in paragraph 1 above. The licensee acknowledged the following inspection finding:

Inspector Followup Item 438, 439/84-14-01: Inconsistent Identification of a Nonconformance

### 3. Licensee Action on Previous Enforcement Matters (92702 B)

(Closed) Violation 438, 439/83-30-01: Failure to Correct Conditions Adverse to Quality in a Timely Manner. This matter is closed based on the corrective actions specified in the licensee's final report dated April 25, 1984, which were verified by the NRC inspectors during Watts Bar inspections 50-390/84-40 and 50-391/84-34 and based on the release of a TVA policy statement (OQA840613005) issued by the Manager of Power which stresses the importance and responsibility attached to this issue.

(Closed) Violation 438, 439/83-30-03: Failure to Issue Audits Within Required Timeframe

(Closed) Violation 438, 439/83-30-04: Failure to Respond to Audits Within Required Timeframe

(Closed) Violation 438, 439/83-30-05: Failure of Lead Auditors to Meet Requirements of ANSI N45.2.23

(Closed) Violation 438, 439/83-30-06: Failure to Maintain Auditor and Lead Auditor Qualifications Records

(Closed) Violation 438, 439/83-30-07: Failure to Procedurally Incorporate That Persons Contacted be Included Into Audit Report.

The above violations identified as generic to all TVA plants are closed based on the corrective actions specified in the licensee responses dated February 15 and 22, 1984 and April 25, 1984. These corrective actions were verified by NRC inspectors during Watts Bar inspections 50-390/84-40 and 50-391/84-34. The rationale and justification specified for closure in the Watts Bar reports are also satisfactory for closure of the above Bellefonte violations.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. QA Inspection of Civil (Concrete) Work Performance (35061B)

The inspector examined the concrete placement, field testing activities, batch plant operations, laboratory activities, related field drawings and procedures, and QC inspection activities for two small interior auxiliary building wall placements (Concrete Pour Nos. A16-2aC(P); A16-3M), and for an intake pumping station roof placement No. IPS-2-6R. This inspection was conducted to determine whether site work was being performed in accordance with NRC requirements and SAR commitments, the QA/QC program was functioning in an effective manner to assure requirements and commitments are met, and that prompt and effective action was taken to achieve permanent corrective action on significant discrepancies.

- a. The following acceptance criteria were examined to verify the inspection objectives:

TVA Drawings

4AW0315-X1-1, R16, Auxiliary Building Units 1 & 2, Concrete Floor Slab El 649 & Walls to El 668

BKW0201-X1-01, R8, Concrete Intake Pumping Station Outline

## Bellefonte Nuclear Plant QC Procedures

BNP-QCP-5.2, R7,	Batch Plant Inspection
BNP-QCP-5.3, R7,	Concrete Placement
BNP-QCP-5.4, R7,	Concrete Curing & Repair
BNP-QCP-5.9, R2,	Testing Fines, Specific Gravity & Absorption of Concrete Aggregates
BNP-QCP-5.10, R5,	Free Moisture & Gradation of Fine & Coarse Aggregates
BNP-QCP-5.11, R3,	Sampling, Consolidating & Testing Concrete Compressive Strength Test Specimens
BNP-QCP-5.12, R4,	Concrete Slump & Air Control Testing
BNP-QCP-5.14, R3,	Storage of Concrete Material
BNP-QCP-10.4, R11,	Control of Nonconformances
BNP-QCP-10.11, R10,	Calibration of Measuring & Test Equipment
BNP-QCP-10.43, R0,	Inspection Rejection Notice

The inspector reviewed the above listed procedures and drawings for the subject concrete placement operations to determine if the latest revisions were employed and in agreement with the SAR. Procedures were also examined to determine if they adequately described critical points and methods of placement as well as inspection and test hold points which properly reflect design intent.

## b. Field Inspection

The inspector found the forms to be tight, clean, and level. Observations indicated that rebar and embeds were properly installed and clean. Placement activities pertaining to delivery time, free fall, flow distance, layer thickness, rate of placement, and consolidation of concrete conformed to specifications. Concrete activities were continuously monitored by QC personnel. In-process sampling of concrete for strength testing, temperature, slump, unit weight, and air content met frequency requirements and acceptance criteria. The inspector observed the concrete foreman and craftsmen at work and discussed concreting activities with them. Examination of batch plant operations and material storage facilities revealed that these activities were being conducted in a quality manner.

