

October 1, 2018

U.S. Nuclear Regulatory Commission
Attn: Document Control Desk
Washington, DC 20555-0001

Limerick Generating Station, Units 1 and 2
Renewed Facility Operating License Nos. NPF-39 and NPF-85
NRC Docket Nos. 50-352 and 50-353

Subject: Relief Request I4R-08, Revision 1, Associated with Pressure Testing of Containment Atmospheric Control Penetration Piping

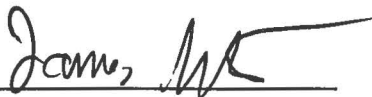
Reference: Letter from S. Koenick (U.S. Nuclear Regulatory Commission) to B. Hanson (Exelon Generation Company, LLC), "Safety Evaluation of Relief Requests I4R-05, I4R-06, I4R-07, I4R-08, I4R-09, I4R-11, I4R-12, and I4R-13, for the Fourth 10-Year Interval of the Inservice Inspection Program for Limerick Generating Station, Units 1 and 2 (CAC Nos. MF7589 and MF7590)," dated February 6, 2017

In the Referenced letter, the U.S. Nuclear Regulatory Commission approved Relief Request I4R-08 concerning the pressure testing of Containment Atmospheric Control penetration piping for the fourth interval Inservice Inspection (ISI) Program at Limerick Generating Station (LGS), Units 1 and 2. As a result of the installation of the hardened vent modification in Unit 2, I4R-08 is being revised to include this line as part of this relief request. Revisions to include the Unit 2 hardened vent line are identified with revision bars.

We request your approval by October 1, 2019. There are no regulatory commitments in this letter.

If you have any questions concerning this letter, please contact Tom Loomis at (610) 765-5510.

Respectfully,



James Barstow
Director - Licensing & Regulatory Affairs
Exelon Generation Company, LLC

Attachment: Relief Request I4R-08, Revision 1

cc: USNRC Region I, Regional Administrator
USNRC Senior Resident Inspector, LGS
USNRC Project Manager, LGS
R. R. Janati, Pennsylvania Bureau of Radiation Protection

Attachment

Relief Request I4R-08, Revision 1

10 CFR 50.55a Relief Request I4R-08

Revision 1

(Page 1 of 11)

**Request for Relief for Alternative Requirements for
Pressure Testing the Containment Atmospheric Control Penetration Piping
In Accordance with 10CFR50.55a(z)(1)
Alternative Provides Acceptable Level of Quality and Safety**

1. ASME Code Component(s) Affected

Code Class: 2
Reference: IWC-2500, Table IWC-2500-1
Examination Category: C-H
Item Number: C7.10
Description: Alternative Requirements for Pressure Testing the Containment Atmospheric Control Penetration Piping
Component Number: Multiple lines (See Note 1 below)
Drawing Number: M-57, Shts. 1 and 2; and M-55, Sht. 1 (Unit 1)
M-57, Shts. 4, 5, and 9 (Unit 2)

Note 1: A more detailed description of the pressure testing boundary is identified below.

LGS Unit 1: Class 2 Primary Containment Atmospheric Control (CAC) piping, as follows:

- Hydrogen/oxygen sample lines HCB-116, between and including containment penetrations X-28A and X-28B and valves SV-57-142, SV-57-143, SV-57-144 and SV-57-195. Reference P&ID M-57, Sheets 1 and 2.
- Drywell low flow nitrogen makeup line HCB-116, between and including containment penetration X-62 and valves HV-57-116 and SV-57-159. Reference P&ID M-57, Sheet 1.
- Hydrogen/oxygen sample lines HCB-116, between and including containment penetrations X-221A and valves SV-57-141 and SV-57-184. Reference P&ID M-57, Sheets 1 and 2.
- Nitrogen purge line HBB-125, between and including valves HV-57-109, HV-57-121 and HV-57-131. Reference P&ID M-57, Sheet 1.
- Drywell air purge line HBB-124, between and including valves HV-57-123 and HV-57-135. Reference P&ID M-57, Sheet 1.
- Suppression pool air purge line HBB-126, between and including valves HV-57-124 and HV-57-147. Reference P&ID M-57, Sheet 1.
- Drywell purge to standby gas treatment line HBB-127, between and including valves HV-57-114 and HV-57-115, and line HCB-117, between and including connection to line HBB-127 and valve SV-57-145. Reference P&ID M-57, Sheets 1 and 2.
- Suppression pool low flow nitrogen makeup line HCB-116, between and including containment penetration X-220A, valve SV-57-190 and connection to drywell low flow nitrogen makeup line HCB-116. Reference P&ID M-57, Sheets 1 and 2.

