



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

Report No. 50-370/82-05

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

Facility Name: McGuire

Docket No. 50-370

License No. CPPR-84

Inspection at McGuire site near Charlotte, North Carolina

Inspectors: N. Merriweather
N. Merriweather

4-23-82
Date Signed

A. G. Debbage
A. G. Debbage

4-23-82
Date Signed

Approved by: For R. W. Wright
C. M. Upright, Section Chief
Engineering Inspection Branch
Division of Engineering and Technical Programs

4/23/82
Date Signed

SUMMARY

Inspection on March 29 - April 2, 1982

Areas Inspected

This routine, unannounced inspection involved 60 inspector-hours on site in the areas of electrical and instrumentation work; procurement, receiving, and storage; preventive maintenance; and systems transfers from construction to operations.

Results

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

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

J. T. Moore, Project Manager
*M. S. Starnes, Senior Construction Engineer
*J. W. Willis, Project QA Engineer
*E. B. Miller, Senior QA Engineer
*J. A. McPherson, Engineering Assistant, Design Engr.
*G. T. Ford, QA Mechanical Technician
G. B. Robinson, QA Engineer
J. Waddell, Electrical and Instrumentation QA Supervisor
T. Houser, QC Representative
E. R. Wells, QC Representative
J. L. Keith, Materials Supervisor
D. Harbin, Instrumentation Electrical Support
J. Barber, Senior Electrical QC Inspector

Other licensee employees contacted included construction craftsmen and technicians.

NRC Resident Inspector

P. Bemis

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on April 2, 1982, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

Not inspected.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Independent Inspection Effort (92706)

a. Procedures Reviewed

Program requirements and procedures governing system transfer were reviewed; these included the following:

- CP-380 Rev 7 Listing Mechanical Items for QA Record Verification
- CP-201 Rev 7 Procedure for Transfer of Systems to the Systems Group for Cleaning and Pressure Testing
- S-2 Rev 12 Systems/Structures Verification and Turnover
- F-13 Rev 3 Procedure for Control of Work on Systems or Component Which Have Been Transferred to the Steam Production Department

The forms used to identify the system status, resolve nonconforming conditions, and record the steps during system transfer were reviewed. These included the following:

- QA-300A Surveillance Checklist
- S-2C Provisional Turnover Documentation
- S-2D Provisional Turnover Exception Notice
- S-2E Limited Turnover
- S-2G Cleared Exception Turnover
- S-2H Equipment/Valve Records Status and Verification
- S-2J Variation Notices and Nonconforming Item Report Status
- S-2P Final Acceptance of Systems/Structures
- S-2T Construction Status Prior to Pressure Test or Turnover
- S-2U Inspection Verification Prior to Pressure Test or Turnover
- S-2W Exception Transfer to Steam Production
- F-13A Shutdown Requests
- F-13C Construction Shutdown Request Log
- F-13B Steam Production Request Log

b. Observation of Construction Activity

Welding was being performed on the heat exchanger (2M WCEX-17) located in the auxiliary building at the 750 level between columns KK57 and LL57. This heat exchanger was under the control of Steam Production and had a tag 2RA 188 #20183. The welding was performed with a pre-heat of 200°F while cold water was being circulated in the heat exchanger. The activity was adequately controlled but the welding NDE inspection could not be performed until the system had been drained because of vapor condensation on the outside of the heat exchanger.

Repairs were being made on the RTD Bypass Manifold which had been provisionally turned over to Steam Production. The Swagelock fittings had been torqued excessively and required replacement; the damaged fittings were in the process of being removed during this inspection. The serial numbers on the stainless steel castings were 100, 102, 104 and 107. Modifications to one hanger support was observed. The modification reference was 2MCR-S-NI-154-2-0 and the reason given for the modification was "extensive redesign."

Within the above areas, no violations or deviations were identified.

6. Plant Status

As of this inspection, Unit 2 construction is approximately 95 percent complete. Eight mechanical systems and 22 electrical systems are remaining for provisional turnover out of a total of 103 mechanical systems and 68 electrical systems.