## c. Quality Control

The inspector reviewed the following inspection records associated with the subject concrete placements to determine their adequacy, whether deficiencies submitted by QC inspection received proper corrective action where applicable, and if work and work controls were adequate:

Concrete pour card, inspector placement reports, concrete material tests (cylinder data sheet), sieve analysis of fine & coarse aggregates, testing of materials finer than No. 200 sieve, free

moisture testing results, mixing plant inspection report, and the daily plant-mixing report.

The inspector reviewed the applicable QA/QC procedures (paragraph 5a.) to determine if the frequency, timing, and acceptance criteria for the inspection was adequate. The number of QC inspectors provided for the coverage of the subject placement was satisfactory. Discussions were conducted with randomly selected batch plant, laboratory testing, placement, and in-process testing inspectors to determine if their knowledge of the activities they were inspecting was adequate and to determine whether they felt their findings and concerns received proper management attention. The Region II inspector concluded that licensee management was attentive and responsive to QC inspector identified problems. The concrete inspectors interviewed were knowledgeable of their inspection functions and acceptance criteria and were proficient in the performance of their assigned tasks.

Examination of the subject inspectors training, qualification, and certification records revealed that these personnel were well qualified in the duties they performed.

d. Nonconforming Item Reports (NCRs)

The inspector reviewed selected reports of construction discrepancies for various concrete activities to verify that the corrective action accomplished the following:

- (1) Corrected the items
- (2) Determined the cause of the deficiency
- (3) Considered reportability to NRC
- (4) Instituted effective action to prevent recurrence

Nonconforming reports reviewed included the following:

NCR Nos. 3326, 3093, 2802, 2747, 2744, 2729, 2712, 2572, 2572, and 2263. Problems were not identified with the handling of these NCRs.

The inspector determined through discussion with various QC supervisors that they were not unanimous in agreement as to whether a hypothetical case involving failure to follow procedure required an NCR to be written or not. The scenario which caused disagreement involved an item of test equipment used in safety-related construction work which was not recalibrated in the time frame required per procedure. Some supervisors felt that the need for an NCR was predicated upon whether the test equipment was actually found out of calibration when eventually checked. Others felt an NCR should be written regardless of the true status of calibration. The reason for this disagreement seems to stem from broadly interpreting the procedure intent. Section 2.2

Attachment E to BNP-QCP-10.4, RII, and QAP 15.1 Attachment D states in part, "The following examples are not considered nonconformances: Variance from procedural requirement which does not affect quality." The three examples that follow in the procedure are all minor record type discrepancies. However, the hypothetical case presented involved the integrity of safety-related hardware.

The inspector stated that this hypothetical case should be identified as an NCR in that even if luck prevailed (i.e., the test equipment was found in calibration), the licensee should be concerned as to why their control system allowed this incident to happen in the first place. The inspector further stated that any discrepancy involving safety-related activities had to be identified, documented, evaluated for possible upgrading (significant condition), properly corrected, and trended in some manner to help prevent recurring conditions. The classification the licensee chooses to give these discrepancies (deviation, discrepancy, NCR, inspection rejection notice, minor NCR, QCIR, subordinate nonconformance, etc.) is of no concern to the NRC as long as it receives this type consideration.

Subsequent discussion with a Knoxville supervisor responsible for procedure writers verified that the hypothetical case should have been identified as an NCR. The inspector was also informed that TVA procedure writers who are continually upgrading and enhancing their procedure program were scheduled to visit the Bellefonte site next week to work on revising several procedures including nonconformance control to reflect the current mode of doing business. They also plan to consider any problems concerning interpretation of procedures and their implementation and will resolve the inspector's concern. This item was identified to the licensee at the exit meeting as Inspector Followup Item 438, 439/84-14-01, Inconsistent Identification of a Nonconformance.

e. Materials and Equipment

Examination of the batch plant indicated that materials were being controlled and accurate batch records were being generated. Storage of materials (aggregates, cement, and admixtures) were observed to be in accordance with specification requirements. Batch plant activities were continuously monitored by a QC inspector. The inspector examined the in-process concrete testing equipment utilized for this placement, the concrete batch plant scales, and various laboratory testing equipment for current calibration evidence.

