

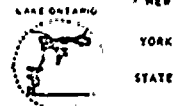


ROCHESTER GAS AND ELECTRIC CORPORATION • 89 EAST AVENUE, ROCHESTER, N.Y. 14649

LEON D. WHITE, JR.
VICE PRESIDENT

TELEPHONE
AREA CODE 716 546-2700

CENTRAL FILES



July 31, 1979

Mr. Boyce H. Grier, Director
U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Region I
631 Park Avenue
King of Prussia, PA 19406

Subject: IE Bulletin No. 79-14/LER 79-015
Seismic Analyses for As-Built Safety Related Piping Systems
R. E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Dear Mr. Grier:

Enclosed are copies of our initial response to the subject bulletin; and a 14 day report LER 79-015 regarding nonconformances identified during inspections required by the bulletin.

Very truly yours,

L. D. White, Jr.

L. D. White, Jr.

Enclosure

xc: U.S. Nuclear Regulatory Commission
Office of Inspection and Enforcement
Division of Reactor Operations Inspection
Washington, DC 20555

AOTI 2 68

~~RECEIVED~~

7909100 5979

30 Day Response to IE Bulletin No. 79-14
Seismic Analysis for As-Built Safety Related Piping Systems
R.E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

1. Background

- a) The original Ginna Station design did not utilize dynamic computer analyses for seismic qualification of Category I piping. The reactor coolant system piping was seismically qualified using a combination of model testing and analysis. Category I piping 2½ inch nominal pipe size and larger was seismically qualified using equivalent static analyses. Category I piping 2 inch nominal pipe size and smaller was seismically qualified using support spacing tables. Dynamic analysis of sections of the A residual heat removal and B main steam piping were performed solely to verify the equivalent static analysis method. In addition, an on-site inspection of Category I piping was performed which resulted in the installation of additional supports. Details of the original seismic qualification may be found in our June 9, 1969 submittal to the AEC entitled "Additional Information on Seismic Design of Class I Piping".
- b) In general, modifications or additions to piping systems at Ginna since initial operation have been seismically qualified using dynamic analyses. Some small piping has been seismically qualified utilizing equivalent static analysis or spacing table techniques.
- c) As a result of IE Bulletin No. 79-07 new dynamic analyses have been performed for sections of the A residual heat removal, B main steam, and charging system piping. The reanalyses were based on as-built piping system isometrics and support information. Details of these analyses may be found in our responses to that bulletin dated April 25, 1979 and July 26, 1979.
- d) We have begun a piping seismic analysis upgrade program. This program will involve the reanalysis of essential Category I piping systems using dynamic methods. The scope and schedule for this program were discussed with members of the Region 1, IE Headquarters, and DOR Staff in a July 24, 1979 meeting in Bethesda, MD.

2. Program

- a) In order to provide assurance that Seismic Category I piping systems are built in accordance with design requirements, we have implemented an inspection and evaluation program. Piping systems 2½ inch nominal

size and larger which were seismically qualified using equivalent static analyses are being inspected to assure they meet design requirements. The design requirements are being established based on the piping orthographic drawings and, where available, pipe support location and detail drawings. Evaluations are being performed to assure that the piping configuration is in accordance with the orthographic drawings; pipe supports are installed and located as shown on the piping orthographic and support location drawings; and pipe supports will perform their intended function as shown on the detail drawings.

- b) Piping systems, regardless of size, which have been seismically qualified using dynamic analyses are being inspected as described above and the analysis input information verified. The input information is being established based on the seismic analysis isometric drawings. Evaluations are being performed to assure that the information shown on the isometric drawings is compatible with the as-built piping system.
- c) The information obtained in the piping system inspections is being used to prepare as-built isometric drawings. These isometric drawings will contain the information required for the dynamic analyses to be performed in the upgrade program discussed in 1(d) above. Pipe support information obtained from the inspections is being used to update, where available, support location and detail drawings. Where support detail drawings do not currently exist, field drawings are being prepared to show the as-built condition. Drawing indexes listing title, identification number, revision, and date are being prepared for these new and revised drawings.
- d) Nonconformances to the design requirements are being evaluated to determine if they affect system operability. Any nonconformances which could possibly affect system operability are being documented and an engineering evaluation performed. Where the acceptability of the nonconformance cannot be established by simplified engineering analysis, the item is repaired or reworked.

