U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/86009

Docket No. 50-461 License No. CPPR-137

Licensee: Illinois Power Company
500 South 27th Street
Decatur, IL 62525

Facility Name: Clinton Power Station, Unit 1

Inspection At: Clinton Site, Clinton, IL

Inspection Conducted: January 29 and 30, 1986

Inspector: D H Danielson for J. M. Jacobson — 2/19/86 Date

J. A. Gavula — 2/19/86 Date

Approved By: D H Danielson for D. H. Danielson, Chief
Materials and Process
Section — 2/19/86 Date

Inspection Summary

Inspection on January 29 and 30, 1986 (Report No. 50-461/86009(DRS))
Areas Inspected: Unannounced, special safety inspection of previous inspection and CAT findings. This inspection involved 32 inspector-hours onsite by two NRC inspectors.
Results: No violations or deviations were identified.

DETAILS

1. Persons Contacted

Illinois Power Company (IP)

R. Funk, Senior C/S Engineer
*J. Brownell, Licensing Specialist
*R. Lebkuecher, Licensing Specialist
F. Householder, Staff Engineer
K. Pride, Staff Engineer

Sargent and Lundy Engineers (S&L)

J. Blattner, Mechanical Project Engineer
P. Olson, Supervisor EMD

*Denotes those attending the exit interview.

2. Licensee Action on Previous Inspection Items

a. (Closed) Violation (461/85030-01): A CAT Team finding addressed the modeling of snubbers on NSSS piping systems as rigid restraints versus spring restraints. The validity of this modeling technique as well as the contradiction with FSAR statements concerning its applicability was reviewed.

A memorandum dated October 31, 1983, from D. G. Eisenhut (NRC-NRR) to R. L. Bangart (NRC-RIV) addressed S&L's snubber modeling methodologies and contained the following statement:

> Based on our review of the Sargent and Lundy design practices, the staff concludes that the method used by Sargent and Lundy for the modelling of the pipe supports in the piping design and analysis together with the engineering rationale presented in some detail in the attachment provides an adequate basis for the calculation of piping stresses and support loads.

The memorandum was considered to adequately address the snubber modeling issue.

A copy of Draft Revision to FSAR Section 3.9.3.4.1.1 was submitted to the NRC inspectors for review to clarify the scope of work for supports on piping analyzed by the NSSS vendor. This section will now apply only to the reactor recirculation loop A and B piping and the main steam piping, provided by General Electric.

The inspectors reviewed the above documentation, agreed with the actions of the licensee and considers this item closed.

b. (Closed) Noncompliance (461/82-20-01): Inadequate bellows expansion joint considerations were factored into the stress analyses performed by S&L. Pressure thrust loads from the bellows were not included in the piping stress analyses nor were the bellows torsional movements verified to be within acceptable limits.

The S&L calculation "Evaluation of Untied Expansion Joint" No. EMD-041515, Revision 00, dated May 6, 1983, Project 4536-00, EMD File No. 041515 was reviewed for adequacy in addressing the above noncompliance. The following observations were made concerning the calculation:

(1) All systems with untied bellows, both safety related and non-safety related, were reanalyzed. These included:

DG-01, 02A, 03, 04A, 05 and 06A
IS-01 and 04
HG-13, 14, 17 and 18
Plus 19 non-safety related systems.

(2) All reanalyzed systems had additional thrust loads applied to the models at the bellows locations. New pipe stress evaluations, pipe support reactions and pipe support evaluations were performed. As a result of this work all piping and supports stresses, except on the DG-06 system, were found to acceptable. The two modifications made to the DG-06 system included the addition of a snubber and changing a variable spring support to a rigid strut.

(3) All bellows movements were reanalyzed to verify acceptability through standard Expansion Joint Manufacturers Assoication (EJMA) formulas. The bellows stress and calculated fatigue life were determined and compared to the original design specification. All bellows expansion joints were found to be adequate.

The NRC inspectors agreed with the action taken and considers this item closed.

c. (Closed) Violation (461/85030-02): Failure of Baldwin Associates (BA) to adequately implement document control procedures. Numerous discrepancies were identified by the CAT inspection regarding filing and updating of procedures and in the posting of design change documents in specifications.

BA conducted an audit of all Baldwin Associates Procedures (BAP) issued to document holders. Document holders initiated request forms to the Document Control Center (DCC) to replace any missing or superseded documents discovered during the audit.

Illinois Power QA performed surveillance CQ-D1620-U to review outstanding change documents listed against S&L specifications. Evaluation of the results showed that traveler preparation and hardware in the field were not impacted by the discrepancies.

The Baldwin Document Control Center (DCC) conducted a review of Resident Engineering's controlled copies of DCC control. In addition, the DCC and the Training Department jointly developed a training workshop for updating the K-Spec. Training records were submitted for NRC review.

The NRC inspectors reviewed the above programs and agrees with the corrective actions taken.

d. (Closed) Violation (461/85030-06A): Failure to properly disposition a nonconformance report (NCR 31282) correctly with respect to production cadweld testing frequency. The licensee issued NCR 32596 after a re-review of NCR 31282 determined that a weakness in the justification for closure existed.

ANSI N45.2.5 requires that in addition to the required qualification of operators, separate test cycles be established for production cadwelds. The standard is not specific as to how these test cycles must be established. The Clinton Power Station (CPS) FSAR stated that this production sampling would be required for each cadweld operator.

In practice, testing frequency of production cadwelds at CPS was based on travelers rather than the actual number of cadwelds performed. A crew of cadweld operators were assigned the welds listed on a production traveler. Since the traveler represents a controlled lot of production welds, and that the number of test welds were based on the quantity of welds contained in that lot, the intent of the ANSI standard was met.

To resolve the conflict between the actual practice and the FSAR, Amendment 36, revised Section B.2.3.4 of the FSAR to reflect cadweld testing on the basis of crew (traveler) production.

The NRC inspectors reviewed the qualification logs of 25 cadweld operators and found adequate documentation. Several travelers were reviewed for cadweld test frequency. In most cases, the number of tests conducted on a traveler basis exceeded the number which would have been tested if the total production of a crew were used as the basis. Using the traveler as a production lot, resulted in adequate production testing of cadwelds. Based on the Amendment to the CPS FSAR and NRC review of cadweld testing practices, this violation is considered closed.

3. Exit Interview

The inspectors met with site representatives (denoted in Persons Contacted Paragraph) at the conclusion of the inspection. The inspectors summarized the scope and findings of the inspection noted in this report. The inspectors also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspectors during the inspection. The licensee did not identify any such documents/processes as proprietary.