

# ACCELERATED DISTRIBUTION DEMONSTRATION SYSTEM

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ACCESSION NBR: 9012110299      DOC. DATE: 90/12/05      NOTARIZED: NO      DOCKET #  
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 TERRY, C.D.      Niagara Mohawk Power Corp.  
 RECIPIENT AFFILIATION  
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SUBJECT: Forwards response to NRC 900905 request for addl info re containment vent/purge isolation valves.

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December 5, 1990  
NMP1L 0551

U.S. Nuclear Regulatory Commission  
Attn: Document Control Desk  
Washington, D.C. 20555

Re: Nine Mile Point Unit 1  
Docket No. 50-220  
DPR-63  
TAC No. 61715

Gentlemen:

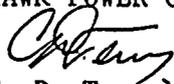
In a letter dated September 5, 1990, the Nuclear Regulatory Commission forwarded a request for additional information on the containment vent/purge isolation valves for Nine Mile Point Unit 1 (NMP1). This request addressed the resolution of Item 2 of the Staff's safety evaluation of March 19, 1984 which stated that:

- (a) A leak test should be performed to demonstrate that purge isolation valve seal material had not deteriorated; (b) the leak testing should be performed every three months or within 72 hours of each usage of the purge/vent system (for operating conditions above cold shutdown) with a maximum interval of six months between leak tests.

Our May 30, 1984 response to Item 2 indicated that the current requirements for testing vent/purge isolation valves was sufficient and provided the basis for this conclusion. The Staff's September 5, 1990 letter states that Niagara Mohawk may be able to support its position because other nuclear plant licensees have not shown inadequate performance of the resilient seal material. However, in order to close this issue for NMP1, the Staff requested additional information regarding the containment vent/purge isolation valves for, at a minimum, the time period equal to the service life of the seal material. Attachment A to this letter provides the requested information.

Very truly yours,

NIAGARA MOHAWK POWER CORPORATION

  
C. D. Terry  
Vice President  
Nuclear Engineering

AR/kms  
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Attachments

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PDR ADOCK 05000220  
P PDC

xc: Regional Administrator, Region 1  
Mr. R. A. Capra, Director  
Mr. D. S. Brinkman, Project Manager  
Mr. W. A. Cook, Senior Resident Inspector  
Records Management

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ATTACHMENT A

NIAGARA MOHAWK POWER CORPORATION  
NINE MILE POINT UNIT 1  
RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION  
CONTAINMENT VENT/PURGE ISOLATION VALVES  
MULTI-PLANT ACTION (MPA) B-24  
TAC NO. 61715

1. MAINTENANCE DATA

The vendor recommended service life of the containment vent/purge valve seal material is ten years. The maintenance data from 1979 through 1990, which covers the service life of the seal material, is provided below for the eight containment vent/purge valves .

1979

The resilient seals were replaced in 24" containment vent/purge valves 201-09 and 201-32 during April 1979 after these valves failed the local leak rate test.

1983

The resilient seals were replaced in the four 20" containment vent/purge valves (201-07, 201-08, 201-16 and 201-17) during the 1983 refueling and maintenance outage as committed to in our letters of January 29, 1982 and May 30, 1984.

The resilient seals were also replaced in the four 24" containment vent/purge valves (201-09, 201,10, 201-31 and 201-32) during the 1983 refueling and maintenance outage per the above letters. The replacement included an improved seal and disc design recommended by the valve vendor because several of the 24" valves had experienced excessive leakage during local leak rate testing conducted in 1979, 1981 and 1982.

1986

Mechanical Maintenance Procedure N1-NMP-14.1, Overhaul of Inert Gas Isolation Valves, was performed on 24" containment vent/purge valves 201-31 and 201-32 during April 1986. This procedure provided an overall cleaning and inspection of the valve internals, but did not result in any resilient seal replacement.



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Niagara Mohawk has developed Mechanical Preventative Maintenance Procedure No. N1-MPM-201-10Y218 for the eight containment vent/purge valves. This procedure provides for a complete valve refurbishment every ten years, including cleaning, inspection, and replacement of the resilient seal.