10 CFR 50.55a Relief Request I4R-08

Revision 1 (Page 2 of 11)

- Hydrogen/oxygen sample line HCB-116, between and including containment penetration X-221B and valves SV-57-186 and HV-55-126. Reference P&ID M-57, Sheet 2, and M-55, Sheet 1.
- Drywell purge exhaust bypass line HBB-127, between and including valves 57-1807 and HV-57-117. Reference P&ID M-57, Sheet 2.
- Suppression pool purge exhaust bypass line HBB-128, between and including valves 57-1810 and HV-57-118. Reference P&ID M-57, Sheet 2.
- Suppression pool purge air exhaust lines HBB-128 and HCB-117, between and including valves HV-57-104, HV-57-112 and SV-57-185. Reference P&ID M-57, Sheet 2.

LGS Unit 2: Class 2 Primary Containment Atmospheric Control piping, as follows:

- Hydrogen/oxygen sample lines HCB-216, between and including containment penetrations X-28A and X-28B and valves SV-57-242, SV-57-243, SV-57-244 and SV-57-295. Reference P&ID M-57, Sheets 4 and 5.
- Drywell low flow nitrogen makeup line HCB-216, between and including containment penetration X-62 and valves HV-57-216 and SV-57-259. Reference P&ID M-57, Sheet 4.
- Hydrogen/oxygen sample lines HCB-216, between and including containment penetrations X-221A and valves SV-57-241 and SV-57-284. Reference P&ID M-57, Sheets 4 and 5.
- Nitrogen purge line HBB-225, between and including valves HV-57-209, HV-57-221 and HV-57-231. Reference P&ID M-57, Sheet 4.
- Drywell air purge line HBB-224, between and including valves HV-57-223 and HV-57-235. Reference P&ID M-57, Sheet 4.
- Suppression pool air purge line HBB-226, between and including valves HV-57-224 and HV-57-247. Reference P&ID M-57, Sheet 4.
- Drywell purge to standby gas treatment line HBB-227, between and including valves HV-57-214 and HV-57-215, and line HCB-217, between and including connection to line HBB-227 and valve SV-57-245. Reference P&ID M-57, Sheets 4 and 5.
- Suppression pool low flow nitrogen makeup line HCB-216, between and including containment penetration X-220A, valve SV-57-290 and connection to drywell low flow nitrogen makeup line HCB-216. Reference P&ID M-57, Sheets 4 and 5.
- Hydrogen/oxygen sample line HCB-216, between and including containment penetration X-221B and valves SV-57-286. Reference P&ID M-57, Sheet 5.
- Drywell purge exhaust bypass line HBB-227, between and including valves 57-2815 and HV-57-217. Reference P&ID M-57, Sheet 5.
- Suppression pool purge exhaust bypass line HBB-228, between and including valves 57-2818 and HV-57-218. Reference P&ID M-57, Sheet 5.

10 CFR 50.55a Relief Request I4R-08

Revision 1 (Page 3 of 11)

- Suppression pool purge air exhaust lines HBB-228 and HCB-217, between and including valves HV-57-204, HV-57-212 and SV-57-285. Reference P&ID M-57, Sheet 5.
- Hardened Containment Vent line HBB-272, between and including valves HV-57V-280 and HV-57V-281. Reference P&ID M-57, Sheet 9.

See Enclosure 1 for M-57 Sheets 1, 2, 4, and 5, and M-55 Sheet 1.

See Enclosure 2 for M-57 Sheet 4 (revised) and Sheet 9 in support of Revision 1 of this Relief Request.

2. Applicable Code Edition and Addenda

The Inservice Inspection program is based on the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel (B&PV) Code, Section XI, 2007 Edition through the 2008 Addenda.

3. Applicable Code Requirement

Table IWC-2500-1, Examination Category C-H, Item Number C7.10, requires all Class 2 pressure retaining components be subject to a system leakage test with a VT-2 visual examination in accordance with IWC-5220. This pressure test is to be conducted once each inspection period.

4. Reason for Request

Pursuant to 10CFR50.55a(z)(1), relief is requested on the basis that the proposed alternative will provide an acceptable level of quality and safety.

During normal plant operation, this piping is either isolated or less than one (1) psig (normal containment pressure). The pressurizing fluid is essentially nitrogen gas. A VT-2 visual examination looking for a nitrogen gas leak with less than one (1) psig driving pressure would be inconclusive.

