

Detroit
Edison

Wayne H. Jens
Vice President
Nuclear Operations

Fermi-2
6400 North Dixie Highway
Newport, Michigan 48166
(313) 586-4150



Nuclear
Operations

September 20, 1985
RC-LG-85-0004

Mr. B. J. Youngblood
Director of Nuclear Reactor Regulation
Licensing Branch No. 1
Division of Licensing
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Youngblood:

- References: (1) Fermi 2
NRC Docket No. 50-341
NRC Operating License No. NPF-43
- (2) Detroit Edison letter to NRC "Inservice Testing of Pumps and Valves", EF2-65368, dated October 4, 1983
- (3) Detroit Edison letter to NRC, "Inservice Testing of Pumps and Valves", EF2-72769, dated September 5, 1984
- (4) Detroit Edison letter to NRC, "Inservice Testing Program Clarification", EF2-72004, dated November 21, 1984

Subject: Revisions to Inservice Testing Program for
Pumps and Valves

Revisions to the Fermi 2 Inservice Testing Program for pumps and valves are provided in Attachments 1 and 2 in accordance with 50.55a(g)(5)(iii). These revisions are to be incorporated into Revision 2 of the IST Program (Reference 2) and complement similar program revisions previously submitted via References 3 and 4. The enclosed Program revisions are being implemented to support the Fermi 2 startup program.

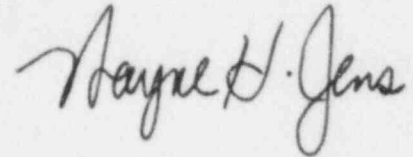
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Please direct any questions to Mr. R. L. Woolley at (313)
586-4211.

Sincerely,

A handwritten signature in cursive script, appearing to read "Margaret H. Jens".

cc: (all with attachment)
Mr. P. M. Byron
Mr. S. G. DuPont
Mr. J. Page
Mr. M. David Lynch
Mr. G. C. Wright
USNRC Document Control Desk
Washington, D.C. 20555

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bcc: F. E. Agosti
L. P. Bregni
W. F. Colbert
J. E. Conen*
O. K. Earle
J. H. Flynn
E. P. Griffing
W. R. Holland
W. H. Jens
R. S. Lenart*
S. H. Noetzel
G. R. Overbeck
A. Papadopoulos
T. D. Phillips
T. Randazzo
B. J. Sheffel*
L. J. Simpkin
G. M. Trahey
A. E. Wegele
R. L. Woolley

Approval Control*
R. L. Woolley (Bethesda Office)
Secretary's Office (2412 WCB)
NRR Chron File
NOC Satellite Service Center
Licensing File - ISI Pump and Valve*

*with attachment

ATTACHMENT 1: SUMMARY OF PROPOSED
PROGRAM CHANGES

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SUMMARY OF PROPOSED CHANGES

1. Deletion of Valves Ell-F073 and Ell-F078

Valve Ell-F073 is a Category B valve which is normally closed/key-locked closed on the cross-tie line between the RHR Service Water System and the RHR System. Ell-F073 is not required to change position to accomplish its safety function. Therefore, Ell-F073 is a passive valve. According to ASME Section XI, Table IWV-3700-1, no testing is required for Category B passive valves. Therefore, Ell-F073 has been deleted from the IST Program.

Valve Ell-F078 was originally in the IST boundary for the RHR System and had a safety function to close. The ISI boundary has been extended to Ell-F075. Consequently, Ell-F078 no longer has a safety function and does not require testing and has been deleted from the IST Program. Valve Ell-F075 is a Category B, passive valve (similar to Ell-F073) and does not require testing according to Table IWV-3700-1.

2. Core Spray Two Pump Testing

Relief Request PR-6 is being submitted to allow two pump testing in each Core Spray division in lieu of single pump testing. PR-6 is provided in Attachment 2.

3. RHR Service Water Two Pump Testing

Relief Request PR-7 is being submitted to allow two pump testing in each RHR Service Water Division in lieu of single pump testing. PR-7 is provided in Attachment 2.

4. Core Spray Minimum Flow Check Valves

Relief Request VR-45 is being submitted to allow the disassembly of a typical core spray minimum flow check valve in lieu of exercise tests. VR-45 is provided in Attachment 2.