2. LEAK RATE TEST DATA (Repairs made on sealing surfaces should be included in the test data)

The ASME Section XI Leak Rate Data Sheets for the containment vent/purge isolation valves from 1979 through 1990 are enclosed as Attachment B. As noted in our letters of January 29, 1982 and May 30, 1984, the resilient seals were replaced in all of the eight containment vent/purge isolation valves during the 1983 refueling and maintenance outage. This replacement included an improved seat and disc design for the four 24" vent/purge valves. The improved design was recommended by the vendor because several of the 24" valves had experienced excessive leakage during Type C local leak rate testing conducted in 1979, 1981 and 1982.

The attached leak rate data sheets do not indicate any leak rate test failures since the seals were replaced in 1983. Consequently, no seals have been replaced in any containment vent/purge isolation valves since 1983.

3. SERVICE LIFE OF SEAL MATERIAL RELATIVE TO REPLACEMENT

Attachment 2 of our May 30, 1984 letter provided an evaluation which determined the qualification of the vent/purge valve resilient seals for the specific operating conditions at NMP1. The evaluation concluded that the resilient seals of the containment vent/purge valves are capable of resisting degradation over time such that normal valve leakage testing (every operating cycle) is sufficient to ensure containment integrity.

Given a once per operating cycle local leak rate test, the containment vent/purge valve manufacturer (Allis-Chalmers) recommended a ten year replacement program for the resilient seals. Our April 30, 1986 letter reflected this information and our intent to handle the ten year seal replacement administratively by procedure, rather than through a technical specification change. The staff's letter of May 28, 1986 agreed with our assessment of this item.



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Sheet 1 of     

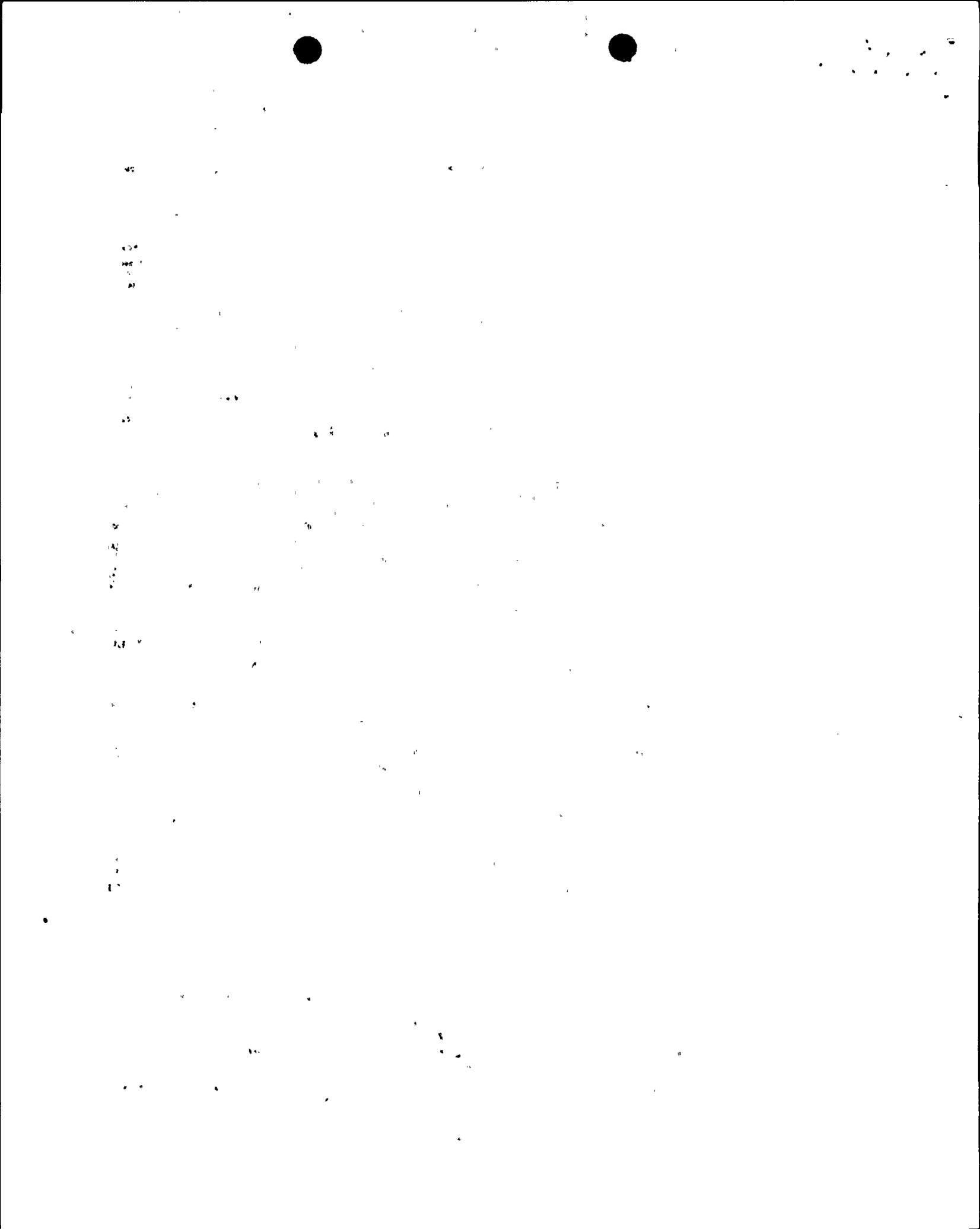
ASME SECTION XI VALVE LEAK RATE DATA SHEET