10CFR50 Appendix J, Option B, Local Leak Rate Testing (LLRTs) is currently performed once per Refuel Outage. During LLRTs, the subject piping is pressurized to 44 psig, a substantially higher pressure than that developed during a periodic system functional test. As such, the LLRT offers the following advantages over system pressure tests:

- A. LLRTs have the ability to quantify leakage that is not feasible with a VT-2 visual examination on this essentially gas-filled piping.
- B. LLRTs conservatively include through valve leakage that would not be identified in a VT-2 visual examination.

IWC-5210(b)(2) allows for gas tests which permit location and detection of through-wall leakage. In the event the LLRT fails to meet its acceptance criteria, further testing would be performed to determine the location of the leaks, appropriate corrective maintenance and an appropriate retest would be performed.

10 CFR 50.55a Relief Request I4R-08

Revision 1

(Page 4 of 11)

5. Proposed Alternative and Basis for Use

10CFR50 Appendix J, Option B, Local Leak Rate Testing (LLRT) will be utilized to meet the ASME Section XI IWC-5000 pressure testing requirements, and will be maintained and controlled independent of the ASME Section XI program.

6. Duration of Proposed Alternative

Relief is requested for the Fourth Ten-Year ISI Interval for Limerick Generating Station Units 1 and 2.