5. RHR Pumps

During preoperational testing, the vibration velocity measurements for the RHR pumps were high relative to the vibration velocity acceptance ranges provided in Relief Request PR-1, with three of the four pumps falling into the alert range. Relief Request PR-8 provides the justification for departing from the current acceptance criteria, provided in Relief Request PR-1, for the RHR pumps. Relief Request PR-8 further provides the proposed acceptance criteria to be used.

6. NRC Open Item 341/84-46-02

NRC Open Item 341/84-46-02 is identified in NRC Inspection Report 50-341/84-46 and states that Detroit Edison will comply with Section XI, Sub-articles IWV-3426 and 3427. In response to this open item, Relief Request VR-11, VR-24, VR-27 and VR-31 will be deleted and maximum allowed leakages assigned to individual valves.

There are cases where Category A valves cannot be individually tested. These cases are addressed in Items 7, 8, 10 and 11.

7. Air Leakage Test For Category A Valves

Relief Request VR-46 is being submitted to allow air leakage testing of containment isolation valve groups instead of testing individual valves. VR-46 is provided in Attachment 2.

8. Water Leakage Tests For Category A Valves

Relief Request VR-47 is being submitted to allow water testing of containment isolation valve groups instead of testing valves individually. VR-47 is provided in Attachment 2.

9. Emergency Equipment Cooling Water Check Valves

Relief Request VR-48 is being submitted to allow the disassembly of a typical Emergency Equipment Cooling Water back flow check valve in lieu of exercise tests. VR-48 is provided in Attachment 2.

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10. High Pressure Leakage Tests For Category A - PLVs

Relief Request VR-49 is being submitted to allow high pressure leakage testing of pressure isolation valves Ell-F009 and Ell-F608 together instead of separately. VR-49 is provided in Attachment 2.

11. Bypass Leakage Valves

Relief Request VR-50 is being submitted to allow air leakage testing of bypass leakage valve groups instead of testing individual valves. VR-50 is provided in Attachment 2.

12. Solenoid Valve Operation

Relief Request VR-51 is being submitted to revise the manner and frequency of verifying solenoid valve operation in the diesel generator system. VR-51 is provided in Attachment 2.

13. Excess Flow Check Valves

Currently, excess flow check valves are classified as Category A valves subject to an AT-3 test. The description of the AT-3 test states that the excess flow check valves will be tested in accordance with Technical Specification paragraph 4.6.3.4. Paragraph 4.6.3.4 requires an operability test and identifies no leakage requirements. Because there are no leakage requirements for excess flow check valves, Detroit Edison proposes changing the Category from A to C.

ATTACHMENT 2: PROPOSED RELIEF REQUESTS

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Relief Request No. PR-6

PUMP(s): Core Spray

PUMP NO. (s): E2101C001A, E2101C001B, E2101C001C,
E2101C001D

CLASS: 2

FUNCTION: Provide emergency core cooling

SECTION XI

REQUIREMENTS: Articles IWP-1500 and IWP-3000 indicate that a set of basic reference parameters must be established for each pump.

BASIS FOR RELIEF: Each core spray division is designed to have two pumps operating in parallel in accordance with Technical Specification Paragraph 3.5.1.a. If one pump is determined to be inoperable, then the division is declared inoperable. Due to this two pump design, the system configuration does not allow for single pump testing. The throttle valves (E21-F015A and B) on the test lines for each core spray division tend to close due to reduced flow during one pump operation. Consequently, both pumps in each division must be running during performance operability testing.

Detroit Edison proposes measuring flow rate and differential pressure while both pumps in each division are operating. Also, acceptance criteria have been developed which are more restrictive for flow rate and differential pressure than the criteria given in Table IWP-3100-2. The reduced ranges compensate for the loss in sensitivity from the single pump test to the two pumps in parallel test.

