



Commonwealth Edison  
1400 Opus Place  
Downers Grove, Illinois 60515

May 27, 1992

Dr. Thomas E. Murley, Director  
Office of Nuclear Reactor Regulation  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Attn: Document Control Desk

Subject: Dresden Nuclear Power Station Unit 2  
Request for Scheduling Exemption  
From 10 CFR 50, Appendix J,  
Type B and C Test Interval  
NRC Docket No. 50-237

Reference: (a) May 7, 1992 Conference call between CECO  
(P. Piet, et al) and NRR (B. Siegel, et al).

Dear Dr. Murley:

As discussed with members of your staff (Reference (a)), pursuant to 10 CFR 50.12(a), Commonwealth Edison requests a one time scheduling exemption for Dresden Unit 2 from the two year test interval for Type B and C leak rate testing required by 10 CFR 50, Appendix J, Sections III.D.2(a) and III.D.3. The exemption is requested to increase the surveillance interval for volumes which cannot be local leak rate tested during plant operations in order to support the current refueling outage schedule and to avoid the potential for an earlier reactor shutdown. It is requested that the proposed exemption request be approved no later than August 15, 1992.

Dresden Unit 2 entered into the Cycle 12 Refueling Outage (D2R12) on September 23, 1990. Type B and C local leak rate testing began on September 23, 1990 and continued through January 3, 1991. However, several unanticipated events caused an unusually long outage with startup not occurring until February 10, 1991. In addition, Dresden unit 2 entered several maintenance outages during Cycle 13. This included a 111 day outage, while Unit 3 was in a refuel outage, to resolve problems relating to the 250 Volt Station Battery, Divisional cable separation, and undervoltage concerns. As a result of these extended outages, complete fuel utilization will not be achieved by the originally scheduled refuel outage in September, 1992. This incomplete utilization of fuel would cause an increase in excess reactivity during the next fuel cycle. Additionally, if a separate forced outage was imposed

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to perform testing and operation resumed until the fuel was utilized, Commonwealth Edison and our customers would bear the substantial replacement power costs incurred to provide alternate supplies of power during the outage period.

In order to rectify these concerns, Commonwealth Edison Company anticipates rescheduling the Dresden Unit 2 Refuel Outage from September of 1992 to January 4, 1993. We therefore request a maximum exemption of up to 122 days, for the most extreme case, from the two year Appendix J test interval for the Type B and C testable volumes listed in Attachments II and III. This exemption is requested because these volumes cannot be tested during reactor operation. Attachment IV provides the justification for not performing local leak rate testing on these volumes during reactor operation. Commonwealth Edison will test the volumes listed in Attachment III should a forced outage of suitable duration occur prior to January 4, 1993. Attachment VI outlines the testing methodology which will be used if forced outages occur. In addition, an administrative limit 85% of  $0.6 L_a$  will be established for the remainder of the Unit 2 operating cycle. This limit provides an added margin of safety to account for possible increases in the leakage rates of the untested volumes and will help ensure that the maximum pathway leakage limit does not exceed the Technical Specification limit of  $0.6 L_a$ .

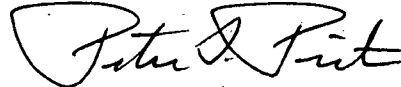
Attachments to this letter contain the following:

- a) Attachment I provides justification for the exemption in accordance with the guidelines established in 10 CFR 50.12(a)
- b) Attachments II and III identify the volumes for which the exemption is requested, the duration of the exemption required for each volume, and the minimum and maximum pathway leakage history for each volume.
- c) Attachment IV provides justification for not performing local leak rate testing on volumes during reactor operation.
- d) Attachment V lists the volumes which Commonwealth Edison will test during reactor operation to provide a good faith effort of compliance and to reduce the number of volumes requiring exemption.
- e) Attachment VI outlines the testing methodology which will be used if forced outages occur. This attachment also defines the methodology for tracking maximum pathway leakage during the remainder of the fuel cycle.

- f) Attachment VII lists the balance of the volumes which do not require testing since their 24 month critical dates expire after the projected start of the rescheduled outage.

Please direct any questions you may have regarding this matter to this matter to this office.