3. Systems

- a) The as-built inspection and evaluation program includes the following systems:

- Reactor Coolant
 - Main Steam
 - Main Feedwater

Auxiliary Feedwater
Standby Auxiliary Feedwater
Safety Injection
Residual Heat Removal
Containment Spray
Chemical and Volume Control
Component Cooling
Service Water
Steam Generator Blowdown

Details of the specific piping included will be shown on system piping and instrumentation drawings.

- b) Attachment 1 is a listing of the piping drawings being used to establish the design requirements for 2½ inch and larger piping systems which were seismically qualified using equivalent static analyses and; the piping and isometric drawings being used to establish the design requirements, and input information, for piping systems, regardless of size, which have been seismically qualified using dynamic analyses.

4. Schedule

- a) Due to the recent plant outage to perform the inspections and repairs required by IE Bulletin No. 79-13, we are well into our inspection and evaluation program. All inaccessible piping systems (i.e. inside containment) have been inspected and nonconformances evaluated. Details of the nonconformances, and their disposition, are contained in LER 79-015. Final documentation of this phase of the program, and preparation of the drawings described in 2(c) above, will be completed within 60 days of the date of the bulletin. A complete description of the results of this phase will be submitted at that time.
- b) Inspection and evaluation of accessible piping systems (i.e. outside containment) is in progress at this time. Completion of this phase of the program, and submittal of the results, will be completed within 120 days of the date of the bulletin.
- c) The schedule for completion of the dynamic analyses in the seismic upgrading program was discussed in the meeting referred to in 1(d) above.

Attachment 1
30 Day Response to IE Bulletin No. 79-14
Seismic Analysis for As-Built Safety Related Piping Systems
R.E. Ginna Nuclear Power Plant, Unit No. 1
Docket No. 50-244

Ginna Station

Piping and Piping Analysis
Drawing List

Rochester Gas and Electric Corporation
89 East Avenue
Rochester, N.Y. 14649

EWR 2512

Revision 0

August 1, 1979

CONTENTS

<u>Section</u>		<u>Page</u>
1.0	Reactor Coolant System	1
2.0	Main Steam	2
3.0	Main Feedwater	3
4.0	Standby Auxiliary Feedwater	4
5.0	Safety Injection	5
6.0	Residual Heat Removal	6
7.0	Containment Spray	7
8.0	Chemical and Volume Control	8
9.0	Component Cooling	9
10.0	Service Water	10
11.0	Steam Generator Blowdown	11
12.0	Auxiliary Feedwater	12
13.0	Boric Acid	13

1.0 REACTOR COOLANT SYSTEM

Piping Drawings

- | | | | |
|---|---------------|-----------|---|
| 1 | GAI-D-304-601 | Rev. VIII | Plans & Sects. |
| 2 | GAI-D-304-602 | Rev. VIII | Press Relief & Spray Piping
Plans |
| 3 | GAI-D-304-603 | Rev. IX | Press Relief & Spray Piping
Sections |

2.0 MAIN STEAM SYSTEM

Piping Drawings

1	GAI-D-304-014	Rev. V	Plan
2	GAI-D-304-015	Rev. VII	Plan & Sections
3	GAI-D-304-016	Rev. VII	Sections
4	GAI-D-304-023	Rev. III	Relief Valves

Analysis Isometric Drawings

1	GAI-C-302-543	Rev. 1	SG 1A to MS Header
2	GAI-C-302-544	Rev. 1	SG 1B to MS Header

3.0

MAIN FEEDWATER

Piping Drawings

- | | | | |
|---|---------------|-----------|-----------------------------------|
| 1 | GAI-D-304-083 | Rev. V111 | F.W. Pump Suct. & Disch. Plan |
| 2 | GAI-D-304-084 | Rev. V | F.W. Pump Suct. & Disch. Sections |

4.0 STANDBY AUXILIARY FEEDWATER

Piping Drawings

1	GAI-D-381-023	Rev. 1	Cond. Suction to Pump
2	GAI-D-381-033	Rev. 4	Plans in Containment
3	GAI-D-381-034	Rev. 2	Plans in Aux. Bldg. (253-0)
4	GAI-D-381-035	Rev. 3	Plans in Aux. Bldg. (271-0)
5	GAI-D-381-036	Rev. 4	Plans in Aux. Bldg. Add.
6	GAI-D-381-038	Rev. 0	Misc. Sections, Aux. Bldg. Add.
7	GAI-D-381-039	Rev. 2	Details, Aux. Bldg. Add.