## f. Surveillances

The inspector reviewed the following surveillance reports which were performed on various phases of concreting operations:

C04-S-84-0417	Grout Mixing and Batching
C04-S-84-0453	Concrete Testing
C04-S-84-0359	Concrete Repairing
C04-S-84-0454	Concrete Placement
BLNS 18.10	Concrete Curing and Form Placement
S-84-0360	Concrete Reinforcing Steel
S-84-0557	Procedures and Instructions

The above surveillances were examined to determine if they were meaningful, effective, reflect quantity performance, and whether corrective actions taken as a result of audit findings were proper, timely, and complete.

Within this area, no violations or deviations were identified.

## 6. Inspector Followup Items (IFIs) (92701 B)

(Closed) IFI 438, 439/84-10-01: IRN Corrective Action Responsibility. BNP-QCP 10.43 Rev 0, Addendum No. 2 revised the subject procedures to state, "If the failed inspection cannot be restored to the condition specified on the approved design drawings utilizing existing approved site procedures, the responsible craft foreman contacts engineering for resolution." The responsibility for IRN corrective action is now specified in the subject procedure.

(Closed) IFI 438, 439/83-15-03: Performing Permanent Changes Using T10 Procedures. Revision 4 to Procedure BNP-QCP-10.8 was a complete rewrite and restructure of the subject procedure which now appropriately describes the method for controlling conditional release type changes.

## 7. Licensee Identified Items (10 CFR 50.55(e)) (92700 B)

(Closed) CDR 438/81-67, 439/81-66 (M81-09, Def. No. 1, 81-31-03): No Division of Engineering Design System to Ensure QA Procedures Are Issued Before Work Begins. The final report was submitted on April 20, 1983. The report has been reviewed by Region II and determined to be acceptable. The inspector reviewed EN DES-EP 1.01, Preparation and Processing of EN DES Engineering Procedures and EN DES-EP 1.02, Preparation and Processing of Branch/Design Project Engineering Procedures. The inspector verified that the revised procedures issued on May 18, 1982, required that EN DES Branches and projects establish a system to identify quality-related activities and prepare procedures to address these activities before the need to perform the activity. All branches/design projects involved in the design of Bellefonte have implemented the requirements of EN DES-EPs 1.01 and 1.02. Additionally, a QA training course entitled, Indoctrination In the Use of

EN DES Procedures, was established and has been periodically presented since October 17, 1981, to help prevent recurrence of the problem.

(Closed) CDR 438/81-30, 439/81-33 (BLN QA B 8101, 81-15-10): Generic Implications of Failure to Implement Design Criteria in Design Drawings. The final report was submitted on October 14, 1982. The report has been reviewed and determined to be acceptable by Region II. The inspector reviewed supporting documentation (Closed NCRs BLN BLP 8003, 8010, 8101, 8016, 8106, 8110, 8118, 8119, 8222, 8235, 8312, and 8321) to verify that corrective actions identified in the report have been completed. The inspector accepts TVA's explanation that the problem involved implementation of the design review process rather than a programmatic breakdown.

(Closed) CDR 438/82-57, 439/82-51 (GENNEB 8208): Voiding of ECNs Without Proper Review. The licensee submitted to Region II a final report on September 12, 1983, and a revised final report on this matter dated October 13, 1983. These reports have been reviewed and determined to be acceptable. The inspector examined Revision 12 and current Revision 15 to EN DES EP 4.02 and verified that it now requires any EN DES Branch which initially reviewed the ECN to review the voidance of the ECN. Also, EN DES EP 4.02, Revision 15, and EP 2.06, Revision 6, contain the requirement that an unresolved safety question determination (USQD) be performed to determine if there are any safety impacts on other approved ECNs due to voiding an ECN. An investigation into ECNs which might have previously been voided without proper review has been completed by TVA and revealed that no problems exist at Bellefonte plant.