

U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-457/87030(DRS)

Docket No. 50-457

Construction Permit No. CPPR-133

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: Braidwood Station, Unit 2

Inspection At: Braidwood Site, Braidwood, Illinois

Inspection Conducted: September 21-25, 29-30, October 1, 6-9, 14-15,
20-22, 27-29, November 3-6, 10-13, 17-19, 23-25,
and December 1-4, 1987

Inspector: *John P. Dawson*
W. C. Liu *for*

12/30/87
Date

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

12/30/87
Date

Inspection Summary

Inspection from September 21 through December 4, 1987 (Report No. 50-457/87030(DRS))

Areas Inspected: Routine safety inspection of seismic analysis for as-built safety-related piping systems (IEB 79-14); of safety-related pipe support and restraint systems (50090); of reactor coolant pressure boundary piping (49056); of safety-related piping pertaining to welder qualification (55187); of testing of pipe support and restraint systems (70370); of on-site design activities (37055); of containment mechanical penetrations (53055); of structural integrity test (63050); of training and qualification (41400); SER review in conjunction with piping vibration test program (92719); and licensee actions on previous inspection findings (92701 and 92702).

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

DETAILS

1. Persons Contacted

Commonwealth Edison Company (CECo)

- *E. Fitzpatrick, Station Manager
- *V. Vahle, Project Construction Superintendent
- *L. Raney, Nuclear Safety Supervisor
- *P. Barnes, Regulatory Assurance Supervisor
- *M. Inserra, Test Review Board Supervisor
- *D. Geddings, Project Construction Field Engineer
- *R. Bedford, Regulatory Assurance
- *E. Carroll, Regulatory Assurance
- *D. Melton, Startup Engineer
- *T. Lewis, Plant Startup Staff
- W. Bruns, Project Construction Civil Engineer
- B. Waninski, Project Field Engineer

Sargent and Lundy Engineers (S&L)

- D. Gallagher, Site Manager/Coordinator
- J. Kalogeropoulos, Piping Analysis Coordinator
- D. Roth, Senior Structural Engineer
- N. Damjanovich, Senior Component Engineer

Phillips Getschow Company (PGCo)

- W. Nicholson, Site QA/QC Manager
- W. McDonough, QC Supervisor
- W. Berg, QC Supervisor, Field
- C. Lutz, QC Foreman
- L. Butler, QC N-5 Coordinator
- P. Evans, Welding Engineer

NRC Resident Inspector

- *T. Tongue, Senior Resident Inspector, Operation
- T. Taylor, Resident Inspector, Operation

*Denotes those attending the exit interview at the Braidwood station on December 4, 1987.

2. Licensee Action on Previous Inspection Findings (92701 and 92702)

- a. (Closed) Violation (458/87020-01): Failure to identify and correct deficiencies on safety-related pipe supports. CECo's letter of response dated October 16, 1987, was reviewed and determined to be acceptable. The NRC inspector held discussions with licensee's representatives and examined the corrective actions as stated in the

letter of response. The inspector concluded that CECO had determined the full extent of the subject violation, performed the necessary survey and followup action to correct the present conditions, and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.

- b. (Closed) Open Item (457/87020-02): Evaluation of rattle space on safety-related piping systems. The NRC inspector, during a field inspection, identified ten rattle spaces on Drawing 2A-CV-49, four rattle spaces on Drawing 2C-SI-26, and two rattle spaces on Drawing 2A-CC-20. A review of existing records revealed that 13 rattle spaces had previously been identified. Three new rattle spaces were found as a result of the NRC's inspection. The NRC inspector held discussions with licensee representatives regarding the above concern. Consequently, the licensee performed an evaluation to determine the safety significance. The evaluation found that the three rattle spaces were identified by the licensee's VT inspectors on potential thermal growth interference forms. These spaces were reviewed as a part of IHF for thermal and seismic interference and were found to be acceptable. Further, S&L has reviewed all of the aforementioned rattle spaces identified by the NRC inspector for seismic impact and found them to be within acceptable limits. This item is considered closed.

3. Safety Evaluation Report (SER) Section 3.9.2.1 Review and Followup (92719)

(Closed) SER Item (457/86000-10): Piping vibration program. The licensee's detailed program for pipe vibration is documented in pre-operational test procedure, BWPT-EM-52, "Pipe Vibration," Revision 0, dated May 8, 1987. This item addressed concerns that acceptance criteria for piping stress be established under steady-state vibrational conditions; that the test program consisted of a mixture of instrumental measurements and visual observation by qualified personnel; that initial clearances for whip restraints be checked and evaluated; and that snubber operability be ensured through a program of preservice examination and pre-operational testing. The NRC inspector held discussions with licensee representatives, reviewed supporting documentation, and observed representative samples of work to ensure that adequate actions associated with the aforementioned concerns have been implemented. This item is considered closed.

