U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-546/82-21(DPRP); 50-547/82-21(DPRP)

Docket Nos. 50-546; 50-547 License Nos. CPPR-170; CPPR-171

Licensee: Public Service Indiana
Post Office Box 190
New Washington, IN 47162

Facility Name: Marble Hill Nuclear Generating Station, Units 1 and 2

Inspection At: Marble Hill Site, Jefferson County, IN

Inspection Conducted: October 11-31, November 1-30, December 1-17, 1982 and January 1-31, 1983

Inspector: J. J. Harrison for J. E. Konklin 3/8/83

Approved By: J. E. Konklin, Chief J. E. Konklin 3/8/83.
Reactor Projects Section 2A

Inspection Summary

Inspection during the period of October 11-31, November 1-30, December 1-17, 1982, and January 1-31, 1983 (Report Nos. 50-546/82-21(DPRP); 50-547/82-21 (DPRP))

Areas Inspected: Routine, unannounced inspection by the resident inspector of licensee action on previous inspection findings, erection, nondestructive testing, and welding of Unit 1 containment structural steel. Included in this structural steel inspection were examination of related procedures, personnel training and qualifications, calibration of equipment, quality records and observation of work activities including inspection and special processes controls. Also included in this inspection was the installation of Unit 2 Containment Building dome and concrete patching activities. This inspection involved a total of 136 inspector-hours on site by one NRC inspector, including 6 inspector-hours onsite during off shifts.

Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

Public Service Indiana (PSI)

*S. Shields, Senior Vice President Nuclear Division
*B. Petro, Vice President - Nuclear Projects
*L. Ramsett, Quality Assurance Officer
J. Bott, Nuclear Regulations and Affairs Manager
N. Reichel, Construction Manager
G. Warner, Civil Construction Engineering Supervisor
*C. Beckham, Quality Engineering Manager
J. Parks, Civil Quality Engineering Manager
M. Linn, Contract Manager - Civil

Newberg-Marble Hill (N-MH)

*D. Stegemoller, Vice President - Power Construction
R. Donica, Project QA Manager
S. Milano, Project QC Supervisor
D. Mathews, Welding Engineer

*Denotes those present at the exit meetings.

The inspector also contacted and interviewed other licensee and contractor personnel.

2. Licensee Action on Previous Inspection Findings

(Closed) Noncompliance (546/82-14-01; 547/82-14-01) Failure to assure proper implementation of storage and preservation program; i.e., pipe caps not installed and weld joints not taped (sealed) for inprocess piping work. The contractor has taken positive corrective action through retraining and emphasizing the importance of requirements. The licensee and contractor increased QA/QC surveillances to assure compliance. The Resident Inspector has been observing the containment and auxiliary building for several months and is satisfied the problems are under control, this item is therefore considered closed.

(Closed) Unresolved (546/82-16-01; 547/82-16-01) Conflict/confusion existed between the calibration procedure 16.1 and the Quality Assurance Manual. The use of Measuring and Test Equipment listing, a log and the calibration record cards was unclear as to what constituted a "complete listing". The procedure and quality manual were revised to clarify this issue. The Resident Inspector reviewed these revisions and found the action taken to be adequate; this item is closed.

3. Structural Steel Erection

During this reporting period the resident inspector reviewed procedures and records and observed work and inspection activities being performed by Newberg-Marble Hill related to the erection and welding of structural steel in Unit 1 containment as follows.

a. Procedures

The following procedures were reviewed and found acceptable:

(1) Newberg Procedures:

WPN 6, Erection of Structural Steel, Revisions 6 and 7

WPN 5, Welding, Revision 10

WPN 5-01, AWS Structural Welding, Revision 2

WPN 5-03, AWS Welder Qualifications, Revision 3

WPN 5-04, Welding Material Control, Revision 3

WPN 42, Engineering Document Control, Revision 9

WPN 49, Design Control, Revision 5 and 6

QAP 10.01, QC Personnel Qualification and Certification, Revision 4

QAP 10.02, QA Records Inspector Qualification and Certification, Revision 0

QAP 17.01, Quality Assurance Records, Revision 6 and 7

QCP 9.01, AWS Welding Inspection, Revision 5

QCP 10.08, Structural Steel Erection Inspection, Revision 12

(2) CONAM Inspection Procedures (Newberg subcontractor)

.59-MT-022, Revision D, Magnetic Particle Examination in Accordance with AWS D1.1