CATEGORY A

VALVE IDENTIFICATION 201-0708 SYSTEM Rx. Cont. Cooling  
Air Purge

Circle Measured Qty's Outside Acceptance Range.

Date	LRT No.	Proc. No.	Rev.	Measured Leak Rate (SCFH)	Test Press. (PSIG)	Converted Leak Rate at Req'd Press	Req'd Press (PSIG)	Leak Rate Limit	Test Medium & °F	Margin Calc. >0.5=Pass	Pass	Fail	Proj. Calc. <1.1xMR=Pass	Pass	Fail	IST Analyst Sign.	Remarks (Corr. Action)
4/21/79	1	N1-ISP -25.2	4	3.341	35	2.65 scfh	22	12.9	AIR	NOT REQUIRED	✓		NOT REQUIRED				
3/5/81	2	N1-ISP -25.2	5	10.522	35	8.344 scfh	22	12.9	AIR 80°	.444	✓		NOT REQUIRED				Valve cycled to remove crud & started 3/23/81
3/23/81	3	N1-ISP -25.2	5	9.9581	35	7.897 scfh	22	12.9	AIR	NOT REQUIRED	✓		NOT REQUIRED				Retest - NOT A significant improvement WRP 1339
4/2/81	4	N1-ISP -25.2	5	9.145	35	9.25 scfh	22	12.9	AIR 90°	NOT REQUIRED	✓		NOT REQUIRED				LEAKAGE STABLE FOR 3 CONSECUTIVE TESTS
12/18/82	5	N1-ISP -25.2	7	5.43	35	4.31 scfh	22	12.9	AIR 79°	1.52	✓		NOT REQUIRED				
12/1/83	6	N1-ISP -25.2	7	.1423	35.5	.112 scfh	22	12.9	AIR 76°	1.49	✓		NOT REQUIRED				
12/19/84	7	N1-ISP -25.2	8	.091	35.4	.072 scfh	22	12.9	AIR 75°	1.00	✓		NOT REQUIRED				R. A. Helton
3/27/85	8	N1-ISP -25.2	9	.1045	35.5	.0822 scfh	22	12.9	AIR 79°	1.00	✓		NOT REQUIRED				R. A. Helton
4/15/86	9	N1-ISP -25.2	9	.112	35.5	.088 scfh	22	12.9	AIR 68°	1.00	✓		.097				R. A. Helton 4/15/86
<p>IST-012</p> <p>January 1985</p> <p>Valve test results now shown on separate data sheets on sheet #2 etc</p>																	



Form IST-LRT

Sheet 1 of     

ASME SECTION XI VALVE LEAK RATE DATA SHEET

CATEGORY A

VALVE IDENTIFICATION 201-09, 10 SYSTEM Rx. CONT. Cooling  
AIR PURGE

Circle Measured Qty's Outside Acceptance Range.