4. Licensee Action on IE Bulletins (25529)

(Closed) IE Bulletin 79-14 (457/79014-1B, 457/79014-2B, 457/79014-3B, 457/79014-BB): 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 documented in Region III Inspection Reports No. 50-457/86010, No. 50-457/87020, and Paragraph 10 of this inspection report.

5. Reactor Coolant Pressure Boundary Piping-Review of Quality Records (49056)

The NRC inspector randomly selected four pipe spools from the following piping systems for review of records:

<u>Spool No.</u>	<u>Drawing No.</u>	<u>Piping System</u>
RC-12-2	2C-RC-12, Rev. E	Reactor Coolant
RC-12-8	2C-RC-12, Rev. E	Reactor Coolant
RH-14-6	2C-RH-14, Rev. D	Residual Heat Removal
SI-30-5	2C-SI-30, Rev. B	Safety Injection

Quality records for the above pipe spools were reviewed in accordance with the applicable codes, licensee commitments, and NRC requirements. Attributes included in the review are as follows:

o Receiving Inspection and Vendor Inspection Reports

<u>Material Receiving Report (MRR) No.</u>	<u>Applicable Pipe Spool</u>	<u>Manufacturer's Serial No.</u>
MRR No. 13208	RC-12-2	33898
MRR No. 13072	RC-12-8	33904
MRR No. 8228	RH-14-6	32691
MRR No. 8027	SI-30-5	32394

o Certificate of Conformance for Fabricated Piping

<u>Packing List No.</u>	<u>Applicable Pipe Spool</u>
2224	RC-12-2
1587	RC-12-8
244	RH-14-6
9333	SI-30-5

o Installation Records

PGCo Form PG-119-5 was used as the installation checklist. This form contains the identification of pipe spool number, manufacturer's serial number, NDE requirements, fabrication requirements and welding requirements.

o Disposition of Nonconforming Material

<u>Nonconformance Report (NRC) No.</u>	<u>Hold Tag Log No.</u>	<u>Disposition</u>
NCR No. 209 (5-15-78)	206	Damaged material replaced with a new certified material

<u>Nonconformance Report (NRC) No.</u>	<u>Hold Tag Log No.</u>	<u>Disposition</u>
NCR No. 408 (5-9-79)	403	Damaged material returned to vendor for credit
NCR No. 426 (5-24-86)	421	Pipe material not traceable to certified material test report
NCR No. 6418 (3-10-86)	2959	Welded pipe contained indications and was returned to vendor

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

6. Containment Mechanical Penetrations-Record Review (53055)

The NRC inspector randomly selected the following four containment penetration assemblies for a verification review. This review was to determine whether the licensee's work activities were accomplished in accordance with the applicable specifications, licensee's commitments, and NRC requirements.

<u>Penetration Assembly No.</u>	<u>Drawing No.</u>	<u>Piping System</u>
2PC-16	2C-CS-14, Rev. D,	Containment Spray
2PC-26	2A-SI-41, Rev. A,	Safety Injection
2PC-48	2A-CC-33, Rev. C,	Component Cooling
2PC-77	2C-MS-56, Rev. D,	Main Steam

The records for the above penetration assemblies were reviewed by the NRC inspector. It was noted that cooling coils were also installed with penetration 2PC-16, 2PC-26 and 2PC-77 because of temperature effects. The inspector noted the following:

- o the required material certifications were maintained,
- o the required NDE was performed,
- o the penetration assemblies were installed as specified,
- o the required inspections were performed in accordance with the procedures,
- o the required leak testing had been satisfactorily completed.

The NRC inspector reviewed DS-MC-01-BR, Design Specification for Primary Containment Piping Penetration Assemblies, Revision 1, dated February 5, 1987, and S&L Specification No. L-2787, Specification for Containment Piping Penetrations, Revision 1, dated January 4, 1982. The inspector

noted that all ASME Section III primary containment piping penetration assemblies are required to meet the stress limits under the most severe loading combinations for design, normal, upset, emergency, faulted, and testing component conditions. Furthermore, the stress analysis reports for penetrations 2PC-16 and 2PC-77 were reviewed and verified for conformance to design specification and NRC requirements. The inspector concluded that the licensee's control of penetration assembly records appeared to be adequate.