Analysis Isometric Drawings

1	GAI-C-381-026	Rev. A	Cond. Tk to Pump Suctions
2	GAI-C-381-040	Rev. D	Pen. 119 to SGA
3	GAI-C-381-041	Rev. A	Pen. 123 to SGB
4	GAI-C-381-042-1	Rev. A	Pen. 119 to Pump
5	GAI-C-381-042-2	Rev. A	Pen. 119 to Pump
6	GAI-C-381-042-3	Rev. A	Pen. 119 to Pump
7	GAI-C-381-042-4	Rev. A	Pen. 119 to Pump
8	GAI-C-381-042-5	Rev. A	Pen. 119 to Pump
9	GAI-C-381-043-1	Rev. A	Pen. 123 to Pump
10	GAI-C-381-043-2	Rev. A	Pen. 123 to Pump
11	GAI-C-381-043-3	Rev. A	Pen. 123 to Pump
12	GAI-C-381-043-4	Rev. A	Pen. 123 to Pump
13	GAI-C-381-043-5	Rev. A	Pen. 123 to Pump

5.0

SAFETY INJECTION

Piping Drawings

1	GAI-D-304-642	Rev VIII	Plans Inside Cont.
2	GAI-D-304-643	Rev VII	Sections Inside Cont.
3	GAI-D-304-644	Rev. XII	Plans & Sects. (Aux Bldg)

6.0

RESIDUAL HEAT REMOVAL

Piping Drawings

1	GAI-D-304-611	Rev. VI	Plan (Inside Cont)
2	GAI-D-304-612	Rev. IV	Sections (Inside Cont)
3	GAI-D-304-615	Rev. VIII	Plan (Aux Bldg)
4	GAI-D-304-616	Rev. IX	Sections (Aux Bldg)

7.0

CONTAINMENT SPRAY

Piping Drawings

1	GAI-D-304-641	Rev. VIII	Plans & Sections in Containment
2	GAI-D-304-642	Rev. VIII	Plan In Containment
3	GAI-D-304-643	Rev. VII	Sections In Containment
4	GAI-D-304-644	Rev. XII	Plans and Sections, Aux. Bldg.

8.0 CHEMICAL AND VOLUME CONTROL

Piping Drawings

1	GAI-D-304-630	Rev. V	Plan & Sect. (Misc. in Cont.)
2	GAI-D-304-631	Rev. VIII	Plan (Mics. in Cont.)
3	GAI-D-304-632	Rev. VI	Sect. (Misc. in Cont.)
4	GAI-D-304-633	Rev. XI	Seal Water & Charging Line Plan & Sect. (In Cont.)

Analysis Isometric Drawings

1	GAI-C-381-076	Rev. 0	From 10" AC to Pen 112
2	GAI-C-381-077	Rev. 0	Valves 200 A, B and 202
3	GAI-C-381-078	Rev. 0	Regen. Hx. to Isolation
4	GAI-C-381-079	Rev. 0	8" R.C. Line to Isolation

9.0 COMPONENT COOLING

Piping Drawings

1	GAI-D-304-618	Rev. X	Clg. to RV Supports/RCP's
2	GAI-D-304-619	Rev. IX	Clg. to RV Supports/RCP's
3	GAI-D-304-621	Rev. VIII	Plans, Aux. Bldg. 235-8
4	GAI-D-304-622	Rev. VII	Plans, Aux. Bldg. 253-0
5	GAI-D-304-623	Rev. III	Plans, Aux. Bldg. 271-0
6	GAI-D-304-625	Rev. II	To Sample Coolers