Very truly yours,

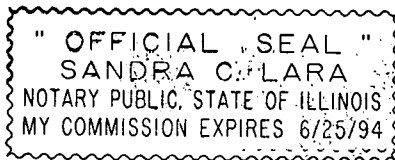


Peter L. Piet  
Nuclear Licensing Administrator

Attachments

- cc: A.B. Davis - Regional Administrator (RIII)
- B.L. Siegel - NRR Project Manger
- W.G. Rogers - Dresden, Senior Resident Inspector
- J.C. Pulsipher - NRR

State of Ill, County of Cook  
 Signed before me on this 28th day  
 of May, 1992 by [Signature]  
 Notary Public [Signature]



ATTACHMENT I  
JUSTIFICATION FOR SCHEDULAR EXEMPTION FROM  
10 CFR 50, APPENDIX J  
TYPE B AND C TEST FREQUENCY

EXEMPTION:

Commonwealth Edison Company requests a one time schedular exemption from the 24 month Type B and C local leak rate test interval required by 10 CFR 50, Appendix J, Sections III.D.2(a) and III.D.3. This exemption applies only to Dresden Unit 2 and requires a maximum 122 day extension for the Type B and C testable volumes listed in Attachments II and III.

DISCUSSION:

As a result of an unusually long refuel outage (D2R12) and several unanticipated and lengthy maintenance outages, the total number of days in which the Dresden Unit 2 Reactor was critical was reduced considerably. This reduction in the total number of days of operation will not allow complete fuel utilization to be achieved by the originally scheduled refuel outage in September, 1992. This incomplete utilization of fuel will cause an increase in excess reactivity during the next fuel cycle. Additionally, if a separate forced outage was imposed to perform testing and operation resumed until the fuel was utilized, Commonwealth Edison and our customers would bear the substantial replacement power costs incurred to provide alternate supplies of power during the outage period. In order to rectify these concerns, Commonwealth Edison Company anticipates rescheduling the Dresden Unit 2 Refuel Outage from September, 1992 to January, 1993. Increasing the interval between refueling outages will cause the Station to exceed the 24 month Type B and C leak rate testing surveillance interval required by 10 CFR 50, Appendix J. Therefore, an extension to the 24 month test interval is required for Type B and C leak rate tests which cannot be performed during reactor operation.

Basis:

As discussed in the following sections, the requested exemption meets the three necessary criteria of 10 CFR 50.12(a)(1). In addition, there are special circumstances present which qualify for consideration for an exemption per the criteria established in 10 CFR 50.12(a)(2).

A. Criteria for Granting Exemptions are Met per 10 CFR Part 50.12(a)(1):

1. The Requested Exemptions and the Activities Which Would be Allowed Thereunder are Authorized by Law

If the criteria established in 10 CFR 50.12(a) are satisfied, as they are in this case, and if no other prohibition of law exists to preclude the activities which would be authorized by the requested exemption, and there are no such prohibition, the Commission is authorized by law to grant this exemption request.<sup>1</sup>

2. The Requested Exemption Will Not Present Undue Risk to the Public

As stated in 10 CFR 50, Appendix J, the purpose of primary containment leak rate testing is to ensure that the leakage through primary containment shall not exceed the leakage allowed by the Technical Specifications or associated basis and to ensure that proper maintenance and repair is performed throughout the service life of the containment boundary components. The requested exemption is consistent with this intent in that it represents a one time schedular exemption of short duration for Type B and C volumes which cannot be tested during reactor operation (Attachments II and III). All remaining leak rate tests will still be performed to assess compliance with Technical Specification requirements and to assure that any required maintenance or repair work is performed. To reduce the number of volumes which need an exemption, Commonwealth Edison will test the volumes listed in Attachment V during reactor operation. In addition, volumes listed in Attachment III will be tested should a forced outage of suitable duration occur prior to January 4, 1993. Attachment VI outlines the testing

<sup>1</sup>

See U.S. vs. Allegheny-Ludlum Steel Corp., 406 U.S. 742, 755 (1972).

methodology which will be used if forced outages occur. In order to provide an added margin of safety and to account for possible increases in the leakage rates of untested volumes during the relatively short period of the exemption, Dresden Station will impose an administrative limit for maximum pathway leakage of 85% of 0.6L<sub>1</sub> for the remaining Unit 2 fuel cycle (ref Attachment VI).