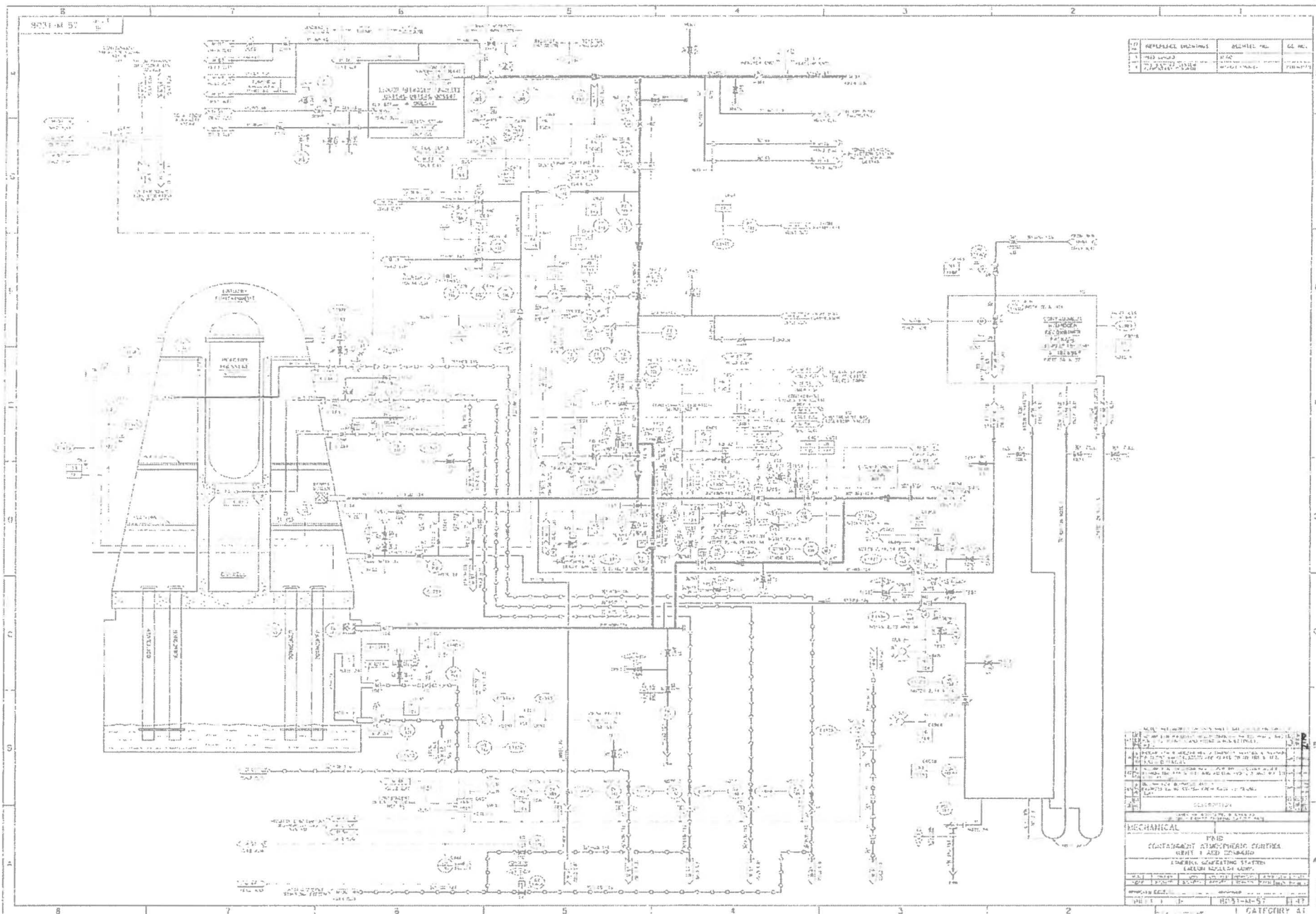
7. Precedents

Limerick Generating Station Third ISI Interval Relief Request I3R-12 was authorized by NRC Safety Evaluation (SE) dated March 11, 2008. The Fourth ISI Interval Relief Request utilizes an identical approach that was previously approved. (ML080500584)

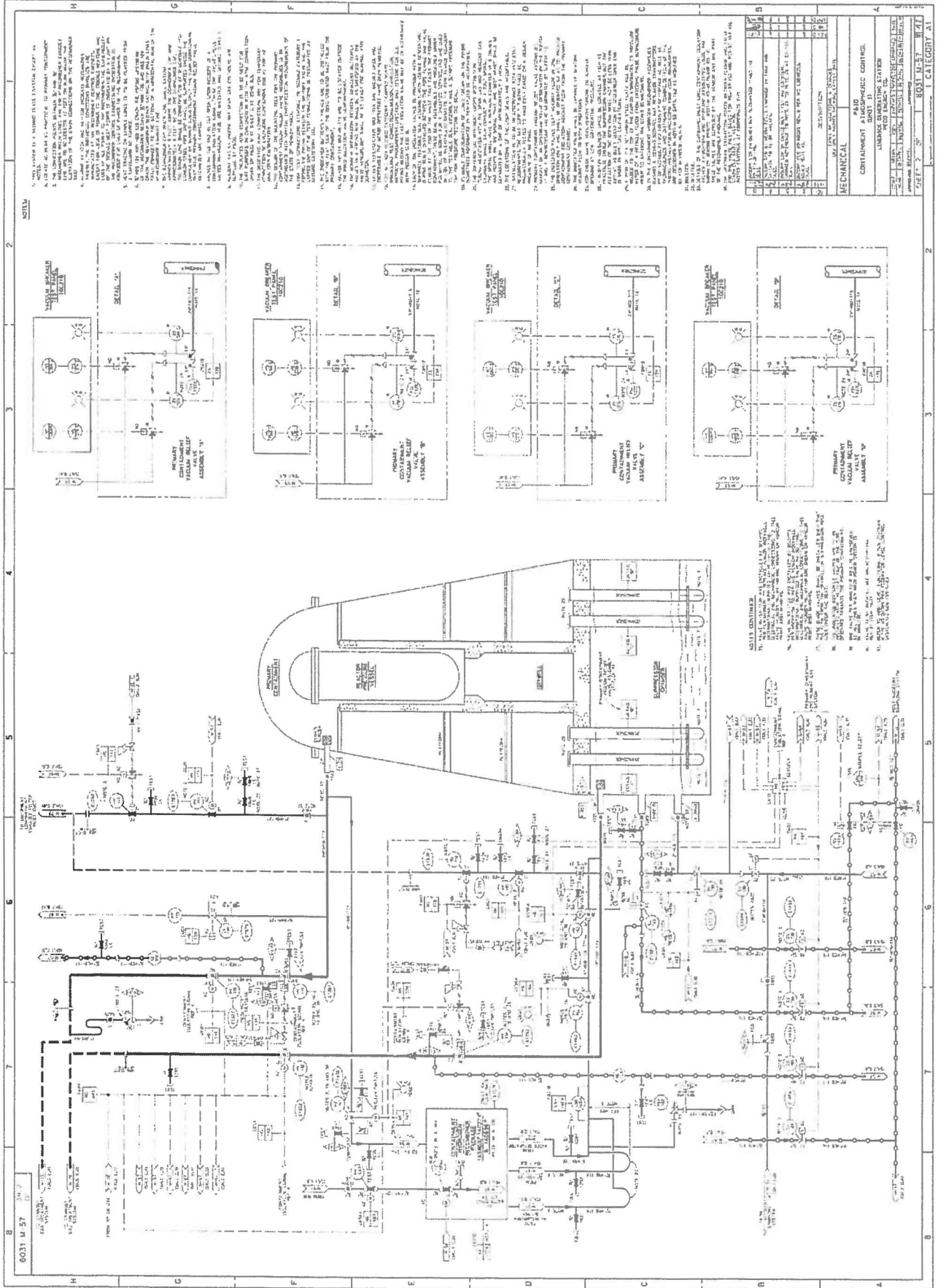
Letter from S. Koenick (U.S. Nuclear Regulatory Commission) to B. Hanson (Exelon Generation Company, LLC), "Safety Evaluation of Relief Requests I4R-05, I4R-06, I4R-07, I4R-08, I4R-09, I4R-11, I4R-12, and I4R-13, for the Fourth 10-Year Interval of the Inservice Inspection Program for Limerick Generating Station, Units 1 and 2 (CAC Nos. MF7589 and MF7590)," dated February 6, 2017