The reduced ranges are based on an evaluation of each pump curve. Curve 1 in Figure PR-6 represents the pump curve (differential pressure, P, versus flow rate, Q) for a normally operating pump. Curve 2 represents the performance of a similar pump but at a degraded state (0.9 P versus Q). For a given differential pressure, the flow rate from Curve 1 was added to the corresponding flow rate from Curve 2. This summation produces Curve 3 which reflects the parallel operation of two pumps, one operating normally (Curve 1) and one operating in a degraded state (Curve 2). Comparing Curve 3 to Curve 4, which reflects two normally operating pumps, a new acceptance criteria is

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Relief Request No. PR-6 Cont.

determined. Because of instrument error limitations, the upper alert and required action ranges given in Table IWP 3100-2 will be retained.

ALTERNATE TESTING: Flow rate will be set to a reference value and differential pressure will be measured while both pumps in each division are operating. The following acceptance criteria will be applied:

<u>Acceptable Range</u>	<u>Alert Range</u>		<u>Required Action Range</u>	
	Low Values	High Values	Low Values	High Values
0.96 to 1.02 Pr	0.94 to 0.96 Pr	1.02 to 1.03 Pr	0.94 Pr	1.03 Pr

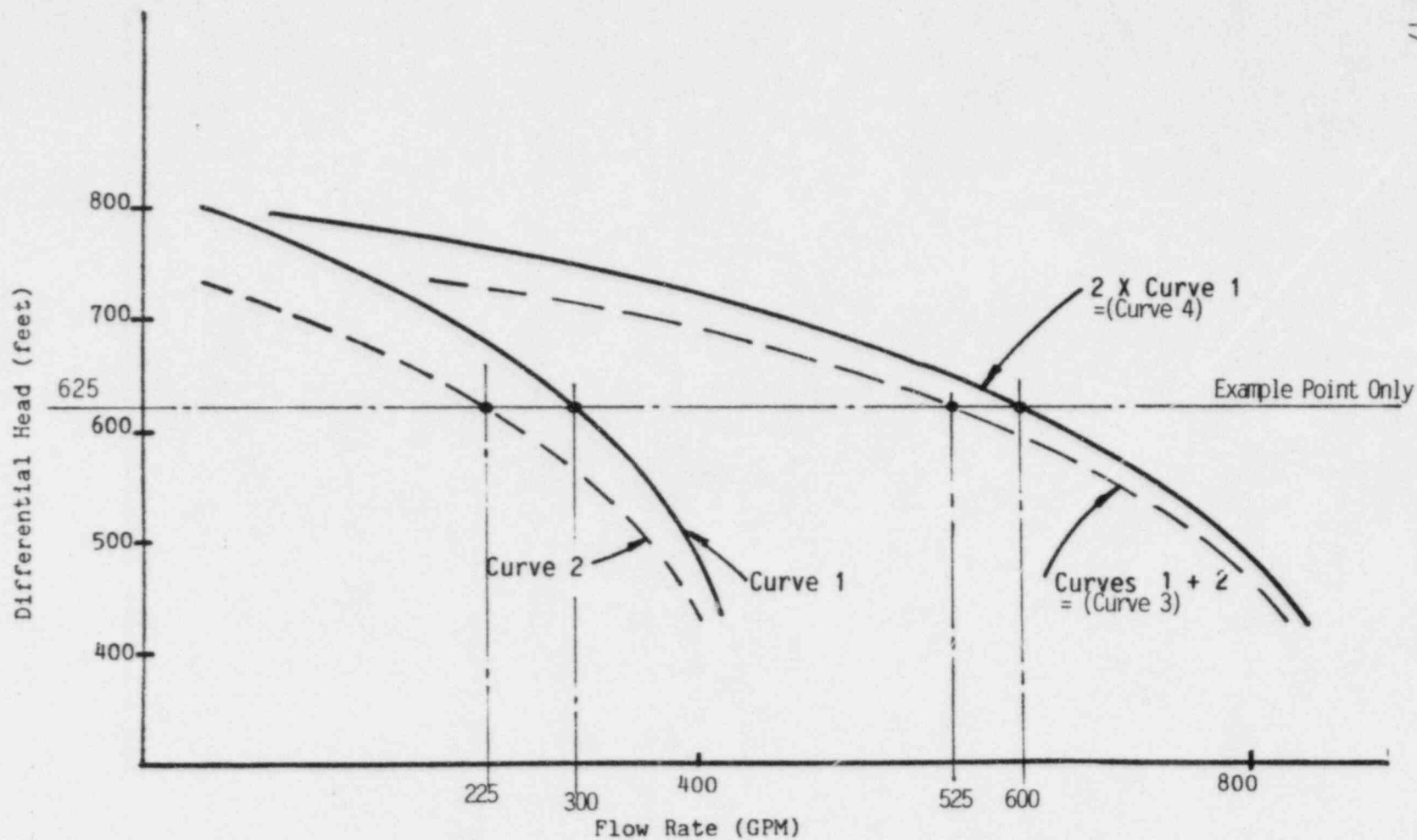


Figure PR-6 Two Pump Acceptance Criteria

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Relief Request No. PR-7

PUMP(s): RHR Service Water

PUMP NO. (s): E1151C001A, E1151C001B, E1151C001C,
E1151C001D

CLASS: 3

FUNCTION: Provide cooling water to the RHR heat exchangers.

SECTION XI REQUIREMENTS: Articles IWP-1500 and IWP-3000 indicate that a set of basic reference parameters must be established for each pump.

BASIS FOR RELIEF: Each RHR service water division is required to have two pumps operating in parallel in accordance with Technical Specification Paragraph 3.7.1.1. If one pump is determined to be inoperable, then the division is declared inoperable. Due to this two pump design, the system configuration does not allow for single pump testing. The throttle valves (E11-F068A and B) are sized for two pump operation with flows greater than 9000 GPM. During single pump operation, the pumps experience runout at approximately 6000 GPM. To keep flow in the stable range (approximately 5000 GPM) the valves must throttle from 3 to 8 percent open. This reduced flow causes valve vibration and control instabilities. Consequently, both pumps in each division must be running during performance operability testing.