7. QA Inspection of Performance (35061)

This inspection was performed to determine whether site work is being accomplished in accordance with NRC requirements and SAR commitments to verify that prompt and effective action is being taken to achieve permanent corrective action on significant discrepancies.

The following areas were examined to achieve the inspection objective:

a. Field Drawing Control

The inspector randomly selected and reviewed the following field drawings to ascertain whether the most recent revisions of drawings are issued to the craft for construction.

MC-1915-01.01, R10
MC-1915-03.01, R8
MC-1909-02.01, R4
MC-1911-02.01, R7
MC-2922-02.01, R2
MC-2922-05, R5
MC-2924-01, R1

Within this area, no violations or deviations were identified.

b. Field Inspection

The inspector selected safety-related cables 2*EMF608, 2*ILE656, 2*ILE657, 2*VE509, 2*ILE661, 2*ILE662, 2*ILE671, 2*VE513, 2*VE512 and 2*VE502 for examination. The inspector reviewed the as-built cable installation to determine whether routing was in accordance with pull cards; whether burrs on cabletrays and electrays were removed; whether the cable raceways were continuous; whether safety-related stickers were attached to cabletrays, electrays, and termination cabinets; whether cables did not exceed the unsupported length requirements; whether the minimum bending radius was not exceeded; and whether terminations were in accordance with applicable drawings.

Within this area, no violations or deviations were identified.

c. QA Procedures and Nonconformances

The inspector selected the following procedures for review:

PROCEDURE	TITLES
M41B, Serial No. 14	"Cable Routing Installation"
M41B, Serial No. 15	"Cable Termination"
VI, R3	"Quality Assurance Program"
H8, R5	"Instrument Control"
H9, R5	"Control of Cable Terminations"

These documents were reviewed to determine whether procedures, including frequency and timing of inspections, are adequate to properly control the work and that inspection procedures and reference documents are adequately detailed to instruct the QC inspectors on exactly what he should be looking for when performing inspections. The inspector reviewed corrective action reports (R2A) E-29, E-35, E-47 and E-88; and nonconforming items reports (NC-Is) 11507, 14080 and 13576. Corrective action was examined to verify that the actions taken corrected the items, determined the cause of the deficiency if significant, considered the reportability to NRC and instituted effective corrective action to prevent recurrence.

No violations or deviations were identified in this area.

d. QA Audits and QC Qualifications

The inspector reviewed the audits performed in the electrical area on cable terminations and cable pulling for calendar year 1981 to determine whether licensee audits indicate that drawings are in agreement with the SAR, installation is according to drawings and specifications, craftsmen are qualified and competent to perform the work they are doing, QC procedures and inspectors meet requirements, and materials and equipment meet specifications.

The inspector reviewed the qualifications for the QC inspector that inspected the cable installations identified in paragraph 7.b.

Within these areas, no violations or deviations were identified.

e. Materials Certification

The inspector verified that cable reels 4R-0849-3-2A and 371C had been receipt inspected and certified acceptable for construction.

Within this area, no violations or deviations were identified.

8. Procurement, Receiving, and Storage (35065B)

a. Procedures Reviewed

Program requirements and procedures governing the procurement, receiving inspection, and storage control activities were reviewed for completeness and effectiveness. The documents reviewed included the following:

E-3, Rev 16	Field Procurement of Items and Construction Services
P-1, Rev 21	Receiving Inspection
P-3, Rev 13	Storage Inspection
M-28, Rev 5	Inspection of Housekeeping Requirements
Q-1, Rev 16	Control of Nonconforming Items
R-2, Rev 7	Corrective Action

b. Onsite Procurement Support

Onsite procurement activity was reviewed. Procurement was considerably reduced as a result of the construction status of the project. Purchase requisitions generated by Duke Power Company (DPC) McGuire were principally for consumable materials. Corporate HQ provided monthly an approved vendor's list for use on the site; the list found in use was dated March 2, 1982. Purchase requisitions were examined to ensure that the technical and quality assurance requirements (including 10 CFR Part 21) were specified and that the recommended supplier was on the approved vendor list. Purchase requisitions were sent from McGuire to Mill Power Company where the purchase order was generated; this would then be reviewed by corporate QA to ensure that essential requirements were included in the purchase order. One purchase requisition #8336-04081D for fifty bolts, nuts, and washers resulted in Mill Power purchase order G57680-33; this material was received at McGuire on December 18, 1981. Another purchase requisition #8336-04237D for 5,000 STA-KON terminals resulted in Mill Power purchase order H08754-33 dated January 11, 1982; this was reviewed by corporate QA February 15, 1982 and the terminals received at the site on March 3, 1982.