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

7. Safety-Related Piping - Welder Qualification (55187)

a. Review of Procedures

- o PGCo procedure GWS-QUAL, General Welding Standard - Welder Performance Testing, Revision 2, June 25, 1987.
- o PGCo procedure QCP-B20, General Repair Procedure, Revision 3, October 16, 1985.
- o PGCo procedure GWS-REPAIR, General Welding Standard for Repair of Material and Weld Defects, Revision 1, January 14, 1986.

The relevant portions of the above procedures were reviewed by the NRC inspector for conformance to the applicable codes, standards, licensee commitments and NRC requirements. These procedures appeared to be acceptable in terms of meeting the requirements for welder qualification tests.

b. Review of Welder Qualification Status Records

The NRC inspector reviewed PGCo's Weekly Qualified Welders List, dated September 17, 1987, to determine whether the records contain current information pertaining to welder qualification. The inspector randomly selected four welders from the list to verify whether these welders were qualified in accordance with the applicable codes and procedures. The identification of these welders were 8A, 942, JR, and 412, respectively. Attributes included in the review are welding process, welding procedure specification (WPS), material specification, filler metal specification, welding position, welding progression, and radiographic test results evaluation, etc. Furthermore, the above four welders performance qualification records were also reviewed for conformance to the applicable codes, licensee commitments and NRC requirements. The inspector found that the licensee's contractor has an acceptable program for maintaining an updated record of the qualification status of all welders.

c. Review of Radiograph Reports for Welders Qualifications

During the inspection, the NRC inspector noted that many of the radiograph reports which were utilized for welder qualifications were not signed by a reviewer, although a reviewer line was shown on the report form. This was a generic case for the reports performed between 1976 and 1981. The licensee's contractor, Phillips, Getschow Company, had initiated NCR No. 5302 on August 8, 1985 for documenting the above concern. Results of the NCR evaluation concluded that the RT reports were still valid and were found acceptable.

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

8. Containment Structural Integrity Test (63050)

a. Review of Structural Integrity Test (SIT) Procedure

CECo's SIT procedure, Revision 0, August 19, 1987, was reviewed for conformance to the applicable codes, FSAR commitments and NRC requirements. The major attributes contained in the procedure are as follows:

- ° All surface cracks over 0.01 inch wide and 6 inch long are required to be recorded at specified locations.
- ° The rate of pressurization shall be uniform and shall not exceed 10 psig per hour measured on a per hour basis.
- ° The containment vessel shall be pressurized to 57.5 psig (1.15 times the containment design pressure) in six approximately equal increments.
- ° At each stage of pressurization and depressurization, after the pressure has stabilized for one hour, the containment response will be recorded.
- ° The containment shall be depressurized in the same manner.
- ° Deflection measurements shall be recorded at all pressure intervals at the specified locations.

b. SIT Witness

During the SIT, the NRC inspector observed portions of the following testing activities to ensure that licensee commitments and NRC requirements were being implemented in accordance with the procedure.

- ° The rate of containment pressurization did not exceed the specified limits.

- Increments of pressure increase with specified holding time were being met.
- Test performance was adequately coordinated.
- SIT crew was familiar with test program and procedure.
- SIT crew was familiar with application and reading of instrumentation.
- Final containment test pressure and specified holding time complied with requirements.
- Crack pattern mapping was being performed prior to the test, during the test, after the test and at the specified locations.

c. Review of Test Records

Results from the preliminary evaluation performed by the licensee appeared to be acceptable. No permanent damages to the concrete structure and steel liner plates were observed.

d. Repair of Unsound Concrete

During the SIT, the NRC inspector performed a field walkdown inspection to determine whether the licensee's commitments were fully implemented in accordance with the applicable procedure. The inspector noted that unsound concrete was found in two places on the containment structure. One was located at Elevation 565'-7" near grease can D5-22, the other was located at Elevation 566'-4" near grease can D6-21. The unsound concrete was subsequently examined by licensee representatives including representatives from S&L and Newberg Company. NCR No. 213-1955 was initiated and evaluated by Newberg Company as a result of the examination. Corrective action to repair the above unsound concrete was completed in accordance with the procedure on November 3, 1987. Furthermore, a team consisting of members from CECO, S&L, and Newberg performed a walkdown in the containment dome area to ensure that all concrete which required repair was complete. Two additional small areas were identified for repair as a result of this walkdown.

