

U. S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT

REGION IV

Report No. 50-556/79-03; 50-557/79-03

Docket No. 50-556; 50-557

Category A1

Licensee: Public Service Company of Oklahoma
Box 201
Tulsa, Oklahoma 74102

Facility Name: Black Fox Station, Units 1 & 2

Inspection at: Black Fox Station Site

Inspection conducted: May 30 - June 1, 1979

Inspector:

J. I. Tapia
J. I. Tapia, Reactor Inspector, Engineering Support
Section

6/20/79
Date

Reviewed:

W. G. Hubacek
W. G. Hubacek, Reactor Inspector, Projects Section

6/20/79
Date

Approved:

W. A. Crossman
W. A. Crossman, Chief, Projects Section

6/20/79
Date

R. E. Hall
R. E. Hall, Chief, Engineering Support Section

6/20/79
Date

Inspection Summary:

Inspection on May 30 - June 1, 1979 (Report No. 50-556/79-03; 50-557/79-03)

Areas Inspected: Routine, unannounced inspection to observe construction activities; review construction status; review development of concrete mix designs; review QA audits; witness concrete seal slab placement; observe excavation and geologic mapping activities; witness foundation rebound monitoring; and review receiving inspection procedures. The inspection involved twenty inspector-hours by one NRC inspector.
Results: No deviations were identified.

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DETAILS

1. Persons Contacted

Principal Applicant Employees

*J. Angle, Superintendent of Construction
*H. H. Eller, Site QA Superintendent
*G. W. Geren, Site QA Engineer - Civil/Structural
*J. L. Haynes, Site QC Superintendent
*M. W. Johnson, Site QA Engineer - Audits
R. J. Kime, Manager, BFS Construction
*J. B. Perez, Manager, Quality Assurance
F. J. Pollard, Site QA Engineer - Civil

Other Personnel

S. Bruce, Geologist, Shannon & Wilson
D. Clayton, Geologist, Shannon & Wilson
W. J. Costa, Civil Engineer, Black & Veatch
J. F. Donnelly, Site Liaison Civil Engineer, Black & Veatch
S. Fakhry, Senior Mix Design Engineer, U. S. Testing
K. Rademacher, Site Supervisor, U. S. Testing
S. Tomoath, QC Manager, J. A. Jones
C. Wilkinson, Civil Engineer, Black & Veatch

The IE inspector also interviewed other applicant employees including members of the QA/QC staffs.

*Denotes those attending the exit interview.

2. Applicant Action on Previous Inspection Findings

(Closed) Unresolved Item (50-556/79-02; 50-557/79-02): Site Receiving Inspection. The unresolved item pertaining to receiving records, identified in the NRC Report No. 79-02, was reviewed during this inspection. Procedure FPPM 3.3, "Site Receipt Inspection," has subsequently been revised to include procedural requirements for the attachment of final source surveillance waivers to the "Quality Control Release for Shipment" (QCRS) forms and for the completion of the "Pre-Established Records Checklist" (PRC) forms. The procedure now states that, "if equipment/material arrives at the site without PSO procurement QA representative signature, a waiver must be attached and a receipt inspection must be performed." The procedure also requires that upon notification of shipment arrival, the PRC be checked to verify that it is properly marked to indicate the status of the attached documents. The procedure further states that "items received short of the requirement documentation or with inadequate documentation shall be placed on hold." Based on the revisions to the procedure, this item is considered resolved.

(Closed) Unresolved Item (50-556/79-02; 50-557/79-02): Concrete Mix Design. The unresolved item pertaining to concrete mix design, identified in the NRC Report No. 79-02, was reviewed during this inspection. The contract specification with U. S. Testing has been revised by Description of Change Document (DCD) No. 187. The DCD states that, "the acceptance criteria of the resulting trial mixes shall be $\pm$ 0.5 percent of the maximum allowable air content and $\pm$ 0.5 inches of the maximum allowable slump permitted by the specification." This revision to the specification conforms with American Concrete Institute Building Code Requirements for reinforced concrete. Based on this revision, this item is considered resolved.

3. Concrete Mix Design

A review was conducted of the Mix Design Test Information for concrete Class C-2. The following documents for this 4000 pound per square inch mix were specifically reviewed:

- a. Concrete Trial-Mix Proportioning by ACI 211.1-74 Report
- b. Slump, Air, Unit Weight and Seven Day Compressive Strength Test Results Report

The compressive strength results indicated that the required 4000 pound per square inch strength at twenty-eight days was being obtained in seven days.

This mix was authorized for use in the foundation excavation seal slab.

The IE inspector also witnessed in-process laboratory mix design trial batching with associated testing and test cylinder manufacturing for the purpose of establishing the required strength versus water-cement ratio curve.

No deviations were identified.

4. Concrete Placement

The IE inspector witnessed the placement of concrete for the Reactor Building base mat seal slab for Unit 1 on two separate days. Slump, air content, temperature and unit weight determinations were also observed. Observed activities were found to be in conformance with J. A. Jones Construction Company Inspection Procedure No. 1, Revision 0, "Final Excavation and Placement of Seal Coat Concrete," and with PSO FPPM 3.14, Revision 1, "Concrete Quality Control."

No deviations were identified.

5. Foundation Excavation and Mapping

Excavation for the Unit 2 foundation and mapping activities prior to seal slab placement in the Unit 1 Reactor Building area were observed. The IE inspector also witnessed extensometer readings being taken for the area of the Reactor Building. The Extensometer Monitoring Report was also reviewed. This instrument measures the amount of foundation "rebound" which results from the removal of the overburden soils. The documentation of the foundation mapping was discussed with the field geologists performing the work. All activities observed and reviewed were found to conform with Procedure FPPM 4.15, Revision 1, "Geologic Mapping," and with Black & Veatch, "Excavation Mapping, Inspection, and Monitoring Procedures," Revision 2.

No deviations were identified.

6. Quality Assurance Audits

The IE inspector reviewed records of QA audits performed on site in order to ascertain whether the audits were performed as prescribed in Procedure QFPM 11.01, "Site Quality Assurance Audit Program." Records of the following audits were reviewed:

- a. Audit Report No. CS-79-05, Audit of Anchor Concrete Company Quality Assurance Program, performed April 24-27, 1979
- b. Audit Report No. CS-79-06, Audit of U. S. Testing Company Quality Assurance Program, performed May 22-24, 1979

The audits were performed and documented in accordance with the requirements of Procedure QFPM 11.01.

No deviations were identified.

7. Exit Interview

The IE inspector met with the applicant representatives (denoted in paragraph 1) at the conclusion of the inspection on June 1, 1979. The IE inspector summarized the purpose and scope of the inspection and the findings.