c. Storage of Equipment and Materials

The warehouses and laydown areas were inspected to verify that the equipment remaining in storage was retained in the correct level of storage environment. Warehouse #1, a Class C facility, contained no safety related equipment. Warehouse #5, a Class C facility was used for the storage of valves; there were several nonconforming items but these were adequately identified and physically segregated. Identification marks on a KEROTEST valve were recorded for later receipt inspection review and storage verification (identifications were P.O. A33955; 9G047, "N" stamp Class II, National board #8727). The part of the warehouse identified as #5B contained no safety related equipment. Stored on the laydown area outside the #5B warehouse were substantial quantities of stainless steel fittings supported on wooden pallets. Warehouse # 4 was principally a Class C storage facility with one end dedicated for Class A storage. Included in the Class A equipment stored were some electrical motors. The identification marks on a Reliance Nuclear Service Motor (I.D. #1YF882811A2, FRAME 324T) were noted. Electrical and pipe fittings were stored in the Class C area. It was observed that a substantial quantity of surplus weld filler material was being prepared for shipment to the Oconee project. It was subsequently verified that approximately 8,000 pounds of welding rod was being transferred, that the material certifications were correct, and that the transfer was being performed in accordance with procedure E-3.

d. Receiving Inspection

There are two receiving inspectors at McGuire, one of these being on loan to another project at the time of this inspection. Receiving inspection activity is at a low level and therefore the inspection strength is adequate. Materials recently delivered to McGuire included shipments from the Oconee, Cherokee, and Catawba projects.

Several receiving inspection records were examined. The inspection reports for the material recently ordered in purchase orders G57680-33 and H08754-33 were reviewed and found to be satisfactorily completed. The KEROTEST valve receiving inspection report was dated March 1, 1976, and the storage designation was Warehouse #5. The Nuclear Service Motors had been supplied by the Reliance Electric Company, and receipt inspection performed June 26, 1980; the storage designation was Warehouse #4, Level A. Receiving records examined for other equipment included the component cooling pump heat exchanger 2A (received June 18, 1973) and Westinghouse supplied upper head injection 12" gate valves received July 6, 1978, returned for repair September 21, 1977, and reinspected by receiving inspection July 6, 1978. All documentation was filed with the receiving inspection reports; this included Westinghouse Quality Releases, certification of design, certification of shop inspection, and manufacturers data report.

e. Equipment Maintenance

Forms P-3A used for equipment special storage and maintenance inspections were examined. Equipment selected for further examination included the containment spray pump 2B and the component cooling pump heat exchanger 2B2. The containment spray pump required motor shaft rotation every fifteen days. The P-3A form recorded that the activity began 3/3/75 and ended 7/28/75; the form was made inactive September 2, 1975. Further investigation showed that the activity had not ended but had been taken over by another management unit. The log maintained by the Electrical Unit showed that megger test of the motor and motor rotations was performed from July 30, 1975. The rotating equipment alignment record for the pump indicated that the cold dry alignment was performed on June 17, 1979, and the cold wet alignment on August 6, 1981. The component cooling pump heat exchanger Form P-3A specified a nitrogen gas blanket at a pressure range 5-15 psig. This commenced December 15, 1975, and was last recorded August 1, 1978; a storage maintenance requirement change status dated September 21, 1978, stated that the nitrogen purge was no longer required; piping had now been connected to the installed heat exchanger. Examination of the vendor's recommendation showed that no purge had been specified as a storage requirement; this had been specified by DPC design to provide additional protection during long-term storage.

Within these areas, no violations or deviations were identified.