Past Unit 2 local leak rate test data, shown in Attachments II and III, have in general demonstrated good leak rate test results. The current maximum pathway leakage rate for Dresden Unit 2, as determined through Type B and C leak rate testing, is 333.53 scfh. This value is approximately 68% of the Technical Specification limit of 488.45 scfh (0.6L<sub>1</sub>). As a result of additional maintenance being performed on various pathways during cycle 13, the current leakage rate has been reduced from the D2R12 "As Left" leakage rate of 362.29 scfh. In addition, the D2R12 "As Left" total minimum pathway leakage rate for Type B and C testable penetrations was 126.69 scfh. This value is approximately 21% of the Technical Specification limit of 610.56 scfh (0.75L<sub>1</sub>). By using the minimum pathway methodology, a conservative measurement of the actual leakage expected through a pathway under post accident conditions can be determined. The minimum pathway data from the last two Unit 2 refuel outages also indicates that on a minimum pathway basis, the quality of primary containment does not degrade excessively through the course of the fuel cycle. In addition, the D2R12 "As Left" Integrated Leak Rate Test, completed on December 18, 1990, indicated that the primary containment overall integrated leakage rate, which obtains the summation of all potential leakage paths including containment welds, valves, fittings, and penetrations, was 0.8128 wt%/day. This value is the sum of the 95% upper confidence limit calculated leak rate of 0.7428 wt%/day plus the leakage rate of all nonvented pathways and the leakage compensation for the change in the drywell sump levels. This value is approximately 67% of the limit specified in the Technical Specifications (1.2 wt%/day or 0.75 L<sub>1</sub>).

The above data, along with the station imposed limit for maximum pathway leakage, provide a basis for showing that the probability of exceeding the off site dose rates established in 10 CFR 100 will not be increased by extending the current 24 month

Type B and C testing interval a maximum of 122 days. Therefore, this exemption will not "present an undue risk to the public health and safety".

2. The Requested Exemptions Will Not Endanger the Common Defense and Security

The common defense and security are not in any way compromised by this exemption request.

B. At Least One of the Special Circumstances Are Present Per 10 CFR 50.12(a)(2)

1. The Requested Exemptions Will Avoid Undue Hardship or Costs

The requested schedular extension is required to prevent a forced shutdown of Dresden Unit 2. Preparations for a refueling outage are proceeding based on the scheduled shutdown date of January 4, 1993. An earlier forced shutdown would result in an overall increase in the duration of the outage since equipment delivery, preparation, and mobilization of work forces could not be accelerated to support such a large advancement of the refuel outage. In addition, due to an unusually long refuel outage (D2R12) and several unanticipated and lengthy maintenance outages, complete fuel utilization will not be achieved by the original refuel outage scheduled for September 1992. Therefore, a new fuel reload design and a partial accident/transient analysis will have to be performed which will increase the cost and the number of work hours allotted to the fuel design. If a separate forced outage were imposed and operation resumed until January 4, 1993, the leak rate testing would require approximately 16 days of downtime. For either scenario, the substantial replacement power costs incurred to provide alternate supplies of power during the outage period would be borne by Commonwealth Edison and our customers. Because the requested exemption does not jeopardize the health and safety of the public, as previously discussed, its approval is warranted in order to prevent a shutdown. Commonwealth Edison does not believe that when Appendix J was implemented that extended outages or extended operating cycles, such as those associated with 18 to 24 month fuel cycles or extended coast-downs were foreseen.

