



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 413/80-16 and 414/80-16

Licensee: Duke Power Company
422 South Church Street
Charlotte, NC 28242

Facility Name: Catawba Nuclear Station Units 1 and 2

Docket Nos. 50-413 and 50-414

License Nos. CPPR-116 and CPPR-117

Inspection at Catawba site near Rock Hill, South Carolina

Inspector: *C. D. Maxwell*
G. F. Maxwell

8-1-80
Date Signed

Approved by: *C. D. Maxwell*
J. C. Bryant, Section Chief, ECES Branch

8-1-80
Date Signed

SUMMARY

Inspection on June 30 - July 18, 1980

Areas Inspected

This routine inspection involved 78 inspector-hours onsite in the areas of fire prevention and protection, containment steel coatings, structural concrete for unit 2 diesel generator building, and electrical cables and supports.

Results

Of the 4 areas inspected, no items of noncompliance or deviations were identified in 2 areas; 3 items of noncompliance were found in 2 areas (Deficiency - failure to correctly translate codes and standards into specifications drawings, procedures or instructions; and deficiency - failure to properly control superseded or revised drawings and deficiency - failure to prescribe testing and maintenance of concrete vibrators by documented instructions or procedures).

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DETAILS

1. Persons Contacted

➔ Licensee Employees

- * D. G. Beam, Project Manager
- * D. L. Freeze, Project Engineer
- * S. W. Dressler, Senior Construction Engineer
- * R. A. Morgan, Senior QA Engineer
- * L. R. Davison, Senior QC Engineer
- * H. D. Mason, QA Engineer
- * J. C. Shropshire, QA Engineer
- C. R. Baldwin, Technical Supervisor Welding/NDE
- * J. M. Frye, QA Audit Division
- * S. R. Loflim, QA Audit Division
- * E. C. Wall, General Superintendent

Other licensee employees contacted included 42 construction craftsmen, 22 technicians, 2 operators, 5 mechanics, and 12 office personnel.

Other Organizations

Hartford Steam Boiler Inspection and Insurance Company

- * J. W. Kosko, Authorized Nuclear Inspector (ANI)
- C. E. Toegel, ANI

* Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on July 3 and 18, 1980, with those persons indicated in Paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

(Closed) Deficiency 413/414/80-05-04 "Failure to include visual color examination requirements and level requirements in the applicable inspection qualification requirements for first line supervisors in procedure J-1". Duke letter of response dated May 28, 1980 has been reviewed and determined to be acceptable by Region II for this item. The inspector evaluated the revised procedure (QA-140) and found it to contain requirements that color perception tests are prerequisites to inspector certification. The inspector also found that the first line supervisor for the site QC electrical group was certified as Level II electrical on May 1, 1980. The corrective actions identified in the licensee's letter of response have been implemented.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Electrical Cables and Supports - Units 1 and 2

- a. The inspector evaluated specification CNS - 1121.00-1, revision 4, variation notice numbered VN 9716, nonconformance report numbered NCI 8354, audit report numbered C 80-3 and drawing CN-1915-05, revision 10. The inspector also interviewed welding personnel, welding inspectors, QC electrical inspectors, QA audit personnel, DPC engineering personnel and site construction management personnel. The inspector observed that some of the welding symbols and letters that are used on the Class 1E electrical cable tray support drawing numbered CN-1915-05, revision 10 are not defined in either section 2 of the applicable AWS standard or in any other standards or specifications which are used at the site. During the various interviews the inspector was given different definitions of what the letters B. S. and the symbol $\frac{3}{16}$ stands for, which is an undefined symbol and one of the undefined letters used on the afore noted drawing. Audit report C 80-3 resulted in a construction procedure being written to define some of the welding symbols which are being used relative to the installation of pipe hangers.

The inspector was informed that DPC QA audit group plans to further evaluate the non-standard use of welding symbols as they relate to civil, mechanical and electrical installation activities.

The inspector informed the licensee that failure to define the symbols and letters which are used on construction drawings or otherwise select and use an acceptable standard for welding symbols and letters is contrary to Criterion IX of Appendix B to 10 CFR 50, as implemented by Duke's Topical Report, paragraph 17.1.9. This is an item of noncompliance (a deficiency) identified as 413/414/80-16-01, "Failure to correctly translate codes and standards into specifications, drawings, procedures or instructions".