10 CFR 50.55a Relief Request I4R-08

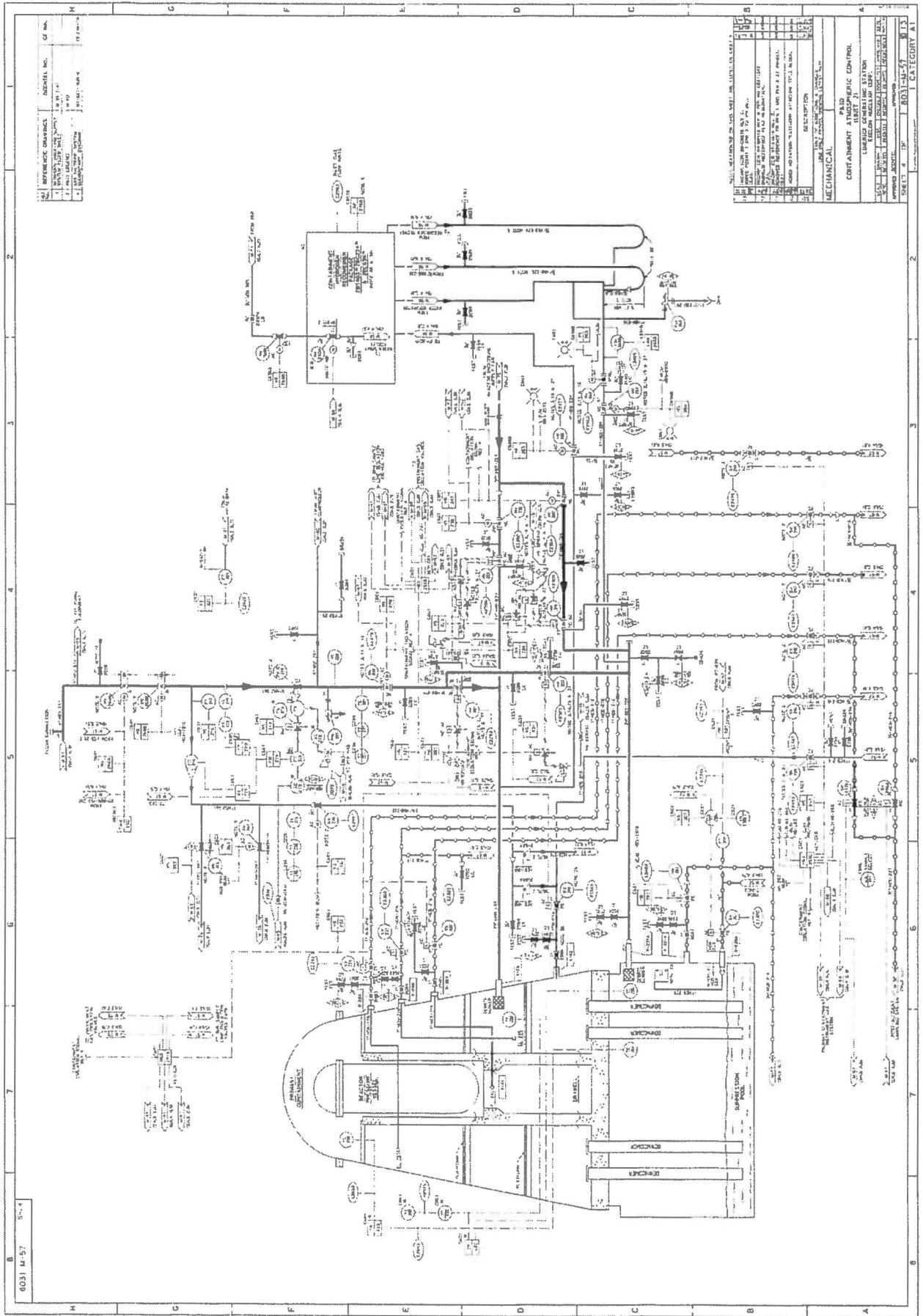
Revision 1
(Page 6 of 11)
Enclosure 1



10 CFR 50.55a Relief Request I4R-08
Revision 1
(Page 7 of 11)
Enclosure 1



10 CFR 50.55a Relief Request I4R-08
 Revision 1
 (Page 8 of 11)
 Enclosure 1

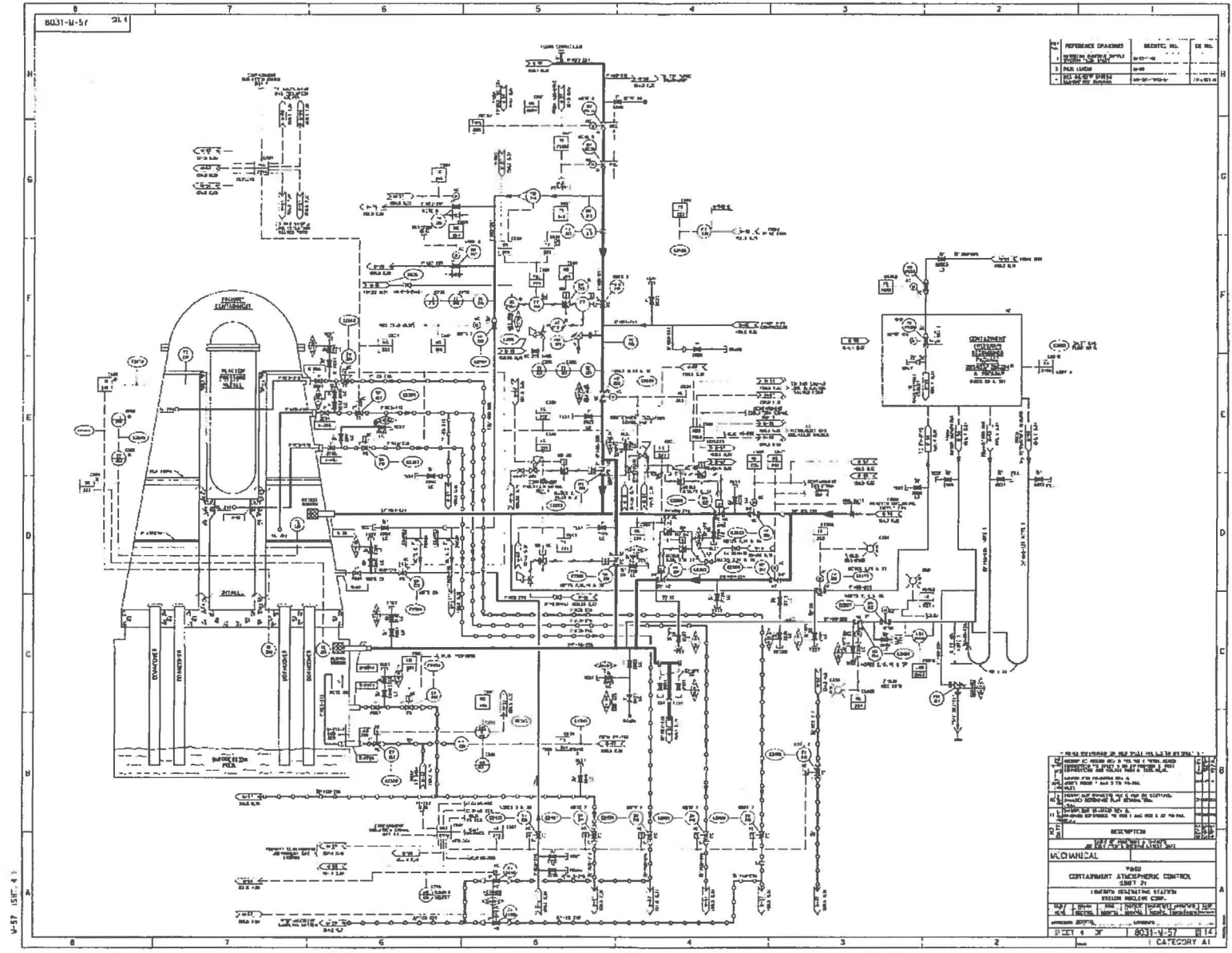


10 CFR 50.55a Relief Request I4R-08

Revision 1

(Page 10 of 11)