The Dresden Unit 2 situation therefore represents a special circumstance per item (iii) of 10 CFR 50.12(a)(2) i.e. "Compliance would result in undue

hardship or other costs that are significantly in excess of those contemplated when the regulation was adopted, or that are significantly in excess of those incurred by others similarly situated." Exemptions to Appendix J requirements have subsequently been granted in such cases. <sup>2</sup>

2. The Requested Exemptions Provide Only Temporary Relief and the Licensee Has Made Good Faith Efforts to Comply

As discussed above, the exemption request is for a short duration relative to the 24 month requirement. In addition, all volumes that can be safely tested during reactor operation will be tested (Attachment V). Volumes which cannot be tested during operation but can be tested during cold shutdown (Attachment III) will be tested per the following criteria should forced outages of suitable duration occur. Testing of the volumes listed in Attachment III will begin within 96 hours after the plant reaches cold shutdown condition. This testing will continue until all volumes have been tested or the unit is ready for startup. The volumes selected for testing will be based upon the expected duration of the shutdown and the time required to prepare the volumes for testing. Volumes not tested during a cold shutdown shall be tested during any subsequent cold shutdowns that may occur prior to the D2R13 refueling outage. This meets an additional criterion for a special circumstance per item (v) of 50.12(a)(2), i.e. "The exemption would provide only temporary relief from the applicable regulation and the licensee or applicant has made good faith efforts to comply with the regulation".

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<sup>2</sup> (a) Docket No. 50-219, Oyster Creek Nuclear Generating Station, Exemption to 10 CFR Part 50, Appendix J - Extension of the Type B and C leak rate test per load (Tac No. 76137).

(b) Docket No. 50-245, B13770, Millstone Nuclear Power Station, Unit No. 1, 10 CFR Part 50, Appendix J schedule exemption from Type B and C leak rate test requirements (Tac No. 79700).



Attachment II  
 Volumes Which Must Be Tested During A Refuel Outage

Maximum # of Days For Exemption	Test Volume	1988/89 Max Pathway As Found/ As Left (scfh)	1988/89 Min Pathway As Found/ As Left (scfh)	1988/89 Valves Repaired	1990 Max Pathway As Found/ As Left (scfh)	1990 Min Pathway As Found/ As Left (scfh)	1990 Valves Repaired
113	3703 & 3706	0.0 / 0.0	0.0 / 0.0		14.6 / 14.6	7.3 / 7.3	
110	1501-22A, 26A & 1001-5A	Note 1	0.0 / 0.0		1.5 / 1.5	Note 2	
110	1501-22B, 26B & 1001-5B	Note 1	0.0 / 0.0		1.3 / 1.3	Note 2	
109	1501-25A & 26A	1.2 / 1.2	Note 2		Note 1	0.5 / 0.5	
109	1501-25B & 26B	3.7 / 3.7	Note 2		Note 1	0.1 / 0.1	
100	1101-1 & 15	Note 1	2.1 / 2.1		0.1 / 0.1	Note 2	
100	1101-1 & 16	3.2 / 3.2	Note 2		0.1 / 0.1	0.1 / 0.1	
99	205-2-4 & BLIND FLANGE	Note 1	7.9 / 7.9		Note 1	1 / 1	
97	BELLOWS PENETRATION X-105A	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-105B	0.1 / 0.1	0.1 / 0.1		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-105C	0.1 / 0.1	0.1 / 0.1		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-105D	0.3 / 0.3	0.2 / 0.2		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-106	0.1 / 0.1	0.1 / 0.1		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-107A	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-107B	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-108A	0.5 / 0.5	0.3 / 0.3		1.6 / 1.6	0.8 / 0.8	
97	BELLOWS PENETRATION X-109B	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-111A	0.3 / 0.3	0.2 / 0.2		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-111B	0.1 / 0.1	0.1 / 0.1		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-115A	0.3 / 0.3	0.2 / 0.2		0.4 / 0.4	0.2 / 0.2	
97	BELLOWS PENETRATION X-116A	2.7 / 2.7	1.4 / 1.4		3.7 / 3.7	1.85 / 1.85	
97	BELLOWS PENETRATION X-116B	1.5 / 1.5	0.8 / 0.8		3.3 / 3.3	1.65 / 1.65	
97	BELLOWS PENETRATION X-123	0.0 / 0.0	0.0 / 0.0		0.3 / 0.3	0.15 / 0.15	
97	BELLOWS PENETRATION X-124	0.3 / 0.3	0.2 / 0.2		0.4 / 0.4	0.2 / 0.2	
97	BELLOWS PENETRATION X-125	0.0 / 0.0	0.0 / 0.0		2.5 / 2.5	1.25 / 1.25	
97	BELLOWS PENETRATION X-126	2.1 / 2.1	1.1 / 1.1		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-130	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-144	1.2 / 1.2	0.6 / 0.6		1.4 / 1.4	0.7 / 0.7	
97	BELLOWS PENETRATION X-147	0.0 / 0.0	0.0 / 0.0		0.1 / 0.1	0.05 / 0.05	
97	BELLOWS PENETRATION X-149A	4.0 / 4.0	2.0 / 2.0		7.2 / 7.2	3.6 / 3.6	