Detroit Edison proposes measuring flow rate and differential pressure while both pumps in each division are operating. The acceptance criteria described in Relief Request PR-6 will be applied to the RHR service water pumps.

ALTERNATE TESTING: Flow rate will be set to a reference value and differential pressure will be measured while both pumps in each division are operating. The following acceptance criteria will be applied:

Acceptable Range	<u>Alert Range</u>		<u>Required Action</u>	
	Low Values	High Values	Low Values	High Values
0.96 to 1.02 Pr	0.94 to 0.96 Pr	1.02 to 1.03 Pr	0.94 Pr	1.03 Pr

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Relief Request No. PR-8

PUMP: RHR Pumps

PUMP NO.: E1102C002A, E1102C002B, E1102C002C, and
E1102C002D

CLASS: 2

FUNCTION: Provide low pressure coolant injection

SECTION XI REQUIREMENTS: Vibration amplitude displacement shall be measured quarterly during inservice testing (Table IWP-3100-1 and IWP-3400 (a)).

BASIS FOR RELIEF: During preoperational testing, the vibration velocity measurements for the RHR pumps were high (.19 to .27 ips) relative to the vibration velocity ranges given in Relief Request PR-1. Three of the four pumps fell into the alert range.

The preoperational vibration velocity measurements were part of a series of vibration tests which included vibration amplitude. The results of the tests indicate that the pumps are operating acceptably at the higher vibration velocities. Consequently, a new set of vibration velocity ranges were developed with the assistance of the vendor which recommended the measurement of overall velocity (filter out), overall amplitude (filter out) and running speed amplitude (filter in). All three quantities will be measured at the pump bearing and compared to the ranges given below.

ALTERNATE TESTING: Pump vibration overall velocity, overall amplitude and running speed amplitude measurements will be taken. The evaluation of the readings will be as follows:

RELIEF REQUEST PR-8 CONT'D.

Overall Velocity

Acceptable Range: less than 2.0 Vr

Alert Range: greater than or equal to 2.0 Vr
and less than or equal to 4.0 Vr

Required Action Range: greater than 4.0 Vr

Where Vr = reference vibration velocity in/sec.
Also, no vibration velocity can exceed a value
of 1.0 in/sec.

Overall Amplitude

The ranges given in Table IWP-3100-2 will be
applied.

Running Speed Amplitude

The ranges given in Table IWP-3100-2 will be
applied.

