

U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-461/85056(DRS)

Docket No. 50-461

License No. CPPR-137

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

Facility Name: Clinton Power Station, Unit 1

Inspection At: Clinton Site, Clinton, Illinois

Inspection Conducted: October 22-25, 30, 31, and November 25-27, 1985

Inspector: *D. H. Danielson*
for P. D. Kaufman

12/27/85
Date

Approved By: *D. H. Danielson*
D. H. Danielson, Chief
Materials and Processes Section

12/27/85
Date

Inspection Summary

Inspection on October 22-25, 30, 31, and November 25-27, 1985

(Report No. 50-461/85056(DRS))

Areas Inspected: Routine, unannounced safety inspection of the implementation of actions set forth in IE-Bulletin 79-14, and followup on previous inspection findings. The inspection involved a total of 60 inspector-hours onsite by one NRC inspector, including 12 inspector-hours of in-office review.

Results: Of the areas inspected, one violation was identified (failure to perform required seismic design evaluation/review - Paragraph 4.b).

DETAILS

1. Persons Contacted

Illinois Power Company (IP)

- *D. Hall, Vice President
- *J. D. Palmer, Director, Configuration Management
- *J. Loomis, Construction Manager
- *D. G. Tucker, Lead Commitment Control Engineer
- *H. Daniels, Jr., Project Manager
- *D. C. Shelton, Manager, NSED
- *H. R. Lane, Director, Design Engineering
- *J. Perry, Manager, Nuclear Program Coordinator
- *K. A. Baker, Acting Supervisor, I&E Interface
- *F. S. Spangenberg, Manager, Licensing & Safety
- *W. Connell, Manager, Quality Assurance
- *S. R. Bell, Supervising Engineer

Baldwin Associates, Inc. (BA)

- L. Campbell, Technical Assistant/TPRG
- R. W. Greer, Manager, Q&TS
- P. Adams, QC Inspector, P/M
- J. DeVine, Assistant Piping Engineer
- R. Neeb, Senior Piping Engineer
- J. Poulos, Senior Engineer, BOP
- *J. Thompson, QE Manager
- *E. P. Rosol, Project Manager
- C. L. Solter, TPRG Engineer
- B. S. Auer, Technical Assistant/TPRG

Sargent and Lundy Engineers (S&L)

- *D. Schopfer, Project Site Manager
- S. Raupp, Structural Engineering Supervisor
- P. Odisho, Project Engineer, EMD
- R. Suslick, Project Manager
- J. Blattner, Mechanical Engineering Supervisor

Stone and Webster Engineering Corporation (S&W)

- P. H. Seidel, Manager, TPRG

*Denotes those attending the exit meeting on November 27, 1985.

2. Licensee Action on Previous Inspection Findings

(Closed) Violation (461/84-28-01): Failure of QA/QC to observe and document nonconforming conditions relative to pipe support structural attachments to expansion anchor base plates. The NRC inspector reviewed

Field Engineering Change Notice (FECN) 7048, which was issued to provide additional tolerances for double attachments to baseplates. The required training given to BA's piping/mechanical inspectors in FECN 7048 tolerances was examined by the NRC inspector. Additionally, the licensee conducted a 100 percent reinspection of all pipe supports with double attachments to baseplates, since a sufficient number of discrepancies were identified with double attachments to baseplates during the sampling plan reinspection program.

3. Licensee Action on IE Bulletins

(Closed) IE Bulletin 79-14, Revision 1, Revision 2, and Revision 3 (461/79-14-BB, 461/79-14-1B, 461/79-14-2B, 461/79-14-3B): "Seismic Analysis for As-Built Safety-Related Piping Systems." The licensee has responded to the bulletin, and the bases for closure of the bulletin is contained in Paragraph 4 of this report.

4. IE Bulletin 79-14 Activities

The implementation and verification of the licensee's as-built program as related to IE Bulletin 79-14 requirements was recently reviewed by the NRC Construction Appraisal Team (CAT). Results of the inspection are documented in RIII Inspection Report No. 50-461/85030. The attributes examined during the CAT inspection and this inspection that are essential to the seismic piping stress analysis included: piping configuration; pipe support/restraint locations, design, function, and clearances; and valve and valve operator locations and orientation. Assessment of these attributes was required to verify that the safety-related piping systems were constructed and seismically analyzed in accordance with the final design documents/requirements.

a. Review of Walkdown and Engineering Evaluation Procedures

The licensee's procedures, specifications, and instruction drawings relative to the generation and reconciliation of the safety-related piping systems' as-built design documents reviewed by the NRC inspector included the following:

- ° IP Nuclear Station Engineering Department Procedure (IPNSED) D.3, "N-5 Data Report Preparation and Certification," Revision 4.
- ° IP Nuclear Station Engineering Department Procedure D.4, "Review of Design Documents for ASME, Section III, Piping," Revision 8.
- ° BA Procedure (BAP) 2.17, "System/Sub-System Turnover," Revision 11, Change D.
- ° BA Procedure (BAP) 1.3, "Code Reports and Nameplates," Revision 4, Change C.
- ° IPNSED Procedure B.3, "Review of Stress/Design Reports," Revision 1.