Attachment II (con't)  
**Volumes Which Must Be Tested During A Refuel Outage**

Maximum # of Days For Exemption	Test Volume	1988/89		1988/89		1988/89 Valves Repaired	1990		1990		1990 Valves Repaired
		Max Pathway As Found/ As Left (scfh)	Min Pathway As Found/ As Left (scfh)	Max Pathway As Found/ As Left (scfh)	Min Pathway As Found/ As Left (scfh)		Max Pathway As Found/ As Left (scfh)	Min Pathway As Found/ As Left (scfh)			
97	BELLOWS PENETRATION X-149B	1.5 / 1.5	0.8 / 0.8				4.8 / 4.8	2.4 / 2.4			
93	DRYWELL HEAD MANWAY SEAL	0.0 / 0.3	0.0 / 0.0				0.1 / 0.1	0.05 / 0.05			
46	1001-1A, 1B, 2A, 2B, & 2C	12.3 / 12.3	6.2 / 6.2				232.6 / 30.6	30.6 / 0		1001-1A, 1B	
44	205-27 & BLIND FLANGE	9.4 / 9.4	Note 2				Und / 7.9	Note 2		205-2-7	
39	1301-3 & 4	13.5 / 13.5	6.8 / 6.8				114.9 / 0.1	0.1 / 0		1301-3	
38	1201-1, 1A, 2 & 3	0.8 / 0.8	0.4 / 0.4				7.2 / 17.3	7.2 / 0		1201-1A	

**Note 1:** A maximum pathway value cannot be assigned because the other valve in series exhibited a higher leakage rate. Therefore, the maximum pathway value for this volume was assigned to the other valve in series.

**Note 2:** A minimum pathway value cannot be assigned because the other valve in series exhibited a lower leakage rate. Therefore, the minimum pathway value for this volume was assigned to the other valve in series.

Attachment III  
**Volumes Which Must Be Tested During Cold Shutdown**

Maximum # of Days For Exemption	Test Volume	1988/89 Max Pathway As Found/ As Left (scfh)		1988/89 Min Pathway As Found/ As Left (scfh)		1988/89 Valves Repaired	1990 Max Pathway As Found/ As Left (scfh)		1990 Min Pathway As Found/ As Left (scfh)		1990 Valves Repaired
122	203-1B & 2B	10.9	1.6	7.7	0.8	Repacked	6.7	6.7	4.7	4.7	
122	203-1C & 2C	10.5	1.6	5.3	0.8	Repacked	24.6	7.8	7.8	5.5	203-2C
120	220-1 & 220-2	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
120	1301-17,20	0.1	0.1	0.1	0.1		0.1	0.1	0.05	0.05	
119	2301-45 & 2301-74	124.5	10.2	124.5	10.2	2301-45	0.1	0.1	0.05	0.05	
114	3769-500 & 3799-128	Note 3		Note 3			0.4	0.4	0.4	0.4	
113	1601-57, 58 & 59 (N2 INERTING)	0.1	0.1	0.1	0.1		0.1	0.1	0.05	0.05	
113	4722 & CHECK VALVE	12.6	18.7	18.7	0.0	Check Valve	6.0	6.0	3	3	
104	301-98 & 99 (CRD RETURN)	16.0	16.0	Note 2			Note 1		0.1	0.1	
103	301-95 & 99 (CRD RETURN)	Note 1		0.0	0.0		0.2	0.2	Note 2		
99	SHEAR LUG INSP HATCH SEAL # 1	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 2	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 3	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 4	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 5	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 6	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 7	4.4	4.4	2.2	2.2		0.1	0.1	0.05	0.05	
99	SHEAR LUG INSP HATCH SEAL # 8	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	
92	TIP BALL VALVE A	2.5	2.5	2.5	2.5		2.6	2.6	2.6	2.6	
92	TIP BALL VALVE B	0.8	0.8	0.8	0.8		1.5	1.5	1.5	1.5	
92	TIP BALL VALVE C	1.7	1.7	1.7	1.7		1.0	1.0	1	1	
92	TIP BALL VALVE D	2.2	2.2	2.2	2.2		3.0	3.0	3	3	
92	TIP BALL VALVE E	2.1	2.1	2.1	2.1		3.2	3.2	3.2	3.2	
92	TIP PURGE CHECK VALVE	0.3	0.3	0.3	0.3		2.8	2.8	2.8	2.8	
82	1501-188 & 19B	4.1	4.1	2.1	2.1		78.4	7.3	7.3	0	1501-188
81	TORUS NARROW RANGE LT 2-1626	Note 3		Note 3			0.0	0.0	0.1	0.1	
80	1402-24A & 25A	30.1	1.1	1.1	0.0	1402-24A	0.1	0.1	0.05	0.05	1402-24A, 25A
80	1402-24B & 25B	0.0	0.0	0.0	0.0		0.1	0.1	0.05	0.05	1402-24B, 25B