- b. The inspector observed the routing of Unit 1 Class 1E control cables numbered; 1*IPE 502, 1*EPC 540, 1*EPQ 515, 1*NS 581 and 1*EPC 539. The inspector observed the presence of the responsible QC inspectors during the above cable installations and further observed:
- (1) Awareness of the applicable procedural requirements (QA procedure M-40).
 - (2) The cables were inspected for size, type, color, routing and reel numbers.
 - (3) The cables were fastened in their respective cable trays by the electrical craftsmen and were verified by the QC inspectors.
 - (4) At the points of origin and destination the cables were identified with temporary markers and had their ends sealed with a sealing tape, this was noted throughout the site.

- c. The inspector selected twenty-five installation drawings which were being used by the electrical craftsmen for the installation of class 1E equipment. The inspector checked the drawings against the latest drawing list and found all of them to be the current revisions.

Except as noted, no items of noncompliance or deviation were identified.

6. Structural Concrete - Unit 2 Diesel Generator Building

- a. The inspector observed the placement of concrete at the top of the Unit 2 diesel generator building. The work observed included the placement and testing of the concrete for pour number 4487.

The pre-pour inspection form (form M-2A) was found to be completed as required by QA procedure M-2, paragraph 4.2. However, the inspector observed that two of the seven drawings referenced on the form were not the most current revisions. The inspector observed that the foreman responsible for placing the re-enforcement steel into the pour was performing work with the out-dated drawings. The two drawings, CN 1232-2, revision 12 and CN 1232-4 revision 8 were not marked "superseded" or with any marks to show that they were not of the current revisions. Both drawings were three revisions older than current revisions. The inspector brought this unsatisfactory condition to the attention of the licensee, a DPC nonconformance report was written to document the condition (NCI 8869, dated 7-2-80). The drawings were checked against the work that has been completed since they were superseded and determined that the work which had been completed was done by using variation notices or non performance reports as applicable. Therefore, no work was done outside the design requirements as applicable to these two drawings. As a result of NCI 8869 DPC found that the same foreman had six other uncontrolled superseded drawings; NCI 8962 was written to document the condition. DPC QA conducted an audit of four other site foremen and determined that they were using the current revisions of the installation drawings. The inspector was informed that the affected foreman had been erroneously removed from distribution for the eight outdated drawings and that the DPC document control person(s) responsible for the error is no longer employed by DPC. As a result of NCI 8962 the six additional drawings were checked against the work that has been done since they were superseded and determined that the work which had been completed was done using variation notices, as applicable. Further, the inspector was informed that both the surveyor's and the civil QC inspectors who were responsible for inspecting to assure that the affected work conformed to design drawings had the most current revisions of these six drawings when the work was inspected. The civil QC inspectors do not use the workers drawings when they conduct their inspections.

The senior QA engineer informed the inspector that to help preclude similar occurrences of this nature that he plans to exercise his authority to require DPC QC to conduct more "in depth" checks on the foremen's drawings. These checks will include one hundred percent of all quality documents which the selected foremen have in their work

locations (drawings, specifications, procedures, instructions, manuals). The documents will then be checked against document control's distribution list to determine if the document holder is on the list and if the documents are the current revisions.

Failure to properly control superseded or revised drawings is contrary to Criterion VI of Appendix B to 10 CFR 50, as implemented by Duke's Topical Report, paragraph 17.1.6.2. This is an item of noncompliance (a deficiency) identified as 413/414/80-16-02, "Failure to properly control superseded or revised drawings." However, since sufficient corrective action has already been or is being taken this item does not require a written response.

- b. During the placement of the above listed concrete the following were observed:
- (1) The concrete was tested in accordance with DPC QA procedure M-2, paragraphs 4.3.3, 4.3.4, 4.3.5 and 4.3.6.
 - (2) Vibrators were used for assuring proper consolidation of the concrete.
- c. The inspector evaluated the methods being used for the maintenance of the electrical powered concrete vibrators which are being used at the site. The inspector observed that there were no procedures or instructions describing or requiring that concrete vibrators be tested at periodic intervals and prior to their use, with known vibration testing devices to assure that their output frequency and amplitude were satisfactory. The inspector also observed that the vibrators which are being used at the Catawba project have not been tested with a vibrating reed or a vibrograph to assure that their frequencies or amplitudes are in accordance with the manufacturer's required ranges. The inspector informed the licensee that failure to provide a procedure or instruction, for the maintenance and testing of concrete vibrators to assure compliance with ACI 309-72 section 15.3.1 and 15.3.2, was contrary to Criterion V of Appendix B to 10 CFR 50, as implemented by Duke's Topical Report, Paragraph 17.1.5.2.