10.0

SERVICE WATER

Piping Drawings

1	GAI-D-304-691	Rev VI	Cooling to Cont Recirc Cooling Units - Plan
2	GAI-D-304-692	Rev III	Cooling to Cont Recirc Cooling Units - Sect.
3	GAI-D-304-693	Rev IX	Plans (Int. Bldg.)
4	GAI-D-304-694	Rev IX	Sections (Int. Bldg.)
5	GAI-D-304-695	Rev VIII	Plans (Aux Bldg.)
6	GAI-D-304-696	Rev VII	Sections (Aux. Bldg.)
7	GAI-D-304-697	Rev II	Plan Above El. 253-8 & Sections Misc. (Aux Bldg.)
8	GAI-D-304-698	Rev IV	Cooling Water to Air Recirc. Motors Plan & Sect. (Cont.)

Analysis Isometric Drawings

1	GAI-C-381-024-1	Rev. B	SW suction to SAFW Pump A
2	GAI-C-381-024-2	Rev. B	SW suction to SAFW Pump A
3	GAI-C-381-024-3	Rev. B	SW suction to SAFW Pump A
4	GAI-C-381-025-1	Rev. A	SW suction to SAFW Pump B
5	GAI-C-381-025-2	Rev. B	SW suction to SAFW Pump B
6	GAI-C-381-025-3	Rev. B	SW suction to SAFW Pump B
7	GAI-C-381-025-4	Rev. B	SW suction to SAFW Pump B

11.0 STEAM GENERATOR BLOWDOWN

Piping Drawings

- | | | | |
|---|---------------|----------|----------------------------|
| 1 | GAI-D-302-121 | Rev. XVI | Plans, Containment |
| 2 | GAI-D-381-050 | Rev. 3 | Piping Reroute, Int. Bldg. |

Analysis Isometric Drawings

- | | | | |
|---|---------------|--------|------------------------|
| 1 | GAI-C-381-086 | Rev. 1 | Pen. 322 to Iso. Valve |
|---|---------------|--------|------------------------|

12.0

AUXILIARY FEEDWATER

Piping Drawings

- | | | | |
|---|---------------|--------|--------------------------------|
| 1 | GAI-D-304-085 | Rev. | Cond. To Pump Suctions |
| 2 | GAI-D-304-086 | Rev. | Plans and Sections, Int. Bldg. |
| 3 | GAI-D-381-046 | Rev. 4 | New crossover, Int. Bldg. |

Analysis Isometric Drawings

- | | | | |
|---|---------------|--------|---------------------------|
| 1 | GAI-D-381-044 | Rev. D | New crossover, Int. Bldg. |
|---|---------------|--------|---------------------------|

13.0 BORIC ACID TO S.I.

Piping Drawings

1	RGE-33013-627 Rev. 5	Plans and Sections, Aux. Bldg.
2	GAI-D-304-644 Rev.	Plans and Sections, Aux. Bldg.

Analysis Isometric Drawing

1	RGE-33013-625 Rev. 0	B.A. Tanks to M.O.V's
---	----------------------	-----------------------

LICENSEE EVENT REPORT

(CAR 1230)

CONTROL BLOCK: ①

(PLEASE PRINT OR TYPE ALL REQUIRED INFORMATION)

0	1	N	Y	R	E	G	1	2	0	0	-	0	0	0	0	0	0	3	4	1	1	1	1	4		5									
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33									
LICENSEE CODE														LICENSE NUMBER										LICENSE TYPE										CAT 58	

CON'T

0	1	L	6	0	5	0	0	0	2	4	4	7	0	7	2	4	7	9	8	0	8	0	1	7	9	9					
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33					
REPORT SOURCE		DOCKET NUMBER										EVENT DATE										REPORT DATE									

EVENT DESCRIPTION AND PROBABLE CONSEQUENCES ⑩

① ② | During piping system inspections required by IE Bulletin No. 79-14

③ | several pipe supports were found not to be installed in accordance

④ | with design requirements (T.S. 6.9.2.a(9)).