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

9. Testing of Pipe Support and Restraint Systems (70370)

a. Review of Test Programs and Procedures

The NRC inspector reviewed the relevant portions of the following documents and procedures pertaining to test programs. This review was to determine whether appropriate procedures have been established

and whether they comply with licensee commitments and NRC requirements. The NRC inspector noted that the documents and procedures reviewed appeared to be acceptable in terms of work activities associated with the test program.

- Preoperational Test Procedure BWPT-EM-50, Thermal Expansion-Primary Side (EM, Revision 1, June 24, 1987.
- Test Review Board, Pre-Test Review for BWPT-EM-50, May 18, 1987.
- Test Review Board, Post-Test Review for BWPT-EM-50, September 15, 1987.
- Nuclear Safety Department Review and Approval for BWPT-EM-50, November 13, 1987.
- CECo's Project Engineering Department (PED-1) Review and Comment on EM-50, November 2, 1987.
- CECo's PED-2 Review and Comment on EM-50, October 29, 1987.
- S&L's Review and Comment on EM-50, November 2, 1987.
- Preoperational Test Procedure BWPT-EM-52, Pipe Vibration, Revision 0, May 8, 1987.
- Test Review Board, Pre-Test Review for BWPT-EM-52, April 13, 1987.
- PED Review and Approval of Test Procedure EM-52, May 8, 1987.
- Test Review Board, Post-Test Review for BWPT-EM-52, October 29, 1987.
- S&L's Review and Comment on EM-52, October 9, 1987.

b. Preoperational Test Results Evaluation

The NRC inspector reviewed the relevant portions of the following preoperational test results pertaining to the safety-related piping systems to determine whether the results had adequately been reviewed and evaluated in accordance with licensee procedures and NRC requirements. The inspector noted that in general, licensee's evaluations with respect to the test results appeared to be acceptable in terms of identifying potential problems such as piping interferences and providing resolutions to these problems.

(1) Test Evaluation Against Acceptance Criterion 4.1

Acceptance Criterion 4.1 requires that the piping and components shall not be constrained from expanding or

contracting. The licensee's verification regarding this criterion was performed by conducting visual examinations of piping and supports at various temperature plateaus during heatup (up to 560°F) and cooldown (at ambient, less than 150°F). If evidence of a problem was noted during the testing, the problem was reported and evaluated by engineering personnel who also provided resolutions to the area of concerns.

(2) Test Evaluation Against Acceptance Criterion 4.2 and 4.3

Acceptance Criterion 4.2 requires that, at operating temperature, snubber movements should be within $\pm 25\%$ or $\pm \frac{1}{4}$ inch, whichever is greater, of calculated values.

Test Evaluation Against Acceptance Criterion 4.3 requires that during heatup and for systems whose maximum operating temperature is not attained, actual values should be within $\pm 50\%$ or $\pm \frac{1}{4}$ inch, whichever is greater, of calculated values. (Calculated value is to be interpolated from hot and cold settings).

(3) Summary of Evaluation

The following is a brief summary of the piping subsystem evaluations generated by the licensee during the course of the tests.

- o Piping subsystems examined: 110
- o Deficiency items written: 76
- o Potential Thermal Growth Interferences written: 459
- o Number of snubbers examined: 375

c. Evaluation of Potential Thermal Growth Interferences (PTGI) Associated with Structural Steel Installations

During the review of EM-50 test results, the NRC inspector noted that some piping subsystems were installed very close to the structural steel members. As a result, potential contact may be possible between piping subsystems and the structural steel members during a seismic event. The inspector identified 33 PTGIs which may impact the safety-related piping subsystems because of the above concerns. These 33 PTGIs were re-evaluated by S&L to ensure that the as-built conditions can effectively function during a safe shutdown earthquake. The re-evaluation of the 33 PTGIs were documented by S&L on December 4, 1987. The following is the list of the 33 PTGIs:

2CV03-11	2RY05-06	2SI06-06
2CV22-03	2RY06-11	2SI06-15
2CV53-03	2RY27-07	2SI06-19
2CV53-13	2SD02-05	2SI09-02

2CV66-03	2SD03-03	2SI17-02
2CV10-04	2SD04-01	2SI18B-11
2RC13-12	2SD05-02	2SI18B-18
2RC16-03	2SD06-02	2SI23-01
2RC19-10	2SD21-13	2SI25-01
2RH02-43	2SD24-06	EM50-03
2RH04-05	2SI06-05	EM50-06

d. Evaluation of Snubber Position Measurements

The NRC inspector reviewed the relevant portions of the walkdown data contained in the EM-50 test procedures. The inspector noted that snubber readings shown on the snubber position column were measured by the licensee from the surface of the snubber body (housing) to the shaft sleeve. Since the distance from the surface of the snubber body to the zero mark of the snubber shaft was not recorded, and since this distance varies with the size of snubbers, the measured snubber readings cannot simply be verified with the corresponding design drawings to ensure that the snubbers installed are within the specified acceptance criteria. The inspector held discussions with licensee representatives regarding the verification of snubber readings versus the design drawings. It was determined that the licensee was to evaluate snubber readings with uncorrected measurements of less than 3/4 inch and of greater than 4 inches shown on the walkdown data sheets. Results of the evaluation revealed that three snubbers had actual settings outside the acceptance criteria. Deficiency Reports No. EM-50-41 and No. EM-50-42 were generated by the licensee on December 3, 1987, resulting from the above evaluation. At the time of this inspection, the inspector could not determine the extent the snubber readings will impact the actual installation. Pending further review, this matter is identified as Unresolved Item (457/87030-01).

e. Evaluation of Vibration Test Against Acceptance Criteria

The acceptance criteria for the pipe vibration test was structured into three levels of qualification: a visual inspection, a simple beam analysis, and a finite element computer analysis. Each method of qualification is more accurate than the other. The pipe vibration test was conducted under steady state vibration conditions. A piping section was considered acceptable if measured vibrations were within the established acceptance criteria. The calculated limit and measured level of vibration were compared to determine the acceptance or rejection of the piping subsystems. In the cases where the piping was rejected or the measured vibrations exceeded the allowable, a detailed analysis was required to determine whether retesting/corrective action was needed to ensure system integrity.

During the course of the vibration test, the licensee generated 14 deficiency reports, EM-52-A through EM-52-N. All were evaluated and were resolved by the responsible personnel. Furthermore, measured

vibrations were analyzed in accordance with the acceptance criteria to ensure that system operability is maintained and is within the acceptable limits.

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

10. IE Bulletin 79-14, Seismic Analysis For As-Built Safety-Related Piping Systems (25529); Safety-Related Pipe Support and Restraint Systems (50090); and Onsite Design Activities (37055)

The implementation and verification of the licensee's as-built program pertaining to activities set forth in IE Bulletin 79-14 for safety-related seismic Category I piping systems was examined by the NRC inspector. The attributes reviewed, inspected, and examined that are essential to the seismic piping stress analysis included: piping configuration, pipe support/restraint locations, design calculations, functional requirements, clearances, valve and valve operator locations and orientation, and seismic input for stress analysis. 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 and procedures.

a. Review of Procedures and Instructions

- o PGC Co Procedure PGCP-40, Verification, Preparation and Transmittal of "As-Constructed" Drawings, Revision 7, July 7, 1986.
- o S&L Project Instruction PI-BB-63, Procedure For: (1) Receiving and Handling Pipe "As-Built"; (2) Close-out Letter and/or Contractor Select Supports; (3) Piping Clearance Walkdown Information, Revision 4, June 19, 1986.
- o S&L Project Instruction PI-BB-64, Evaluation of Formal Analysis As-Built Subsystems, Revision 2, August 18, 1986.
- o S&L Project Instruction PI-BB-96, Limited Clearance Walkdowns, Revision 2, September 15, 1986.
- o S&L DS-MC-01-BR, Design Specification for Primary Containment Piping Penetration Assemblies, Revision 1, February 5, 1987.

The NRC inspector reviewed the relevant portions of the above procedures/instructions relative to safety-related piping subsystem installation and inspection to determine whether appropriate procedures have been established and whether they comply with licensee commitments and NRC requirements. The inspector found that these procedures/instructions meet the intent of licensee commitments and NRC requirements.

b. Field Inspection of Pipe Supports Per Design Drawings

The NRC inspector selected the following pipe supports/restraints for a verification inspection to determine whether the supports were installed and inspected in accordance with the applicable procedures and the design drawings.