Date	LRT No.	Proc. No.	REV.	Measured Leak Rate (SCFH)	Test Press. (PSIG)	Converted Leak Rate at Req'd Press (PSIG)	Req'd Press (PSIG)	Leak Rate Limit	Test Medium & °F	Margin Calc. >0.5=Pass	Pass	Fail	Proj. Calc. <1.1xMR=Pass	Pass	Fail	IST Analyst Sign.	Remarks (Corr. Action)
4/7/79	1	NI-ISP -25.2	3	68.09	35	54.0 scfh	22	12.9	AIR	NOT REQUIRED	✓		NOT REQUIRED				WR # 5659
4/26/79	2	NI-ISP -25.2	4	1.821	35	1.444 scfh	22	12.9	AIR	NOT REQUIRED	✓		NOT REQUIRED				
3/14/81	3	NI-ISP -25.2	5	.2848	22	.2848 scfh	22	12.9	AIR 80°	1.1	✓		NOT REQUIRED				
12/13/82	4	NI-ISP -25.2	7	55.8	22	55.8 scfh	22	12.9	AIR 92°	NOT REQUIRED	✓		NOT REQUIRED				WR # 19114
12/24/83	5	NI-ISP -25.2	7	1.20	35.5	.944 scfh	22	12.9	AIR 73°	NOT REQUIRED	✓		NOT REQUIRED				
3/18/84	6	NI-ISP -25.2	8	1.855	35.6	1.46 scfh	22	12.9	AIR 77°	.957	✓		NOT REQUIRED				
3/24/84	7	NI-ISP -25.2	9	2.37	35.5	1.87 scfh	22	12.9	AIR 71°	.964	✓		2.35	✓		R. Shelton	
3/15/86	8	NI-ISP -25.2	9	3.16	35.5	2.49 scfh	22	12.9	AIR 71°	.944	✓		2.92	✓		R. Shelton	TEST PRIOR TO MAINT. WR 32598 - CLEAN PROCS
3/25/86	9	NI-ISP -25.2	9	3.31	35.5	2.60 scfh	22	12.9	AIR 71°	.934	✓		2.98	✓		R. Shelton	TEST AFTER MAINT. WR 32598 - CLEAN PROCS
<p>January 1985</p> <p>VALVE TEST RESULTS NOW SHOWN ON SEPERATE DATA SHEETS GO TO SHEET #2</p>																	



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Sheet 1 of     

ASME SECTION XI VALVE LEAK RATE DATA SHEET

CATEGORY A

VALVE IDENTIFICATION 201-16,17 SYSTEM Rx. Cont. Cooling  
Air Purge    Circle Measured Qty's Outside Acceptance Range.

Date	LRT No.	Proc. No.	Rev.	Measured Leak Rate (SCFH)	Test Press. (PSIG)	Converted: Leak Rate at Req'd Press (PSIG)	Req'd Press (PSIG)	Leak Rate Limit	Test Medium & °F	Margin Calc. >0.5=Pass	Pass/Fail	Proj. Calc. <1.1xMR=Pass	Pass/Fail	IST Analyst Sign.	Remarks (Corr. Action)
4/17/79	1	NI-ISP -25.2	4	1569	35	1244 scfh	22	12.9	AIR	NOT REQUIRED	✓	NOT REQUIRED			
3/14/81	2	ISP -25.2	5	1.24	35	.985 scfh	22	12.9	AIR 80°	.933	✓	NOT REQUIRED			
12/9/82	3	NI-ISP -25.2	7	.638	35	.506 scfh	22	12.9	AIR 75°	1.04	✓	NOT REQUIRED			
4/19/83	4	NI-ISP -25.2	7	0	35	0	22	12.9	AIR 75°	1.04	✓	NOT REQUIRED			
12/18/84	5	NI-ISP -25.2	8	.545	35.5	.429 scfh	22	12.9	AIR 77°	.967	✓	NOT REQUIRED			
5/21/84	6	NI-ISP -25.2	9	4.27	35.5	3.36 scfh	22	12.9	AIR 73°	.765	✓	8.5			R. Heltz
12-13-85	7	NI-ISP -25.2	9	1.24	35.5	.976 scfh	22	12.9	AIR 72°	1.25	✓	NOT REQ'D			R. Heltz BEFORE MAINT. (17) 4/15/86 NR 32597 48/86
4/9/86	8	NI-ISP -25.2	10	1.28	35.5	1.01 scfh	22	12.9	AIR 71°	1.25	✓	NOT REQ'D			R. Heltz AFTER MAINT 5/30/86
January 1985	Valve test results now shown on separate data sheets go to sheet #2														