Attachment III (con't)  
**Volumes Which Must Be Tested During Cold Shutdown**

Maximum # of Days For Exemption	Test Volume	1988/89 Max Pathway As Found/ As Left (scfh)	1988/89 Min Pathway As Found/ As Left (scfh)	1988/89 Valves Repaired	1990 Max Pathway As Found/ As Left (scfh)	1990 Min Pathway As Found/ As Left (scfh)	1990 Valves Repaired
73	2001-105 & 106	23.2 / 23.2	11.6 / 11.6		1.0 / 1.0	0.5 / 0.5	
66	220-57A & 62A	Und / 4.2	Note 2	220-62A	Note 1 / 9.2	27.9 / Note 2	220-62A
64	CLEAN DEMIN TO THE DRYWELL	Note 3	Note 3		0.1 / 0.1	0.05 / 0.05	
59	1501-18A & 19A	0.0 / 0.3	0.0 / 0.2		2.0 / 0.1	0.1 / 0	1501-18A
58	220-57B & 62B	Und / 28.6	Note 2	220-62B	Und / Note 1	Note 2 / 4.9	220-62B
50	203-1D & 2D	13.0 / 1.8	8.3 / 0.9	Repacked & ID Seat Work	67.8 / 6.2	0.5 / 0.5	203-1D
50	220-57A & 58A	Note 1	1.2 / 1.2		51.2 / Note 1	Note 2 / 1.8	220-58A
48	3702 & 3799-128	10.0 / 10.0	5.0 / 5.0		131.0 / 12.5	12.5 / 0	3702
47	1301-1 & 2	1.8 / 1.8	0.9 / 0.9		4.5 / 0.1	0.1 / 0	1301-1
45	220-57B & 58B	Note 1	5.4 / 5.4		Note 1 / 9.3	0.3 / 0	220-58B
39	SERVICE AIR TO THE DRYWELL	Note 3	Note 3		2.0 / 2.0	1 / 1	
38	1601-21, 22, 55, 56 & 8502-500	8.1 / 7.1	4.1 / 3.6	1601-21, 22, 56	0.7 / 11.1	0.7 / 0	1601-22
38	203-1A & 2A	10.7 / 6.0	5.4 / 3.0	Repacked	28.5 / 0.1	0.1 / 0	203-1A
36	399-506, 112A, 112B, 113A & 113B	Note 3	Note 3		0.3 / 0.1	0.15 / 0.05	
34	1501-27A & 28A	0.0 / 0.0	0.0 / 0.0		Und / 0.1	0.1 / 0	1501-27A
34	1501-27B & 28B	3.1 / 3.1	1.6 / 1.6		1.0 / 10.2	0.5 / 5.1	1501-27B, Flange
33	2001-5 & 6	5.2 / 5.2	2.6 / 2.6		35.0 / 20.0	17.5 / 10	2001-5, -6

**Note 1:** A maximum pathway value cannot be assigned because the other valve in series exhibited a higher leakage rate. Therefore, the maximum pathway value for this volume was assigned to the other valve in series.

