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

REGION III

Report No. 50-331/80-19

Docket No. 50-331

Licensee: Iowa Electric Light & Power Company P. O. Box 351 Cedar Rapids, IA 52406

Facility Name: Duane Arnold Energy Center

Inspection At: Duane Arnold Site, Palo, IA

Inspection Conducted: September 29 thru October 2, and October 21-23, 1980

Inspector: W. J. Key

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Approved By: D. H. Danielson, Chief Engineering Support Section 2

11/12/80

Inspection Summary

Inspection on September 29 thru October 2, and October 21-23, 1980 (Report No. 50-331/80-19)

Areas Inspected: Torus support reinforcement installation, welding, and nondestructive examinations; IE Bulletin 80-07 and IE Bulletin 80-08 corrective actions. The inspection involved a total of 44 onsite inspector-hours by one NRC inspector.

Results: No items of noncompliance or deviations were identified.

DETAILS

Persons Contacted

Iowa Electric Light and Power Company (IE)

- *L. Fitz, Assistant Project Engineer
- B. York, Assistant Chief Engineer
- *K. Harrington, Staff Engineer

Chicago Bridge and Iron (CBI)

F. Lusch, Project Welding & QA Superintendent

- D. Peterson, Welding & QA Supervisor
- K. Nockels, Supervisor

*Denotes those present at the exit meetings on October 21 and 23, 1980.

Functional or Program Areas Inspected

Torus Support Reinforcement Installation

1. Observation of Activities

The 32 torus supports fabricated by CBI in their Kankakee plant have been lowered to the torus basement.

When fit-up of the supports started, it was discovered that each support would have to be shortened 1" to 2", and that the material would have to be removed from the saddle fitting to the torus shell. A jig for cutting the saddle radius was made in CBI plant and shipped to the site. While the jig was being made and shipped, the existing column welds were examined and reinforced where required.

All butter and temper bead welding to the torus was complete, ground, and magnetic particle examined.

Cutting of the saddle supports is being accomplished by burning, then grinding to remove all slag prior to welding.

The inspector observed the cutting and grinding of two supports being done in the torus basement.

Welding of the supports to the torus is being accomplished by welding the root and hot pass on one side, then back grinding the other side and welding. Welding of the saddle to the torus is completed prior to welding to the column.

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No items of noncompliance or deviations were identified.

2. Welding Material Control

Specification IOW-05-041 requires that all covered electrodes be baked at a temperature of 800° F for 1 to 1-1/2 hours, that no more than 100 lbs. is to be baked at one time, and that electrodes shall be baked only once.

The inspector examined the baking oven and holding ovens in the change area and also in the torus basement. Electrodes are issued for a two hour period in buckets, rather than in portable ovens. This was an agreement between the licensee and CBI. Of the two ovens in the torus basement, one is used to issue electrodes, and the other for storage of any electrodes returned after the two hour period.

No items of noncompliance or deviations were identified.

3. Material Storage

The inspector examined the storage conditions of the Lubrite plates stored in the warehouse, finding storage conditions in accordance with site storage requirements.

No items of noncompliance or deviation were identified.

4. Nondestructive Examination

The inspector witnessed magnetic particle examinations being performed by CBI personnel on one completed weld of the support to the torus. Examination was performed in accordance with CBI MT Procedure 3 and Specification IOW-05-041.

No items of noncompliance or deviations were identified.

5. IE Bulletin 80-08, Containment Penetrations

This Bulletin requires the following:

The licensee to determine if the facility contained flued head design for penetration connections, or other design with containment boundary butt welds between penetration sleeve and process piping.

The applicability of ASME Code, including year and addenda or Regulatory Guide 1.19.

- The type of NDE performed during construction.
- The type of weld joint, pipe size, and material, and if a backing bar was used.
- The result of construction NDE, and the extent of any repairs, if required.

The licensee has conducted the examination of records and has documentation on the following systems:

Main Steam System, Penetration, X-7-ABCD, 36" Feed Water System, Penetration, X-9-AB, 36" Steam to RC1C Turbine, X-10 Steam to HPC1 Turbine, X-11 RHR Shut-down Supply, Suction, X-12 RHR Shut-down Return (Discharge), X-13-AB R.W. Clean-up Supply, X-15 Core Spray Pump Discharge, X-16-AB RPV Head Spray, X-17 Demineralized Water, X-20

Documentation includes flued head material, rating PSI, sleeve size and material, drawing FSK number at head weld and away from head, welding procedure, and NDE results. The inspector examined the documentation and determined that the licensee has completed bulletin requirements.

This item is considered closed.

6. IE Bulletin 80-07

On March 31, thru April 4, 1980, a team of General Electric examination personnel performed Ultrasonic examination of the 16 Duane Arnold Jet Pump Beams in accordance with GE test procedure No. TP-508.0654, Revision A, "UT Examination, Jet Pump Beam, BWR's 4 and Later". The inspector reviewed records of the examination results which indicated no evidence of intergranular stress corrosion cracking. The indications recorded were identified as beam geometry at the site, and were confirmed in the GE Laboratory in San Jose, California. The following calibration sheets were examined by the inspector:

Calibration Sheet No. DAEC-01, 3-31-80 UT Instrument, US1P-11, S/N-01914 Transducers S/N-1241, SUS-302, SUS-303, SUS-301 Frequency 2.25 MHZ Focus in H₂0

UT Data Sheet No. DAEC-01, 3-31-80 Beams #1 thru 10, Sheet No. 2, Beams 11 thru 16

Calibration Sheet No. DAEC-04, 4-3-80 Data Sheet No. 04, 4-3-80 Beams Nos. 7, 14, 16, 12, 11, 10, and 9

The pitch catch and pulse echo mode of sound was utilized during examination of the beams and photographs were taken of the UT scope during the examinations.

This item is considered closed.

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Exit Interview

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The inspector met with licensee representatives (denoted under Persons Contacted) at the conclusion of the inspections on October 2, and 23, 1980. The inspector summarized the scope and findings of the inspection.