.59-UT-123, Revision B, Ultrasonic Examination of welds in Accordance with AWS D1.1

b. Personnel Training, Qualification, and Certification

The inspector reviewed records for training qualification and certification of QA/QC personnel. This records review included resumes, training attended, reading records, examinations, eye

test, certification, and selected background and educational checks. The review was to assure certification was current and personnel were properly certified to perform the assigned task. Selected personnel were also observed performing inspections and were interviewed for job knowledge. A total of nine welding inspectors, ten nondestructive testing inspectors (CONAM), and six structural steel inspectors, were included in this review. All personnel reviewed were found to be properly trained and certified.

c. Document Control

The inspector reviewed the system being utilized to control design drawings, welding drawings, and work controlling travelers. This review included file copies, field copies and record copies. A total of twenty-five work packages (including the above documents) were reviewed and all were found to be properly controlled with the correct revisions in use.

d. Observation of Erection, Welding and Inspection of Structural Steel

(1) Structural Steel Welding

The inspector observed the following field activities and found those controls to be acceptable:

Welder Qualification

This review included the requirements of Procedure WPN-5 and WPN 5-03 and encompassed indoctrination training, welder test, (material type, welding positions, material thickness), testing qualification methods (bend test or radiography), retest and qualification records. The control of welder identification stamps and instruction for welders, were also reviewed. The qualified welders list was reviewed to verify completeness, correctness and being up-to-date. A total of ten welders were verified during this process and were found to be properly qualified.

Filler Metal Control

The inspector reviewed the filler metal controls required by procedures WPN-5 and WPN-04 including: the list of authorized personnel (welder) to withdrawn filler metal, list of authorized personnel (foreman) to requisition, and rod room access list. Also examined were the use of the filler metal withdrawal form, and the actual filler metal issuance and return of unused filler metal. Filler metal segregation in ovens by type, heat/lot, and size was also verified. The issue area was clean and controls were adequate. Rod storage oven temperatures were being monitored daily by the welding technician and periodically by QC personnel. This inspection

also revealed the work areas to be free of stubs and any uncontrolled filler metal. Portable rod ovens were also being utilized for low hydrogen electrodes.

Welding Activities

The inspector observed that for inprocess welding the correct drawing and traveler revisions were being utilized. Weld quality appeared to be satisfactory. Completed welds were being identified with ID stamps; these stamps were of the low stress type. Welders observed were properly qualified and were performing to the required welding procedure. The cooperation and working relations between production, craft and inspection personnel appeared to be excellent.

Welding Inspection Activities

The inspector observed that N-MH QC personnel were inspecting to the requirements of QCP 9.01 and specifically were properly utilizing the AWS checklist, correct revisions of field drawings and travelers. Also observed were activities including joint fit-up, inprocess and final inspection (visual) welding current verification (D.C. volt/amps) and Inspection Hold Point notification. QC surveillance activities by the licensee were also observed and found to be adequate.

(2) Structural Steel Erection

The inspector observed erection, location, bolting, torqueing and inspection of the following activities and found them to be acceptable:

Erection - Controls being utilized were to the requirements of WPN 26 and included were the following activities: requisitioning of structural members, erection, hoisting, and field cutting (copes). Also verified were bolting activities, including requisition, installation of bolting materials (location, type, and orientation), and tightening.

Inspection

The inspector selected twelve bolted connections and followed these through the inspection and verification process. Numerous other connections were randomly inspected for correct bolts, nuts, washers, orientation, location and correct member. Newberg QC inspection personnel were observed performing daily inspections including connection inspections, final inspection of bolted connections and final structural steel erection inspections.

Sliding Structural Steel ("S") Connections

As a result of numerous problems involving jam nut installations that have occurred at other sites involving this type of connection and sites having the same architect engineer (AE) Sargent and Lundy, the resident inspector reviewed the practices being utilized at Marble Hill to install and inspect these connections. This potential problem was adequately addressed at the site by the licensee, the AE and the contractor by taking the following action: (1) because of related problems at other sites the AE has taken action to prevent recurrence by revising drawings S-960, Typical Miscellaneous Structural Connector Details and S-1097, Containment Building Sections and Details to clarify "General Notes" to assure proper identification and installation for "S" connections. Drawing changes were reviewed and were found to be adequate by the inspector. (2) the installation contractor (Newberg) revised work and inspection procedures to control this activity. Procedures WPN 26, Erection of Structural Steel, Revision 7 and QCP 10.08, Structural Steel Erection Inspection, Revision 4 were reviewed by the inspector for adequate control to meet the drawing requirements and were found to be adequate. This also included the QC Inspection Checklist for Inprocess and Final Inspections for "S" type connections.