Enclosure 2

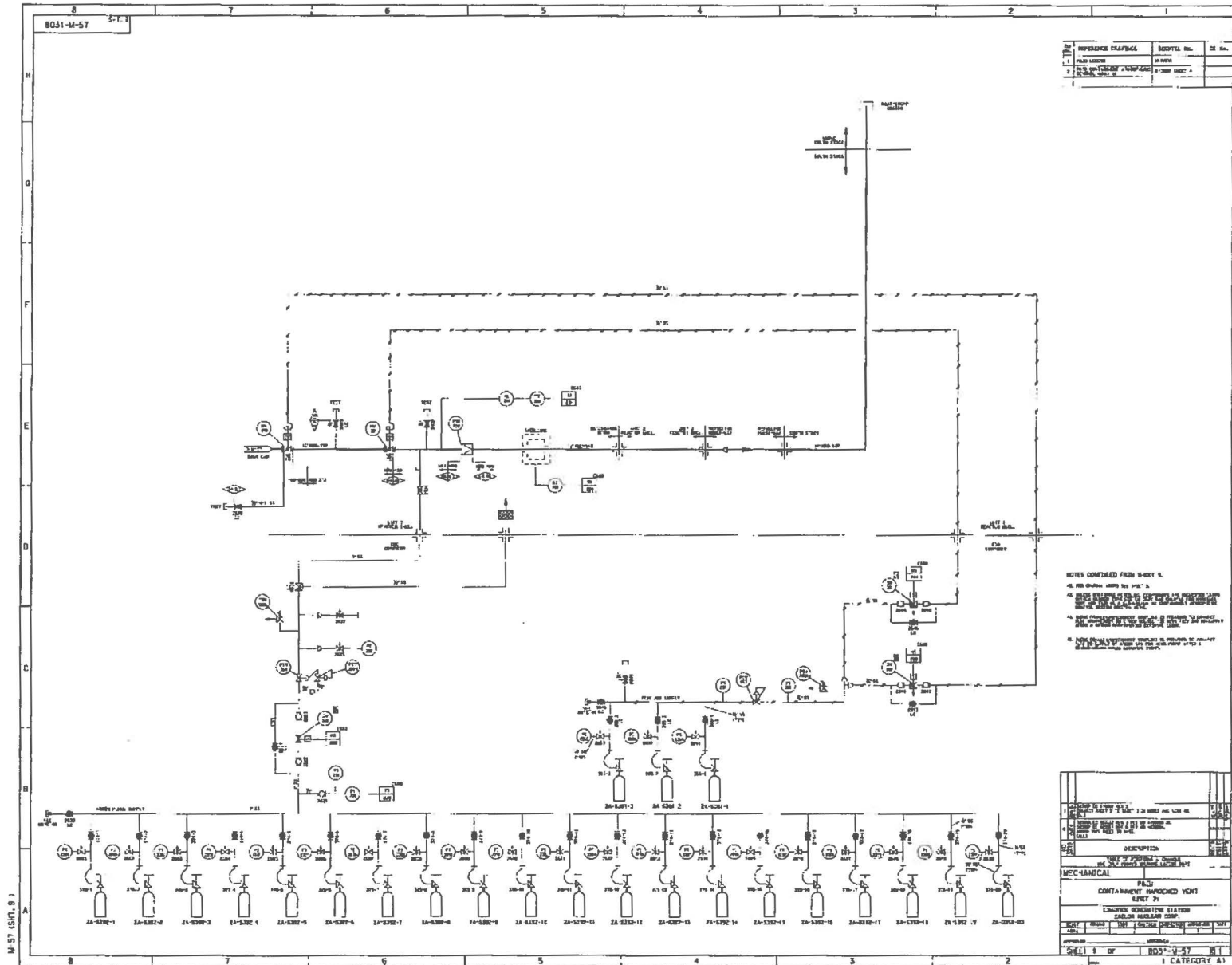


NO.	REFERENCE DRAWING	REVISION NO.	DATE
1	8031-U-57 (REV 1)	1	10/1/78
2	8031-U-57 (REV 2)	2	10/1/78
3	8031-U-57 (REV 3)	3	10/1/78

TITLE CONTAINMENT ATMOSPHERIC CONTROL SHEET 21	
REVISION REV 1	
DRAWING NUMBER 8031-U-57	
PROJECT 8031-U-57	
CATEGORY A1	

10 CFR 50.55a Relief Request I4R-08

Revision 1
(Page 11 of 11)
Enclosure 2



NO.	REFERENCE DRAWING	SCHEMATIC NO.	DATE
1	FIELD ADDRESS	10-1000	
2	FIELD INSTRUMENTATION	10-1000	
3	FIELD ADDRESS	10-1000	