During this reporting period the inspector observed that construction procedure CP-460 has been drafted. The procedure was written to require that the site concrete vibrations are tested and maintained at periodic intervals. The inspector was informed that the procedure will be ready to implement by Aug 1, 1980. This is an item of non-compliance (a deficiency) identified as 413/414/80-16-03, "Failure to prescribe testing and maintenance of concrete vibrators by documented instructions or procedures." However, since sufficient corrective action has already been taken this item does not require a written response.

Except as noted, no items of noncompliance or deviations were identified.

7. Fire Prevention and Protection - Units 1 and 2

- a. The inspector observed an unannounced fire drill conducted at a tire shed located north of the DPC site motor pool. The drill was maintained under the close control and supervision of the DPC site fire brigade chief. Within five minutes after the start of the drill twenty-three members were at the scene of the drill and had rescued the drill victim from the smoke filled shed (smoke canisters were used as an aid in the drill). The twenty-three members consisted of: thirteen fire brigade members, seven safety department personnel and three security department representatives. Some of the equipment which was brought to the drill location included: a complete portable fire trailer, an ambulance that contained a portable oxygen bottle and several portable "scott" air packs.
- b. The inspector toured various site work areas and observed:
 - (1) Adequate control of combustible forms and form lumber
 - (2) Adequate control of flammable liquids.
 - (3) Fire extinguishers were located sufficiently close to areas in which cutting and welding operations were occurring.
- c. The inspector reviewed DPC QA surveillance report numbered C-20-5-80 and observed that the implementation of the fire brigade procedural requirements (CP-37) is being evaluated by DPC site QA.
- d. On June 27, 1980 the inspector observed the hydrostatic testing of some of the installed permanent plant fire protection piping. The piping, identified on DPC drawing CN1518-25.85.00 revision 16, is located within the boundaries of 1RY65 to 1RY66 through fire hydrant FH 13. The test consisted of a two hour hydrostatic test of an outside quality level 3 piping system using lake water as the test medium. A minimum of 200 pounds of pressure was applied to the medium and no leaks were observed during the test.

In the areas inspected, no items of noncompliance or deviation were observed.

8. Containment Steel Coatings - Unit 1

- a. The inspector observed coating activities for Unit 1 containment steel at elevation 620', south-east side. As a result the follow following were noted:
 - (1) The surface to be coated was prepared as required by DPC coatings specification 1001.
 - (2) The coatings materials were mixed and applied in accordance with the manufacturer's and DPC requirements (data sheet DP 69-I).
 - (3) The responsible DPC QC inspection personnel conducted inspections to assure procedural compliance and product quality.

- b. The NRC inspector selectively checked the thickness of the steel's coatings, after the finish coat had cured at the above location, and found the presence of the required coating materials. Item 412/414/80-07-02 is closed.

In the areas inspected, no items of noncompliance or deviation were identified.

9. Equipment Storage - Units 1 and 2

- a. The inspection observed the stored condition of nine Class 1E transformers and two essential motor control centers. The stored conditions of the transformers and motor control centers were compared with the storage and maintenance requirements (P-3A forms).
- b. The inspector observed the stored condition of component cooling water pump and motor 2B2, evaluated the documentation supplied by the manufacturer for the motor and found evidence that the motor was manufactured for a minimum accelerating voltage of 80 percent of rated voltage (reference FSAR section 8.3.1.1.4).
- c. The inspector observed the rigging and handling of diesel generators 2A and 2B as they were being moved from their place of storage into diesel generator rooms 2A and 2B. The diesel generator manufacturer's representative was observed at the site during the diesel handling activities.
- d. The inspector observed the stored condition of both reactor vessels and their closure heads.

In the areas inspected, no items of noncompliance or deviation were identified.

10. (Closed) Inspector - Followup Item 413/414/80-07-01 "Failure to require corrective action to prevent repetition of design engineering not properly identifying safety related drawings". The inspector has observed that the manufacturer's manual for Unit 1 fuel pool cooling pumps numbered 1A and 1B has been correctly identified as "NUCLEAR SAFETY RELATED".