- ° IP Corporate Nuclear Production Procedure CNP 2.02, "Stress Reports (NS-3260) N-5 Forms," Revision 1.
- ° BA Procedure (BAP) 3.2.5, "Piping Component Supports," Revision 8, Change E.
- ° BA Procedure (BAP) 2.14, "Fabrication/Installation of Items, Systems, and Components," Revision 11, Change D.
- ° BA Procedure (BAP) 3.2.9, "79-14 Verification Program," Revision 1.
- ° Sargent and Lundy Engineers (S&L) Project Instruction PI-CP-028, "Field Installation Data Required to Permit Confirmation of Piping Subsystem Analysis," Revision 2.
- ° S&L Project Instruction PI-CP-030, "Preparation and Review of Piping Document Packages," Revision 2, Procedural Deviation PD No. 65.
- ° S&L Quality Assurance Manual, GQ-3.08, "Design Calculations," Revision 5, Notification No. 084, dated July 31, 1985.

The procedures, specifications, and instruction drawings were determined to be consistent with regulatory requirements and licensee commitments relative to IE Bulletin 79-14, "Seismic Analysis for As-Built Safety-Related Piping Systems."

No violations or deviations were identified.

b. Safety-Related As-Built Piping System Walkdown

Portions of piping systems were randomly selected for assessing the adequacy of the licensee's as-built walkdown inspection and design verification program. The NRC inspector's review only encompassed as-built subsystem packages from the following two safety-related piping systems, since the CAT inspection was just recently completed:

<u>System Title</u>	<u>Subsystem No.</u>
Residual Heat Removal System	1RH-13, Revision 9L
Low Pressure Core Spray System	1LP-03, Revision 12L

The as-built subsystem walkdown packages were comprised of, but not limited to, the following documents/drawings:

- ° Sargent and Lundy Engineers (S&L) Support Design Drawings
- ° Contractor Piping Fabrication Isometric Drawings
- ° S&L Analytical Drawings
- ° S&L P&IDs (M05 series drawings)

- ° Any outstanding design change documents - (FCRs, DRRs, ECNs, FECNs, DRRs, and NCRs)

The NRC inspector conducted system as-built verification walkdowns of the following assembled documentation/drawings selected from the above two safety-related piping systems.

Pipe Support/Restraint Drawings

1LP-3001R	1LP-3010R
1LP-3002R	1LP-3011X
1LP-3003S	1LP-3012X
1LP-3004X	1LP-3013X
1LP-3005R	1LP-3014R
1LP-3006S	1LP-3015S
1LP-3007R	1LP-3016S
1LP-3008G	1LP-3019R
1LP-3009X	
1RH-16036X	1RH-16035S
1RH-16031X	1RH-16022X
1RH-16020R	1RH-16021R
1RH-16034S	1RH-16023X

Piping Layout Isometric Drawings

M06-1075, Sheet 2, Revision AL
 M06-1075, Sheet 3, Revision R
 M06-1075, Sheet 24, Revision Z
 M06-1075, Sheet 14, Revision V
 M06-1075, Sheet 18, Revision AB
 M06-1073, Sheet 1, Revision AK
 M06-1073, Sheet 2, Revision AA
 M06-1073, Sheet 3, Revision AA

Process and Instrumentation Diagram (P&ID) Drawings

M05-1075, Revision U	4 inch RHR line No. 1RH19AA and 1RH19BA from 14 inch line No. 1RH02AA to 6 inch line No. 1RH27C.
M05-1073, Revision U	20 inch LPCS line No. 1LP01B from penetration 1MC-32 to LPCS pump 1E 21C001.

In general, the installed/erected piping runs and supports inspected were found to be constructed in accordance with the applicable design drawings and procedural requirements for the attributes verified. However, while conducting the as-built verification walkdowns the NRC inspector observed a mechanical snubber rear bracket for pipe support 1RH-16035S welded to the yoke of ASME Code Class 2, Anchor/Darling Limitorque valve number 1E12-F064A.

The licensee was requested to compile the latest design/installation documentation relative to this particular pipe support. The Sargent and Lundy (S&L) support design Revision F to the drawing was commensurate with the as-installed support configuration. The licensee and S&L were then queried as to whether the valve manufacturer was cognizant of this added appurtenance to their seismic qualified safety-related component. The NRC inspector was presented copies of the S&L and Anchor/Darling correspondence, which permitted the snubber attachment to the valve yoke.

Upon further review into the seismic design qualification calculations to justify this modification to the valve, which is tabulated in Table 3.9-5 of the FSAR as a Balance of Plant (EOP) safety-related mechanical "active" valve, the NRC inspector determined that neither S&L nor Anchor/Darling had performed the required seismic or operability analysis/evaluation to requalify the "active" valve with the added attachment to assure that proper operation of the component would still be maintained and verify that the stresses of the component would be less than the allowable stress requirements permitted by the ASME Boiler and Pressure Vessel Code, Section III.

The licensee was informed that failure to verify plant design to design requirements, as specified in the FSAR and Project Design Criteria, is a violation of Criterion III of 10 CFR 50, Appendix B (461/85056-01).

5. Exit Interview

The inspector met with licensee representatives (denoted in Paragraph 1) on November 27, 1985 and discussed the scope and findings of this inspection. The inspector also discussed the likely informational content of the inspection report with regard to documents or processes reviewed by the inspector during the inspection. The licensee did not identify any such documents/processes as proprietary.