<u>Support/Restraint No.</u>	<u>Type</u>	<u>Status</u>
2CS03103S	Snubber	Acceptable
2CS03106S	Snubber	Acceptable
*2CV02003S	Snubber	Tag is missing
2FW03012S	Snubber	Acceptable
2RC02008S	Snubber	Acceptable
2RC18034S	Snubber	Acceptable
2RH02009S	Snubber	Acceptable
2SD02004S	Snubber	Acceptable
2SI05013S	Snubber	Acceptable
2SI06366S	Snubber	Acceptable
2CS03029V	Spring	Acceptable
2CV25015V	Spring	Acceptable
2RC01004V	Spring	Acceptable
2RC02001V	Spring	Acceptable
2RH02064V	Spring	Acceptable
2RH08029V	Spring	Acceptable
2SD03001V	Spring	Acceptable
2SD21017V	Spring	Acceptable
2SI16006	Spring	Acceptable
2SI16012	Spring	Acceptable

Supports/restraints observed but were not on the original selection:

*2CV030015	*2RH02054S
*2CV030025	*2RY06003R
*2CV16008S	*2SI01008R
*2FW03008R	*2SI09009X
*2RC01005V	**2SH11B051X
*2RH02002S	**2SH11B099X

*Indicates that support tag was either missing or was covered with insulation.

**Indicates that these are Class D type supports and had loose nuts in connections.

The above supports/restraints were inspected by the licensee QC personnel and the NRC inspector using the corresponding as-built design drawings for general configuration, identification, cold setting for snubbers, and cold position for spring cans. In general, these supports/restraints were installed in accordance with the as-built design documents. However, while conducting the as-built

verification walkdowns, the NRC inspector observed that the above 11 supports with * showed either the tag was missing or was covered with insulation. Furthermore, the above two supports with ** had loose nuts in the connections. The two supports are Class D type supports (nonsafety-related) and are not subjected to QC inspection. However, the inspector noted that some safety-related piping systems were installed adjacent to the non-safety piping. The fall down of the non-safety piping can impact the safety-related piping. Consequently, an assurance must be provided to protect the safety-related piping. The inspector held discussions with licensee representatives regarding the tag issue and the two improperly installed Class D supports. The licensee agreed to initiate a sample program by selecting those Class D supports whose failure may impact safety-related piping systems. Results of the sample program revealed that only one of the 50 supports inspected had loose nuts. S&L's evaluation concluded that the support with loose nuts can still perform its intended function. The sample program was documented in licensee's letter SFE/BWD#2186, dated December 2, 1987. With regard to the tag issue, the licensee considers that identification tag for supports is no longer required once a support was installed and inspected. However, the licensee stated that supports which are required for inservice inspection will be provided with identification tags.

c. Review of Stress Report for Safety-Related Piping Subsystems

The NRC inspector selected the following safety-related piping stress report packages for a verification review to determine whether the packages contain all necessary informations in terms of satisfying the intent of the Bulletin requirements.

<u>Piping Stress Report</u>	<u>Piping System</u>
2CS05	Containment Spray
2MS08	Main Steam
2RY27	Reactor Coolant
2SI21	Safety Injection

The NRC inspector reviewed the relevant portions of the above stress packages to determine whether the analysis and calculations contained in the packages were performed in accordance with the applicable procedures/instructions, NRC requirements and licensee commitments. The stress packages were prepared and documented by S&L to ensure that all field reconciliation calculations and all as-built analysis information was complete and included in these packages. Furthermore, the relevant portions of the design criteria, design loads, seismic input, and analysis output were verified by the inspector for conformance to the analysis criteria, applicable codes/standards, NRC requirements and licensee commitments. The inspectors noted that the attributes contained in the above stress packages appeared to be adequate in terms of meeting NRC requirements and licensee commitments.

d. Review of Licensee's Audit Report

The NRC inspector reviewed two audit reports conducted by licensee's Quality Assurance Department. Audit No. QA-20-87-520, from June 29 through July 6, 1987 and Audit No. QA-20-87-530, from September 14-18, 1987, in the areas of Quality Assurance Program, Design Control, QA Records and Audits. The assessment of the two audits concluded that S&L's onsite design activities were performed in accordance with procedural requirements and that the onsite groups were interfacing with other contractors and their corporate office to provide resolutions to field problems in an acceptable manner.

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

11. Training and Qualification (4:400)

The NRC inspector reviewed the training and qualification records for: five welders working in the area of safety-related piping and support installation, three key personnel responsible for performing the structural integrity test, and three key personnel responsible for conducting thermal walkdowns and piping vibration measurements. All the aforementioned individuals were trained and qualified in accordance with the applicable procedures and instructions.

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

12. Unresolved Item

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. One new unresolved item identified during this inspection is discussed in Paragraph 9.d.

13. The inspector met with site representatives (denoted in Persons Contacted Paragraph) at the conclusion of the inspection. The inspector summarized the scope and findings of the inspection noted in this report. 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.