TI 2515/29
Issue Date: 9/14/79

INSPECTION REQUIREMENTS FOR IEB 79-14

I. OBJECTIVE

The objective of this temporary instruction is to provide guidance for IE inspection and review of licensees' actions and written responses to IE Bulletin 79-14 including Revision 1 to Page 2 of the Bulletin. Bulletin 79-14 requests that licensees assure that seismic analyses of safety-related piping systems accurately reflect the as-built configuration of the plant.

II. BACKGROUND

Recently, two issues were identified which are related to the validity of seismic analyses. These are the analytical technique for combining seismic loads and the validity of input information for seismic analyses. IE Bulletins 79-07 (combining seismic loads), 79-02 (as-built condition of pipe supports) and 79-04 (actual valve weights) address these issues.

As a result of issuing IE Bulletin 79-07 and show cause orders to four licensees, the concern regarding the technique for combining seismic loads was essentially resolved. IE Bulletin 79-02 and 79-04, however, have led to discovery of some failures to conform to design documents which are outside the scope of these bulletins and could have an adverse effect on the validity of the seismic analyses. Based on this fact, IE and NRR concluded that it is necessary to request licensees to verify that other seismic analysis input information is correct by comparison of this input with the physical facility as constructed. IE Bulletin 79-14 was issued for this purpose. The bulletin request that licensees establish an ad hoc inspection program scheduled so that the required inspections are completed within 120 days. Further, the bulletin requires that licensees resolve specific nonconformances by either making changes to the system such that it conforms to design or by correcting the seismic analysis to demonstrate conformance of the as-built system to design criteria. It also requires that licensees take action to correct administrative problems which could allow this problem to recur.

III. BULLETIN REQUIREMENTS

To comply with the requests in IE Bulletin 79-14, it will be necessary for licensees to do the following:

1. Identify Inspection Elements

The licensee must himself or through his contractors or consultants: (a) identify the piping system parameters which were input into the seismic analyses, (b) identify specifically the design documents from which values of the parameters were obtained for the seismic analyses

and (c) establish acceptance criteria which as-built values of these parameters must meet. System parameters which are important include piping system geometry; locations and orientations of anchor points and restraints; masses; locations of centers of gravity; sizes and cross sections of piping, supports and restraints; restraint clearances; and material properties. To competently comply with Item 1 in the Bulletin the licensee must assure that the persons identifying these inspection elements are sufficiently conversant with the seismic analysis documents to identify all significant inputs and their sources. Inspection elements must be identified for those safety-related piping systems addressed in the bulletin. The licensee must then report to the regional office in accordance with Item 1 of the Bulletin.

For older plants for which seismic design criteria did not exist at the time the plants were licensed, licensees are expected to inspect safety-related piping 2-1/2 inches in diameter and greater for conformance to design requirements. For these plants, licensees should identify inspection elements and acceptance criteria for the parameters identified above and report to the regional office in accordance with Item 1 of the Bulletin.

2. Inspect Part of the Accessible Piping

For each system selected by the licensee in accordance with Item 2 of the Bulletin, the licensee is expected to verify by physical inspection, to the extent practicable, that the inspection elements meet the acceptance criteria. In performing these inspections, the licensee is expected to use measuring techniques of sufficient accuracy to demonstrate that acceptance criteria are met. Where inspection elements important to the seismic analysis cannot be viewed because of thermal insulation or location of the piping, the licensee is expected to remove thermal insulation or provide access. Where physical inspection is not practicable, e.g., for valve weights and materials of construction, the license is expected to verify conformance by inspection of quality assurance records. If a nonconformance is found, the licensee is expected in accordance with Item 4 of the Bulletin to perform an evaluation of the significance of the nonconformance as rapidly as possible to determine whether or not the operability of the system might be jeopardized during a safe shutdown earthquake as defined in the Regulations. This evaluation is expected to be done in two phases involving an initial engineering judgment (within 2 days), followed by an analytical engineering evaluation (within 30 days). Where either phase of the evaluation shows that system operability is in jeopardy, the licensee is expected to meet the applicable technical specification action statement and complete the inspections required by Items 2 and 3 of the Bulletin as soon as possible. The licensee must report the results of these inspections in accordance with the requirements for content and schedule as given in Items 2 and 3 of the Bulletin.

3. Inspect Remaining Piping

The licensee is expected to inspect, as in Item 2 above, the remaining safety-related piping systems which were seismically analyzed and to report the results in accordance with the requirements for content and schedule as given in Item 3 of the Bulletin.

4A. Evaluate Nonconformances

With regard to Item 4A of the Bulletin, the licensee is expected to include in the initial engineering judgment his justification for continued reactor operation. For the analytical engineering evaluation, the licensee is expected to perform the evaluation by using the same analytical technique used in the seismic analysis or by an alternate, less complex technique provided that the licensee can show that it is conservative.

If either part of the evaluation shows that the system may not perform its intended function during a design basis earthquake, the licensee must promptly comply with applicable action statements and reporting requirements in the Technical Specifications.

4B. Submit Nonconformance Evaluations

The licensee is expected to submit evaluations of all nonconformances and, where the licensee concludes that the seismic analysis may not be conservative, submit schedules for reanalysis in accordance with Item 4B of the Bulletin or correct the nonconformances.