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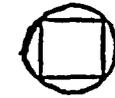
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Sheet 1 of     

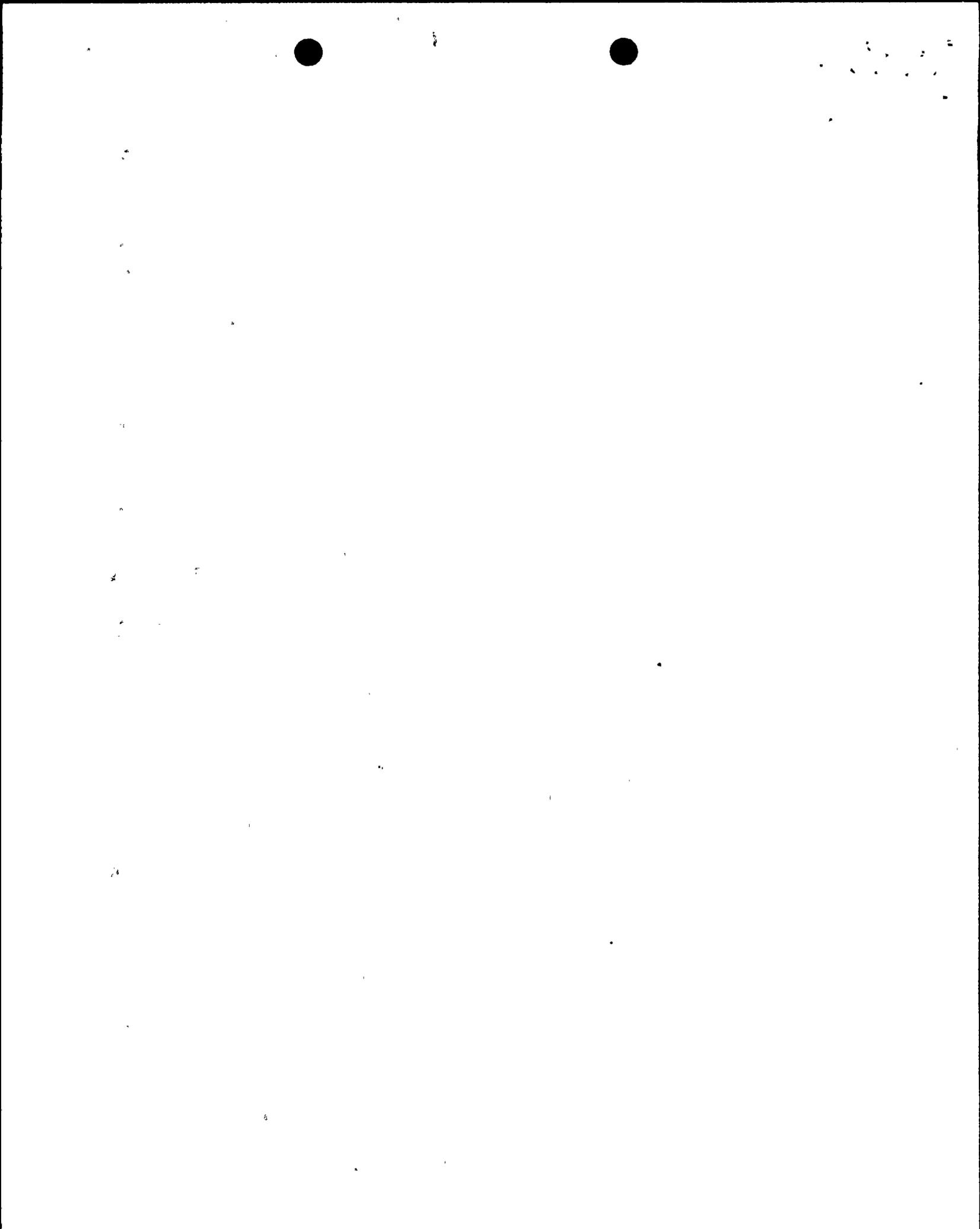
ASME SECTION XI VALVE LEAK RATE DATA SHEET

CATEGORY A

VALVE IDENTIFICATION 201-31.32 SYSTEM Rx CONT. Cooling  
AIR PURGE

 Circle Measured Qty's Outside Acceptance Range.