**Note 2:** A minimum pathway value cannot be assigned because the other valve in series exhibited a lower leakage rate. Therefore, the minimum pathway value for this volume was assigned to the other valve in series.

**Note 3:** Volume was not in the program during this refuel outage.

ATTACHMENT IV  
Justification For Not Testing Volumes During Operation

VOLUME	BASIS
203-1B & 2B	Drywell access required to verify that Main Steam lines are drained.
203-1C & 2C	Drywell access required to verify that Main Steam lines are drained.
220-1 & 2	Drywell access required to test.
3769-500 & 3799-128	Drywell access required to test. Must drain RBCCW in drywell.
4722 & Check Valve	Drywell access required to test.
301-98 & 99	Drywell access required to test.
301-95 & 99	Drywell access required to test.
Sheer Lug Insp. Hatch Seal #1 through #8	Drywell access required to test.
TIP Ball Valves A through E	Drywell access required to test.
TIP Purge Check valve	Drywell access required to test.
1402-24A & 25A	Drywell access required to position valves for testing.
1402-24B & 25B	Drywell access required to position valves for testing.
2001-105 & 106	Drywell access required to obtain a vent path.
220-57A & 58A	Drywell access required to test.
3702 & 3799-128	Drywell access required to test. Must drain RBCCW in drywell.
1301-1 & 2	The 1301-1 valve sees a pressure of 1000 psig during normal operation.
220-57B & 58B	Drywell access required to test.
Service Air to Drywell	Drywell access required to test.
203-1A & 2A	Drywell access required to verify that Main Steam lines are drained.

ATTACHMENT IV (cont'd)  
Justification For Not Testing Volumes During Operation

VOLUME	BASIS
399-506, 112A, 112B, 113A & 113B	Drywell access required to position valves for testing.
2001-5 & 6	Drywell access is required to obtain a vent path.
220-57A & 62A	Drywell access required to position valves for testing.
Clean Demin To Drywell	Drywell access required to test.
220-57B & 62B	Drywell access required to position valves for testing.
203-1D & 2D	Drywell access required to verify that Main Steam lines are drained.
2301-45 & 74	Testing this volume during operation requires the HPCI system to be inoperable.
1601-57,58, & 59	Testing this volume during operation would not allow the 1 psid to be maintained between the drywell and torus.
1501-18A & 19A	Testing this volume during operation requires one loop of the LPCI system to be inoperable.
1501-18B & 19B	Testing this volume during operation requires one loop of the LPCI system to be inoperable.
Torus LT 2-1626	Isolating and draining this volume during operation will prevent the HPCI system to take suction from the Torus.
1601-21,22,55 & 56	Testing this volume during operation will isolate the suction side of the pumpback air compressors.
1501-27A & 28A	Testing this volume during operation requires one loop of the LPCI system to be inoperable.

Attachment VII  
Balance of Volumes

Critical Date	Test Volume
02/02/93	8501-5A & END OF LINE
02/02/93	BELLOWS PENETRATION X-113
04/05/93	DRYWELL HEAD DOUBLE GASKET SEAL
07/14/93	220-44 & 45
11/01/93	1601-23,24,60,61,62 & 63
11/03/93	DOUBLE GASKET SEAL CRD HATCH
11/04/93	DRYWELL EQUIPMENT HATCH SEAL
11/05/93	2499-1A & 2A
11/05/93	2499-1B & 2B
11/05/93	2499-3A & 4A
11/05/93	2499-3B & 4B
01/03/94	2301-4 & 5