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Relief Request No. VR-45

SYSTEM: Core Spray

COMPONENT: E21-F038A (V8-2044) E21-F038C (V8-2045)
E21-F038B (V8-2041) E21-F038D (V8-2040)

CATEGORY: C

FUNCTION: These valves are designed to close to prevent backflow through core spray pumps that fail to start, thus preventing loss of core spray inventory. The valves must also open during pump startup to meet minimum flow requirements of the pumps.

TEST REQUIREMENTS: Exercise check valve every three months (CT-1).

BASIS FOR RELIEF: As described in Relief Request PR-6, both core spray pumps in each division must be operating during surveillance testing. Therefore, detection of flow through the minimum flow line will only show that one out of two valves is open. Also, the ability to verify that the check valves close upon reversal of flow is lost during two pump testing.

In lieu of the Code required exercise test, valve operability will be demonstrated by disassembling the valve and verifying that the valve disk swings freely from and to the seat.

ALTERNATE TESTING: Valve disassembly and inspection will occur at every refueling outage until sufficient data can be accumulated to adequately monitor valve degradation. The maximum inspection intervals will be determined based on an evaluation of that data.

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Relief Request No. VR-46

SYSTEM: Systems Penetrating Primary Containment

COMPONENT: Valves subject to ASME Section XI, Category A Containment Isolation Air Leakage Tests (AT-1 and AT-9). See Table VR-46 for list of valves.

CATEGORY: A and A/C

FUNCTION: The subject valves perform a containment isolation function as defined in 10CFR50, Appendix A, Criteria 55 and 56.

TEST REQUIREMENT: Measure valve seat leakage and compare the measured leakage to a specific maximum leakage for each valve (IWV-3426).

BASIS FOR RELIEF: Due to system configuration, the valves listed in Table VR-46 cannot be individually leak tested. Table VR-46 gives the primary containment penetration corresponding to the containment isolation valves, the containment isolation valves tested together, the valve diameters and the maximum allowable leakage based on the sum of the valve diameters times a leakage of 0.173 SCFH per inch of valve diameter.

The 0.173 SCFH per diameter inch is determined by dividing 0.6 La (178 SCFH) by the sum of the air tested containment isolation valve diameters (1029 in.). Technical Specification paragraph 3.6.1.2.a defines La.

ALTERNATE TESTING: The containment isolation valves listed in Table VR-46 will be leak tested according to the valve groups given in Table VR-46. The test leakage will be compared to the maximum leakage assigned to each group. The test leakage will also be trended according to the requirements of IWV-3427.

If the test leakage exceeds the criteria given in IWV-3427, valves in the affected group will be subject to the corrective actions of IWV-3427 on a valve by valve basis. The valve most likely to be the leaker will be repaired first and the group retested. If the test leakage is within the criteria, no further testing will be performed.

Table VR-46

Maximum Leakage Rates
for CIV Groups

<u>Penetration Number</u>	<u>Valve Number</u>	<u>Valve Size (IN)</u>	<u>Maximum Leakage (SCFH)</u>
X-7A	B21-F022A (V17-2003)	26	25*
	B21-F028A (V17-2007)	26	
	B21-F434 (V5-2294)	1	
X-7B	B21-F022B (V17-2001)	26	25*
	B21-F028B (V17-2005)	26	
	B21-F434 (V5-2294)	1	
X-7C	B21-F022C (V17-2002)	26	25*
	B21-F028C (V17-2006)	26	
	B21-F434 (V5-2294)	1	
X-7D	B21-F022D (V17-2004)	26	25*
	B21-F028D (V17-2008)	26	
	B21-F434 (V5-2294)	1	
X-9A	B21-F076A (V12-2002)	20	5.88
	E41-F006 (V8-2194)	14	
X-9B	B21-F076B (V12-2001)	20	5.19
	E51-F013 (V8-2228)	6	
	G33-F120 (V8-4615)	4	
X-11	E41-F003 (V17-2021)	10	1.90
	E41-F600 (V17-2088)	1	
X-12	E11-F009 (V8-2091)	20	7.05
	E11-F603 (V8-3407)	20	
	E11-F408 (V8-3874)	0.75	
X-13A	E11-F050B (V8-2164)	24	4.33
	E11-F610B (V13-7688)	1	
X-13B	E22-F050A (V8-2163)	24	4.33
	E11-F610A (V13-7687)	1	
X-15	T48-F603A (V4-2144)	4	1.38
	T48-F605A (V4-2154)	4	
X-22	T49-F601 (V4-2080)	1.5	0.78
	T49-F465 (V4-2079)	1.5	
	T49-F007 (V4-2172)	1.5	

*All four main steam lines shall have a total leakage less than 100 SCFH when tested at 25.0 PSIG. Per Technical Specification 3.6.1.2.c.