Date	LRT No.	Proc. No.	Rev.	Measured Leak Rate (SCFH)	Test Press. (PSIG)	Converted Leak Rate at Req'd Press (SCFH)	Req'd Press (PSIG)	Leak Rate Limit	Test Medium & °F	Margin Calc. >0.5=Pass	Pass	Fail	Proj. Calc. <1.1xMR=Pass	Pass	Fail	IST Analyst Sign.	Remarks (Corr. Acti)
3/17/79	1	NI-ISP -25.2	3	42.155	35	33.43 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				WR# 5751
4/1/79	2	NI-ISP -25.2	4	.0214	35	.017 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				
5/15/81	3	NI-ISP -25.2	6	42.40	35	33.62 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				WR# 16419
5/25/81	4	NI-ISP -25.2	6	.0265	35	.021 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				
12/7/82	5	NI-ISP -25.2	7	104.4	35	82.8 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				WR# 19115
10/4/83	6	NI-ISP -25.2	7	1.62	35.4	1.28 scfh	22	12.9	AIR	NOT REQUIRED	✓	✓	NOT REQUIRED				
3/27/84	7	NI-ISP -25.2	9	5.1	35.5	4.01 scfh	22	12.9	AIR 75°	.765	✓	✓	NOT REQUIRED				
3/27/85	8	NI-ISP -25.2	9	3.46	35.5	2.72 scfh	22	12.9	AIR 82.67°	1.15	✓	✓	NOT REQUIRED				
3/31/86	9	NI-ISP -25.2	9	11.84	35.5	9.32 scfh	22	12.9	AIR 75°	.352	✓	✓	NOT REQUIRED			R. Shultz 4/14/86	FAILED MAINT WR# 013254 WR 11306
4/9/86	10	NI-ISP -25.2	10	.061	35.5	.048 scfh	22	12.9	AIR 74°	NOT APPLICABLE	✓	✓	NOT REQUIRED			R. Shultz 5/30/86	WR 132614/19/8 WR 136 4/17/86 (11915) WR 14169 (32)4. WR 14179 (31)6/12/86 AUX CORRECT
Value test results now shown on sheet 2 separate data sheets. Goto sheet # 2																	







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**IST VALVE LEAKAGE RATE DATA SHEET - UNIT 1**

SHEET 1 OF    

SYSTEM: REACTOR CONT

TEST PROCEDURE NO.: N4ISPR-201525

COMPONENT: 201-07

TYPE TEST: APP. J: LJ-R

PIV: N/A

ASME XI: N/A

TEST MEDIUM AIR: X

WATER: N/A

ALLOWABLE LEAKAGE RATE: 12.9 SCFH @ FUNC MAX PRESSURE 22 PSIG

RDS NO.: 1

TEST DATE	PROC. REV NO.	-----TEST RESULTS-----				MARGIN CALC	PROJ CALC	IST ANALYST SIGN/DATE	REMARKS
		PASS	FAIL	AS FOUND SCFH	AS LEFT SCFH				
4-26-89	0	X	N/A	.1077	.1077	N/A	N/A	1-31-90 J. Kohn 3/15/90	
4-23-90	0	X	N/A	.092	.092	N/A	N/A	4-23-90 J. Kohn 4/25/90	



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# IST VALVE LEAKAGE RATE DATA SHEET - UNIT 1

SHEET 1 OF    

SYSTEM: REACTOR CONT

TEST PROCEDURE NO.: NIISPR-201-525

COMPONENT: 201-17

TYPE TEST: APP. J: LJ-R

PIV: N/A

ASME XI: N/A

TEST MEDIUM AIR: X

WATER: N/A

ALLOWABLE LEAKAGE RATE: 12.9 SCFH @ FUNC MAX PRESSURE 22 PSIG

RDS NO.: 1

TEST DATE	PROC. REV. NO.	-----TEST RESULTS-----				MARGIN CALC	PROJ CALC	IST ANALYST SIGN/DATE	REMARKS
		PASS	FAIL	AS FOUND	AS LEFT				
4-27-89	0	X	N/A	.8218	.8218	N/A	N/A	1-31-90 rev Herold Kohn 3/15/90	
4-23-90	0	X	N/A	.136	.36	N/A	N/A	4-28-90 rev J. Kohn 4/25/90	



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