4C. Correct Nonconformances

If the licensee elects to correct nonconformances, the licensee is expected to submit schedules and work descriptions in accordance with Item 4C of the Bulletin.

4D. Improve Quality Assurance

If nonconformances are identified, the licensee is expected to evaluate and improve quality assurance procedures to assure that future modifications are handled efficiently. In accordance with Item 4D of the Bulletin, the licensee is expected to revise design documents and seismic analyses in a timely manner.

IV. REQUIREMENTS FOR IE INSPECTION

Evaluation of licensees' actions will consist of inspections on a sampling basis and reviews of written responses in the field to assure that licensees responded to the Bulletin in a timely and competent manner and reviews at Headquarters to assure that licensees' actions are appropriate. For each site, the inspector will inspect the following:

1. Development of Inspection Elements

Review the organization and the qualifications of the persons who developed the inspection elements. Interview one of those persons if available on site. Inspect some of the documentation of inspection elements and acceptance criteria which was prepared for use by personnel inspecting the piping systems for the licensee. If documentation of the seismic analysis is available at the site, inspect it in conjunction with the documentation of inspection elements to determine that pertinent parameters and values were identified as required by Item 1 of the Bulletin. Also determine, to the extent possible, that acceptance criteria were developed in a rational way.

Inspections covering the area described above will also be conducted within the organizations of three architect engineers. Selection of one architect engineer each by Regions II, III and V will be coordinated with the Vendor Inspection Branch by Technical Programs/Headquarters.

Potential generic problems identified during licensee and architect engineer inspections should be referred to the appropriate regional task group representative as identified in Section VI.

2. Licensees' Inspection of Accessible Piping

Observe in part the physical inspections of accessible piping systems performed by licensees in accordance with Item 2 of the Bulletin. Review licensees' reports to determine that they accurately reflect the work done. Independently inspect a segment of a piping system which the licensee has completed. For that segment, inspect each inspection element to the extent practicable.

3. Licensees' Inspection of Normally Inaccessible Piping

In accordance with Item 3 of the Bulletin, do the work described in Item 2 above.

4A. Nonconformance Evaluations

Where nonconformances are identified, determine that evaluations were initiated as soon as was reasonably possible and have been completed in accordance with Item 4A of the Bulletin and Section III, Items 2 and 4A, above. Assure that action was taken in accordance with action statements in Technical Specifications.

4B. Submittal of Nonconformance Evaluations

Determine that licensees have submitted all completed nonconformance evaluations to NRC per the distribution given in the Bulletin. Also, determine that licensees have submitted schedules as required by Item 4B in the Bulletin where reanalysis is indicated by licensees.

4C. Correction of Nonconformances

Where licensee elect to correct significant nonconformances, determine that schedules and reports required in Item 4C of the Bulletin have been submitted.

4D. Improvement of Quality Assurance

For sites where nonconformances are identified, assure that necessary improvements to quality assurance procedures related to design changes due to modifications or maintenance are completed within 120 days of the date of the Bulletin. Also assure that design documents and seismic analyses are revised as required by Item 4D of the Bulletin and in accordance with Section III, Item 4D above.

V. REPORTING REQUIREMENTS

The results of inspections required by Section IV above, shall be included in the usual inspection report. The regions shall transmit a copy of pertinent portions of inspection reports describing this effort to R. W. Woodruff TP, ROI, IE; and to S. B. Hosford, DOR, NRR.

VI. EVALUATION OF LICENSEES' REPORTS

Reports submitted by licensees in accordance with the requirements of the Bulletin will be evaluated at Headquarters by a task group with the following membership:

C. J. DeBevec,	ROI, IE (for BWRs)
*R. W. Woodruff,	ROI, IE (for PWRs)
J. C. Glynn,	RCI, IE (for construction)
R. A. Feil,	RI, IE (for RI reactors)
L. Modenos,	RII, IE (for RII reactors)
I. T. Yin,	RIII, IE (for RIII reactors)
R. H. Brickley,	RIV, IE (for AEs and RIV reactors)
T. W. Hutson,	RV, IE (for RV reactors)
*R. G. LaGrange,	DOR, NRR (for structural review)
*R. Lobel,	DOR, NRR (for W systems review)
*M. M. Mendonca,	DOR, NRR (for GE systems review)
*S. S. Diab,	DOR, NRR (for CE/B&W systems review)
*S. B. Hosford,	DOR, NRR

This task group will prepare evaluations of the reports submitted for each operating facility.

Reports submitted by each holder of a construction permit will be evaluated, by the task group in conjunction with the licensing review which leads to issuance of the operating license.

An interoffice panel, as indicated above by asterisks, has been identified from the task group to respond to licensees' questions on the intent of the Bulletin and to evaluate licensees' arguments for continued plant operation with safety related equipment or systems which are degraded from the design intent. The panel shall be convassed or convened based upon questions directed from the regional offices. The panel will discourage licensees from bypassing the regional offices since most of the questions raised can be readily answered there. The panel consists of the persons noted by an asterisk above.

VII. EXPIRATION

This TI shall expire on January 4, 1982.

VIII. IE HEADQUARTERS CONTACTS

H. J. Wong, R. W. Woodruff, E. L. Jordan (49-28180)

IX. MODULE TRACKING SYSTEM INPUT (766 DATA)

For module tracking system input, record the actual inspection effort against Module No. 25529B.