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Table VR-46 (Continued)

Maximum Leakage Rates
for CIV Groups

<u>Penetration Number</u>	<u>Valve Number</u>	<u>Valve Size (IN)</u>	<u>Maximum Leakage (SCFH)</u>
X-25	T46-F602 (VR3-3024)	24	9.34
	T46-F402 (VR3-3023)	24	
	T46-F411 (VR3-3026)	6	
X-26	T48-F601 (VR3-3011)	24	10.03
	T48-F407 (VR3-3012)	24	
	T48-F408 (V4-2060)	10	
X-27a	T50-F401B (V5-2159)	1	0.86
X-27c	T50-F403B (V5-2161)	1	
X-27d	T50-F404B (V5-2162)	1	
X-27e	T50-F405B (V5-2163)	1	
X-27f	T50-F406B (V5-2164)	1	
X-27b	T50-F402B (V5-2160)	1	0.30
	P34-F404A (V13-7374)	0.75	
X-27b	T50-F402B (V5-2160)	1	0.30
	P34-F403A (V13-7364)	0.75	
X-31B	T48-F453 (VR3-2823)	1	0.52
	T48-F454 (VR3-2824)	1	
	T48-F455 (VR3-2824)	1	
X-35	T49-F602 (V4-2188)	1.5	0.78
	T49-F468 (V4-2187)	1.5	
	T49-F016 (V8-4140)	1.5	
X-37	C11-F010 (V8-2073)	1	0.52
X-38	C11-F011 (V8-2086)	2	
X-37	C11-F180 (V8-3876)	1	0.52
X-38	C11-F181 (V8-3877)	2	
X-44	T48-F603B (V4-2143)	4	1.38
	T48-F605B (V4-2153)	4	
X-48a	T50-F401A (V5-2151)	1	0.85
X-48b	T50-F402A (V5-2152)	1	
X-48c	T50-F403A (V5-2153)	1	
X-48d	T50-F404A (V5-2154)	1	
X-48e	T50-F405A (V5-2155)	1	

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Table VR-46 (Concluded)

Maximum Leakage Rates
for CIV Groups

<u>Penetration Number</u>	<u>Valve Number</u>	<u>Valve Size (IN)</u>	<u>Maximum Leakage (SCFH)</u>
X-48f	T50-F406A (V5-2156)	1	0.30
	P34-F403B (V13-7365)	.75	
X-48f	T50-F406A (V5-2156)	1	0.30
	P34-F404B (V13-7375)	.75	
X-205A	T23-F450B (V21-2014)	20	6.92
	T23-F410 (V21-2016)	20	
X-205B	T23-F450A (V21-2013)	20	6.92
	T23-F409 (V21-2015)	20	
X-205C	T48-F404 (VR3-3013)	20	7.96
	T48-F405 (VR3-3014)	20	
	T48-F409 (V4-2061)	6	
X-205D	T46-F400 (VR3-3015)	20	9.00
	T46-F401 (VR3-3016)	20	
	T46-F412 (VR3-3019)	6	
	T48-F410 (V4-2063)	6	
X-205D	T48-F456 (VR3-2826)	1	0.51
	T48-F457 (VR3-2827)	1	
	T48-F458 (VR3-2828)	1	
X-211A	E11-F024B (V8-2136)	18	7.26
	E11-F027B (V8-2158)	6	
	E11-F028B (V8-2156)	18	
X-211B	E11-F024A (V8-2135)	18	7.26
	E11-F027A (V8-2157)	6	
	E11-F028A (V8-2155)	18	
X-215	T48-F602A (V4-2142)	4	1.38
	T48-F606A (V4-2156)	4	
X-218	T48-F601A (V4-2140)	8	2.77
	T48-F604A (V4-2148)	8	
X-218	T48-F601B (V4-2139)	8	2.77
	T48-F604B (V4-2149)	8	
X-219	T48-F602B (V4-2141)	4	1.38
	T48-F606B (V4-2155)	4	

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Relief Request No. VR-47

SYSTEM: Systems Penetrating Primary Containment

COMPONENT: Valves subject to ASME Section XI, Category A, Containment Isolation Water Leakage Tests (AT-2). See Table VR-47 for list of valves.