In addition the inspector selected twenty-five completed "S" connections and reviewed the inprocess and final QC Inspection Checklist Records for content and accuracy, these records were found to be acceptable. The inspector also selected twelve "S" connections in the Unit 1 containment building to assure the drawing and procedural requirements were met. This inspection revealed that the requirements had been met and the the installation was satisfactory.

e. Nondestructive Examination (NDE) Structural Steel

The inspector reviewed procedures, observed inprocess test, and the calibration of equipment of Newberg's subcontractor, CONAM Inspection, Inc. A total of twelve structural welds were observed being tested by the magnetic particle test method to CONAM Inspection Procedure 59-MT-022, Revision D and eight welds were observed tested by the ultrasonic test method to Procedure 59-UT-123, Revision B.

These tests were conducted as required by the Newberg welding traveler and met the requirements of AWS D1.1. Also reviewed were the records issued to document these inspections. All equipment was noted to have been properly calibrated, procedures were found to meet AWS D1.1 and were being properly implemented.

f. Records

The inspector reviewed selected records related to structural steel activities that were inprocess and completed (reviewed, and accepted by Newberg QA) and were being stored in the records vault. The records reviewed included:

.Personnel Training and Certification Records
.Welding Inspection Data Packages
.Structural Steel Inspection Data Packages
.Welder Qualification Records
.Material Requisitions
.Nondestructive Testing Records

Specific records reviewed are denoted throughout this report. Records were reviewed by QA/QC personnel and had the proper review stamps affixed. This NRC review revealed that quality records in this area were adequate and were being properly controlled.

4. Installation of Unit 2 Containment Dome

The inspector observed the hoisting/installation of Unit 2 dome hip-course on October 23, 1982. On November 23, 1982, the Unit 2 dome cap was installed completing this activity. The controlling procedure for this activity was Newberg Procedure WPN 21, Hoisting, Revision 5. This procedure and all associated documentation (including previous load testing to WPN 21-08) were reviewed and found to be acceptable.

5. Concrete Patching

The inspector observed concrete patching work and inspection activities inprocess on Unit 1 Containment Building and on the fuel building slab. These activities were being performed by the civil contractor, Newberg, to the following procedures:

.WPN 25, Concrete Patching, Revision 10

.WPN 25-02, Concrete Patch and Repair Area Evaluation, Revision 15

.QCP 10.06, Concrete Placement and Patching Inspection, Revision 9

Also reviewed as part of this activity was Newberg NCR 4584, which was being utilized to control the repairs to the fuel building slab. This inspection revealed concrete patching controls to be satisfactory.

6. Meetings/Visits

During this reporting period the Resident Inspector participated in the following:

A meeting on October 21, 1982, with Dr. W. Altman to discuss the upcoming quality assurance study to be conducted by the NRC; study initiation to be at Marble Hill.

On November 3, 1982, the Resident Inspector was interviewed by the team leader of the Self Initiated Evaluation (SIE), to INPO criteria, with subjects including for example, licensee attitude, systems, plant status, regulatory response, and quality awareness. Also on November 5, 1982, the Resident Inspector attended the SIE exit meeting.

On November 5, 1982, the Resident Inspector briefed the licensee's Executive Review Committee on NRC current events including regionalization, quality assurance study, systematic appraisal of licensee performance, construction appraisal teams, performance appraisal teams, independent design inspection, and independent design verification.

The Resident Inspector participated in the NRC Inspection and Enforcement QA Study (Headquarters), from November 15 to 19, 1982; this study was conducted on Marble Hill as the prototype. The study was comprised of interviews with key personnel; a systems review; site tour; and a overall evaluation to determine the root cause of original system breakdowns; basis, and current effects. The team debriefed on November 19, 1982, presenting preliminary findings to the licensee and the Resident Inspector.

The Resident Inspector participated in the Region III SALP board meeting on November 23, 1982

The Resident Inspector participated in the Case Load Forecast panel meeting at the site from December 1-3, 1982. Meeting details are denoted in NRC report Nos. 546/82-19; 547/82-19.

The Resident Inspector presented the systematic appraisal of licensee performance (SALP) results at a meeting with the licensee on December 14, 1982, in the Region III office. The SALP results are detailed in NRC Report Nos. 546/82-20; 547/82-20.

On January 14, 1983, Mr. Labros Pilaus, State of Indiana, Public Service Commission contacted the Resident Inspector to discuss Marble Hill activities. Subjects consisted of per cent complete, current activities, NSSS vessel set dates and access to NRC reports.

7. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) throughout this inspection and summarized the scope and findings of the inspection activities.