⑤ |

⑥ |

⑦ |

⑧ |

0	9	5	5	11	B	12	C	13	S	U	P	O	R	T	14	B	15	5	16
7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
SYSTEM CODE		CAUSE CODE		CAUSE SUBCODE		COMPONENT CODE										COMP. SUBCODE		VALVE SUBCODE	

17	7	9	—	0	1	5	—	0	1	—	—	0	
21	22	23	24	25	26	27	28	29	30	31	32	33	
LER/RO REPORT NUMBER		EVENT YEAR		SEQUENTIAL REPORT NO.		OCCURRENCE CODE		REPORT TYPE		REVISION NO.			

B	18	5	19	5	20	5	21	0	0	0	0	Y	23	N	24	A	25	B	1	3	0	26
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
ACTION TAKEN		FUTURE ACTION		EFFECT ON PLANT		SHUTDOWN METHOD		HOURS		ATTACHMENT SUBMITTED		NPRD-4 FORM SUB.		PRIME COMP. SUPPLIER		COMPONENT MANUFACTURER						

CAUSE DESCRIPTION AND CORRECTIVE ACTIONS ⑳

① ⑩ | Lack of documented approvals for field changes and nonconformances

① ⑪ | during original plant construction. Supports have been reworked

① ⑫ | or an engineering evaluation performed to establish acceptability.

① ⑬ |

① ⑭ |

1	5	G	28	0	0	0	29	NA	C	31	IE Bulletin 79-14 Inspections
7	8	9	10	11	12	13	14	15	16	17	18
FACILITY STATUS		% POWER		OTHER STATUS		METHOD OF DISCOVERY		DISCOVERY DESCRIPTION			

1	6	Z	33	Z	34	NA	NA
7	8	9	10	11	12	13	14
ACTIVITY RELEASED		CONTENT OF RELEASE		AMOUNT OF ACTIVITY		LOCATION OF RELEASE	

1	7	0	0	0	37	Z	38	NA
7	8	9	10	11	12	13	14	15
PERSONNEL EXPOSURES NUMBER		TYPE		DESCRIPTION				

1	8	0	0	0	40	NA
7	8	9	10	11	12	13
PERSONNEL INJURIES NUMBER		DESCRIPTION				

1	9	Z	42	NA
7	8	9	10	11
LOSS OF OR DAMAGE TO FACILITY TYPE		DESCRIPTION		

2	0	N	44	NA
7	8	9	10	11
PUBLICITY ISSUED		DESCRIPTION		

NAME OF PREPARER J.C. Hutton

PHONE: 716-546-2700, Ext 2502



Attachment
LER 79-015
August 1, 1979

During the piping system inspections required by IE Bulletin No. 79-14, 10 pipe supports were determined to be in nonconformance with design requirements. These supports were located on the containment spray (CS), residual heat removal (RHR), and service water (SW) systems.

The following is a listing of the supports and nonconformances (NCR's G-79-88 through G-79-93 and G-79-95 through G-79-97):

CS-53	one less support installed on lower containment spray ring than shown on drawing
CS-235	pipe clamp not installed on lower containment spray ring at 235° location as shown on drawing
CS-295	pipe clamp not installed on lower containment spray ring at 295° location as shown on drawing
CS-12	U-bolt not installed as required by drawing
RH-16	pipe clamp not installed as required by drawing
SW-3	pipe support not installed at location required by drawing
SW-20	six U-bolts not installed as required by drawing
SW-22	four U-bolts not installed as required by drawing
SW-23	pipe clamp not installed as required by drawing
SW-29	pipe support not installed at location required by drawing

Supports CS-235, CS-295, CS-12, RH-16, SW-3, SW-22, SW-23, and SW-29 have been reworked in accordance with the drawing requirements. An engineering evaluation of the nonconformance identified on CS-53 determined that the existing installation was adequate to assure performance of its intended function. Reinspection of support SW-20 showed that the nonconformance had been incorrectly reported; and it was in fact installed correctly.

The corrective actions described above have been completed. It is our conclusion that the nonconformances are a result of a lack of documented approvals for field changes and nonconformances during original plant construction. Additional inspections as required by IE Bulletin No. 79-14 are being performed as described in our response dated August 1, 1979.