CATEGORY: A

FUNCTION: The subject valves perform a containment isolation function as defined in 10 CFR 50, Appendix A, Criterion 57.

TEST REQUIREMENT: Measure valve seat leakage and compare the measured leakage to a specific maximum leakage for each valve (IWV-3426).

BASIS FOR RELIEF: Due to system configuration, the containment isolation valves (CIVs) listed in Table VR-47 cannot be individually leak tested. Table VR-47 gives the primary containment penetration corresponding to the containment isolation valves, the valve diameters and the maximum allowable leakage based on the leakage limits given in Technical Specification paragraph 3.6.1.2.e.

According to the technical specification, the leakage shall be limited to one gpm times the number of valves per penetration, not to exceed three gpm per penetration. For the penetrations in Table VR-47, the maximum penetration limit is three gpm (11355 ml/min). This limit is divided by the sum of the valve diameters for the penetration, and multiplied by the sum of the valves tested in a penetration group to produce the maximum leakage for that group.

ALTERNATE TESTING: The containment isolation valves listed in Table VR-47 will be leak tested according to the valve groups given in Table VR-47. The test leakage will be compared to the maximum leakage assigned to each group. The test leakage will also be trended according to the requirements of IWV-3427.

If the test leakage exceeds the criteria given in IWV-3427, valves in the affected group will be subject to the corrective actions of IWV-3427 on a valve by valve basis. The valve most likely to be the leaker will be repaired first and the group retested. If the test is within the criteria, no further testing will be performed.

Table VR-47

Maximum Leakage Rates
for CIV Groups

<u>Penetration Number</u>	<u>All CIVs Assigned to Penetration</u>	<u>Valve Size (IN)</u>	<u>Maximum Leakage Tested Single (ml/min)</u>	<u>Maximum Leakage Tested Together (ml/min)</u>
X-227A	E21-F032B (V22-2004)	1	379	5299 *
	E21-F031B (V8-2032)	3	1135	
	G51-F606 (V8-3850)	4	1514	
	G51-F607 (V8-3848)	4	1514	
	E41-F012 (V8-2196)	4	1514	
	E21-F011B (V22-2119)	2	}	
	E21-F012B (V22-2017)	2		
	E21-F015B (V8-2034)	10		
X-227B	E51-F019 (V8-2230)	2	1136	7948 *
	E21-F031A (V8-2031)	3	1703	
	E21-F032A (V22-2019)	1	569	
	E21-F011A (V22-2120)	2	}	
	E21-F012A (V22-2016)	2		
	E21-F015A (V8-2033)	10		

*These valves tested together.

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Relief Request No. VR-48

SYSTEM: Emergency Equipment Cooling Water

COMPONENT: P44-F051 (V8-2431) P44-F116B (V8-2332)
P44-F116A (V8-2432) P44-F165 (V8-2428)

CATEGORY: C

FUNCTION: These valves are designed to close to prevent backflow in the Emergency Equipment Cooling Water System.

TEST REQUIREMENT: Exercise check valve every three months to the open position (CT-1).

BASIS FOR RELIEF: The current system configuration does not allow for direct or indirect verification that the check valve disk moves from its seat to the open position upon initiation of flow.

In lieu of the Code required exercise test, valve operability will be demonstrated by disassembling the valve and verifying that the valve disk swings freely from and to the seat.

ALTERNATE TESTING: Valve disassembly and inspection will occur at every refueling outage until sufficient data can be accumulated to adequately monitor valve degradation. The maximum inspection intervals will be determined based on an evaluation of that data.

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Relief Request No. VR-49

SYSTEM: Residual Heat Removal System

COMPONENT: Ell-F009 (V8-2091), Ell-F608 (V8-3407)

CATEGORY: A

FUNCTION: The subject valves isolate low pressure piping from the adjacent high pressure piping.