- NOTES CONTINUED FROM SHEET 10-1000-1
- SEE DRAWING 10-1000-1 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-2 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-3 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-4 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-5 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-6 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-7 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-8 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-9 FOR PACK DUCT AND SHUTDOWN VENT
 - SEE DRAWING 10-1000-10 FOR PACK DUCT AND SHUTDOWN VENT

NO.	DESCRIPTION	DATE
1	ISSUED FOR CONSTRUCTION	10-10-10
2	ISSUED FOR CONSTRUCTION	10-10-10
3	ISSUED FOR CONSTRUCTION	10-10-10
4	ISSUED FOR CONSTRUCTION	10-10-10
5	ISSUED FOR CONSTRUCTION	10-10-10
6	ISSUED FOR CONSTRUCTION	10-10-10
7	ISSUED FOR CONSTRUCTION	10-10-10
8	ISSUED FOR CONSTRUCTION	10-10-10
9	ISSUED FOR CONSTRUCTION	10-10-10
10	ISSUED FOR CONSTRUCTION	10-10-10
11	ISSUED FOR CONSTRUCTION	10-10-10
12	ISSUED FOR CONSTRUCTION	10-10-10
13	ISSUED FOR CONSTRUCTION	10-10-10
14	ISSUED FOR CONSTRUCTION	10-10-10
15	ISSUED FOR CONSTRUCTION	10-10-10
16	ISSUED FOR CONSTRUCTION	10-10-10
17	ISSUED FOR CONSTRUCTION	10-10-10
18	ISSUED FOR CONSTRUCTION	10-10-10
19	ISSUED FOR CONSTRUCTION	10-10-10
20	ISSUED FOR CONSTRUCTION	10-10-10
21	ISSUED FOR CONSTRUCTION	10-10-10
22	ISSUED FOR CONSTRUCTION	10-10-10
23	ISSUED FOR CONSTRUCTION	10-10-10
24	ISSUED FOR CONSTRUCTION	10-10-10
25	ISSUED FOR CONSTRUCTION	10-10-10
26	ISSUED FOR CONSTRUCTION	10-10-10
27	ISSUED FOR CONSTRUCTION	10-10-10
28	ISSUED FOR CONSTRUCTION	10-10-10
29	ISSUED FOR CONSTRUCTION	10-10-10
30	ISSUED FOR CONSTRUCTION	10-10-10
31	ISSUED FOR CONSTRUCTION	10-10-10
32	ISSUED FOR CONSTRUCTION	10-10-10
33	ISSUED FOR CONSTRUCTION	10-10-10
34	ISSUED FOR CONSTRUCTION	10-10-10
35	ISSUED FOR CONSTRUCTION	10-10-10
36	ISSUED FOR CONSTRUCTION	10-10-10
37	ISSUED FOR CONSTRUCTION	10-10-10
38	ISSUED FOR CONSTRUCTION	10-10-10
39	ISSUED FOR CONSTRUCTION	10-10-10
40	ISSUED FOR CONSTRUCTION	10-10-10
41	ISSUED FOR CONSTRUCTION	10-10-10
42	ISSUED FOR CONSTRUCTION	10-10-10
43	ISSUED FOR CONSTRUCTION	10-10-10
44	ISSUED FOR CONSTRUCTION	10-10-10
45	ISSUED FOR CONSTRUCTION	10-10-10
46	ISSUED FOR CONSTRUCTION	10-10-10
47	ISSUED FOR CONSTRUCTION	10-10-10
48	ISSUED FOR CONSTRUCTION	10-10-10
49	ISSUED FOR CONSTRUCTION	10-10-10
50	ISSUED FOR CONSTRUCTION	10-10-10
51	ISSUED FOR CONSTRUCTION	10-10-10
52	ISSUED FOR CONSTRUCTION	10-10-10
53	ISSUED FOR CONSTRUCTION	10-10-10
54	ISSUED FOR CONSTRUCTION	10-10-10
55	ISSUED FOR CONSTRUCTION	10-10-10
56	ISSUED FOR CONSTRUCTION	10-10-10
57	ISSUED FOR CONSTRUCTION	10-10-10
58	ISSUED FOR CONSTRUCTION	10-10-10
59	ISSUED FOR CONSTRUCTION	10-10-10
60	ISSUED FOR CONSTRUCTION	10-10-10