



Nebraska Public Power District

September 4, 1979

Mr. Karl V. Seyfrit, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region IV
611 Ryan Plaza
Suite 1000
Arlington, TX 76011

Subject: IE Bulletin 79-14 "Seismic Analysis for
As-Built Safety-Related Piping Systems"

Dear Mr. Seyfrit:

Enclosed as Attachment 1 please find the 60 day response requested in Item No. 2 of the subject bulletin. Attachment 1 is a description of the results of the inspection of normally accessible safety-related systems. No nonconformances have been discovered to date, as a result of the review conducted in accordance with the subject bulletin.

Per the commitment made in our letter of August 1, 1979, Attachment 2 contains the response to Item No. 1 for the safety-related piping systems analyzed by the NSSS Vendor.

If you have any questions relative to the enclosed responses, please do not hesitate to contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read 'Jay M. Pilant'.

Jay M. Pilant
Director of Licensing
and Quality Assurance

JDW/cmk

Enclosure

cc: Director of the Office of Inspection and Enforcement
U.S. Nuclear Regulatory Commission
Washington, DC 20555

Director of the Division of Operating Reactors
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
Washington, DC 20555

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NEBRASKA PUBLIC POWER DISTRICT
COOPER NUCLEAR STATION
RESPONSE TO ITEM NO. 2
IE BULLETIN 79-14

For portions of systems which are normally accessible, one loop has been inspected in all redundant systems and all nonredundant systems have been inspected for conformance to the seismic analysis input set forth in design documents.

Parameters included in the inspection were: pipe run geometry, support and restraint design, locations, function and clearance, pipe attachment and valve and valve operator location. All embedments are being verified as part of IE Bulletin 79-02. Valve weights are being obtained from data previously verified within the last 12 months.

Results of the inspection program to date are as follows:

- (1) The pipe run geometry agrees with the as-built isometric drawings.
- (2) Pipe hangers and seismic supports have all been accounted for, and minor discrepancies (i.e. base plate thickness, number of anchor bolts, etc.) are being resolved. A summary report will be provided in the final response to IE Bulletin 79-02 "Pipe Support Base Plate Designs Using Concrete Expansion Anchor Bolts."
- (3) Hanger function types were verified and no discrepancies were identified.
- (4) Valves are in the location shown on as-built isometric drawings.
- (5) Valve weights, exact hanger and seismic location, hanger and seismic restraint dimensions, valve operator location and weights were obtained and are being forwarded to the architect/engineer for the complete seismic review.

During a recent forced outage approximately 50% of the normally inaccessible safety-related systems were inspected as required by Item No. 3 of IE Bulletin 79-14. No major discrepancies were noted and the five inspection results summarized above apply.

As usual, the detailed results of these inspections discussed above are available at Cooper Nuclear Station for NRC review.

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NEBRASKA PUBLIC POWER DISTRICT
COOPER NUCLEAR STATION
NSSS VENDOR SAFETY-RELATED SYSTEMS
TO BE INSPECTED UNDER
IE BULLETIN 79-14

- A. MAIN STEAM PIPING SYSTEM - up to and including Inboard Main Steam Isolation Valve and penetration before Outboard Main Steam Isolation Valve.
- B. RECIRCULATION PIPING SYSTEM - up to and including first weld of branch connection for RHR return and suction lines.

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NSSS Vendor Design DocumentsA. MAIN STEAM PIPING SYSTEM

<u>Item No.</u>	<u>Description</u>
1.	Primary Steam System - Design Report - General Electric Company Document No. 22A2624, Revision 0, dated November 11, 1971.
2.	Keith, Feibush Associates, Engineers, San Francisco, "Earthquake Analysis Main Steam Lines", Cooper Nuclear Station (218 Type 2), dated October 22, 1969.
3.	Steam Pipe Suspension; General Electric Company Drawing No. 731E671.
4.	Primary Steam Piping; General Electric Company Drawing No. 731E611.

B. RECIRCULATION PIPING SYSTEM

1. Recirculation System - Design Report - General Electric Company Document No. 22A2628, Revision 0, dated April 19, 1972.
2. Keith, Feibush Associates, "Earthquake Analysis 218 Standard Plant Interim Report, Recirculation Lines", dated December 3, 1969.
3. General Electric Company, "Nuclear Boiler Design Specification" Specification No. 22A1437 and Data Sheet No. 22A1314AE.
4. Recirculation Loop Suspension System, General Electric Company Drawing No. 730E12088.
5. Recirculation Loop Piping, General Electric Company Drawing No. 729E74688.
6. Burns & Roe, Inc. "RHR Piping", SK-1273 Sheet 38, 39 & 40. Cooper Nuclear Station, May 1, 1969.

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Description of Seismic Analysis Input Information
Contained in NSSS Vendor Design Documents
(contained on preceeding page)

A. MAIN STEAM PIPING SYSTEM

Item #1

Forces and moments due to operational basis earthquake, inertia effects (reference 1) were appropriately combined with other loads such as pressure, dead weight, thermal expansion, and jet force, to meet the intent of ANSI B31.1, Power Piping Code - 1967 Edition. All input references are listed on Sheet No. 25 of this report.

Item #2

Seismic analysis was done by Keith, Feibush Associates, Engineers, for Cooper Nuclear Power Station (Standard 218, Type 2) main steam lines. Weight of safety valves, safety relief valves, main steam isolation valves and pipe weights are given on Sheet No. 10 (Reference 1).

Operating basis seismic response spectrum is described under "Seismic Criteria" (Reference 1). The response due to a vertical acceleration of 0.07g is combined with the results obtained from horizontal earthquake. The input spectrum has 0.5 percent of critical damping.

Item #3

This drawing gives shock suppressor locations, rating for all four main steam lines (A,B,C, & D).

Item #4

This drawing gives pipe spool details as an input to stress analysis, Item No. 1.

B. RECIRCULATION PIPING SYSTEM

Item #1

Forces and moments due to operational basis earthquake inertia effects, reference 2, were appropriately combined with other loads such as pressure, dead weight and thermal expansion, to meet the intent of ANSI B31.1, Power Piping Code - 1967 Edition. All input references are listed on Sheet No. 28 of this report.

Item #2

Seismic analysis was done by Keith, Feibush Associates, Engineers, San Francisco for "218 inch Standard Plant Interim Report" for recirculation piping system. Input to seismic analysis are referenced on Sheet No. 7 of this report.

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The Seismic Criteria for the dynamic analysis of recirculation piping system is shown in Figure 3 (reference 2). The input spectrum has 0.5 percent of critical damping. The response due to vertical acceleration of 0.07g is combined with the results obtained for the above horizontal spectrum.

Item #3

The Design Report (22A2628) meets the intent of this document, including the Data Sheets.

Item #4

This drawing on Sheet No. 1 gives Shock Suppressor locations, rating for both loops A & B.

Item #5

This drawing gives pipe spool details as an input to stress analysis, Item No. 1 (22A2628).

Item #6

This RHR pipe routing drawing provides input to mathematical model for recirculation piping system load evaluation.

References:

1. Keith, Feibush Associates, Engineers, San Francisco, "Earthquake Analysis Main Steam Lines", Cooper Nuclear Station (218 Type 2), dated October 22, 1969.
2. Keith, Feibush Associates, "Earthquake Analysis 218 Standard Plant Interim Report, Recirculation Lines", dated December 3, 1969.

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