TEST REQUIREMENT: Measure valve seat leakage and compare the measured leakage to a specific maximum leakage for each valve (IWV-3426).

BASIS FOR RELIEF: Due to system configuration, the above pressure isolation valves cannot be individually leak tested. Both valves must be tested within the same test volume with pressure being applied in the accident direction for both valves.

According to Technical Specification paragraph 3.4.3.2.d, the leakage shall be limited to one gpm (3785 ml/min) at a reactor coolant pressure of 1040 ± 10 psig from any reactor coolant system pressure isolation valve.

ALTERNATE TESTING: Pressure isolation valves Ell-F009 and Ell-F608 will be leak tested together. The test leakage will be compared to a maximum leakage of one gpm (3785 ml/min). The test leakage will also be trended according to the requirements of IWV-3427.

If the test leakage exceeds the criteria given in IWV-3427, both valves will be subject to the corrective actions of IWV-3427. The valve most likely to be the leaker will be repaired first and both valves retested. If the test leakage is within one gpm, no further testing will be performed.

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Relief Request VR-50

SYSTEM: High Pressure Coolant Injection

COMPONENT: E41-F003 (V17-2021)
E41-F006 (V8-2194)
E41-F600 (V17-2088)

CATEGORY: A

FUNCTION: The subject valves perform a bypass leakage isolation function.

TEST REQUIREMENT: Measure valve seat leakage and compare the measured leakage for each valve (IWV-3426).

BASIS FOR RELIEF: Due to system configuration, the above listed valves cannot be individually leak tested. Bypass leakage valves E41-F003 and E41-F600 must be tested together, and bypass leakage valve E41-F006 must be tested with the non-bypass leakage valve B21-F076A.

Maximum allowable leakages have been assigned to the two groups of valves, based on the requirement that the summed leakage from all bypass leakage paths is less than 0.04 La. (See the Fermi 2 Safety Evaluation Report, NUREG-0798, Supplement 2, pg. 6-1.)

ALTERNATE TESTING: Bypass leakage valves E41-F003 and E41-F600 and bypass leakage valve E41-F006 and containment isolation valve B21-F076A will be leak tested as groups. The test leakage will be compared to the maximum leakage assigned to each of the two groups. The leakage will also be trended according to the requirements of IWV-3427.

If the test leakage exceeds the criteria given in IWV-3427, valves in the affected group will be subject to the corrective actions of IWV-3427 on a valve by valve basis. The valve most likely to be the leaker will be repaired first and the group retested. If the test leakage is within the criteria, no further testing will be performed.

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Relief Request VR-51

SYSTEM: Diesel Generator

COMPONENTS: R30-FA04A R30-FA04B R30-FA04C R30-FA04D
R30-FA05A R30-FA05B R30-FA05C R30-FA05D

CATEGORY: B

FUNCTION: Normally closed valves which must open to supply air to the Air Start System of the Diesel Generator.

TEST REQUIREMENTS: Per IWV-3413(b) exercise testing, verified by stroke time measurements, will be performed to confirm full stroke capability of each valve. The stroke direction tested and timed will be based on the direction the valve disk must travel to fulfill its safety function.

The test frequency required is once every 92 days during power operation.

BASIS FOR RELIEF: It is impractical to apply the requirements of IWV-3413(b) to valves with very short stroke times (i.e. 2 seconds). Solenoid operated valves typically have full stroke times under one second. For these short stroke time valves, variances of 50 percent or more can occur in the measured times for reasons that are in no way related to valve performance; for example, operator reaction times. In this specific case verifying that the valve's stroke time satisfies system operating requirements is sufficient to evaluate valve performance.

To satisfy the test frequency requirement would require additional diesel starts which would be detrimental to overall diesel operation and reliability.

ALTERNATE TESTING: For the subject valves, a successful start of the diesel generator within the required Fermi 2 Technical Specification requirement of achieving speed and voltage level (Ref. Tech. Spec. Paragraph 4.8.1.1.2.a.4) within ten (10) seconds, shall be sufficient to demonstrate that the 3-way solenoid valves have opened in the required time.

The test frequency shall be once every 6 months.