Attachment V  
 Volumes Which Can Be Tested During Operation

Critical Date	Test Volume
09/24/92	DOUBLE GASKET 1601-32D
09/24/92	DOUBLE GASKET 1601-32E
09/24/92	DOUBLE GASKET 1601-32F
09/24/92	DOUBLE GASKET 1601-33D
09/24/92	DOUBLE GASKET 1601-33E
09/24/92	DOUBLE GASKET 1601-33F
09/28/92	1699-65A & FLANGE
09/28/92	DRYWELL AIR SAMPLE VALVES
09/28/92	ELECTRICAL PENETRATION X-202B
09/28/92	ELECTRICAL PENETRATION X-202D
09/28/92	ELECTRICAL PENETRATION X-202F
09/28/92	ELECTRICAL PENETRATION X-202J
09/28/92	ELECTRICAL PENETRATION X-202N
09/28/92	ELECTRICAL PENETRATION X-202Q
09/28/92	ELECTRICAL PENETRATION X-202S
09/28/92	ELECTRICAL PENETRATION X-202W
09/28/92	ELECTRICAL PENETRATION X-202X
09/28/92	ELECTRICAL PENETRATION X-204E
09/28/92	ELECTRICAL PENETRATION X-204H
09/29/92	8501-1A & END OF LINE
09/29/92	8501-1B & END OF LINE
09/29/92	9205A & END OF LINE
09/29/92	9205B & END OF LINE
09/29/92	9206A & END OF LINE
09/29/92	9206B & END OF LINE
10/01/92	DOUBLE GASKET EAST TORUS DRAIN
10/01/92	DOUBLE GASKET WEST TORUS DRAIN
10/02/92	1699-65B & FLANGE
10/03/92	4720 & 4721
10/03/92	9207A & END OF LINE
10/03/92	9207B & END OF LINE
10/03/92	9208B & END OF LINE
10/04/92	8501-5B & END OF LINE
10/05/92	2599-4A & 5A
10/05/92	2599-4B & 5B
10/05/92	8501-3A & 3B
10/10/92	ELECTRICAL PENETRATION X-200A
10/10/92	ELECTRICAL PENETRATION X-200B



Attachment V (con't)  
 Volumes Which Can Be Tested During Operation

Critical Date	Test Volume
10/10/92	ELECTRICAL PENETRATION X-203A
10/10/92	ELECTRICAL PENETRATION X-203B
10/10/92	ELECTRICAL PENETRATION X-205E
10/11/92	ELECTRICAL PENETRATION X-204P
10/11/92	ELECTRICAL PENETRATION X-204G
10/11/92	ELECTRICAL PENETRATION X-204S
10/11/92	ELECTRICAL PENETRATION X-204T
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136A
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136B
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136C
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136D
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136E
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136F
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136G
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136H
10/11/92	TIP MONITOR FLANGE SEAL FOR X-136J
10/28/92	2499-288 & 298
11/01/92	DOUBLE GASKET SEAL X-135E
11/08/92	DOUBLE GASKET 1601-32A
11/08/92	DOUBLE GASKET 1601-32B
11/08/92	DOUBLE GASKET 1601-32C
11/09/92	DOUBLE GASKET 1601-33A
11/09/92	DOUBLE GASKET 1601-33B
11/09/92	DOUBLE GASKET 1601-33C
11/12/92	ELECTRICAL PENETRATION X-2028B
11/20/92	2499-28A & 29A
11/25/92	1601-20A & 31A
11/26/92	1601-20B & 31B
12/12/92	DOUBLE GASKET SEAL PENETRATION X-200
12/12/92	ELECTRICAL PENETRATION X-205B
12/14/92	9208A & END OF LINE
12/16/92	2599-2A & 23A
12/16/92	2599-2B & 23B
12/16/92	2599-3A & 24A
12/16/92	2599-3B & 24B
12/24/92	EAST TORUS HATCH SEAL
12/24/92	WEST TORUS HATCH SEAL

**ATTACHMENT VI**  
**Methodology for Leak Rate Testing**

Testing of the volumes listed in Attachment III will commence within 96 hours after the plant reaches a cold shutdown condition. This testing will continue until all volumes have been tested or the unit is ready for startup. The volumes selected for testing will be based upon the expected duration of the shutdown and the time required to prepare the volumes for testing.

Volumes not tested during a cold shutdown shall be tested during any subsequent cold shutdowns that may occur prior to the D2R13 refueling outage. If no other cold shutdowns occur, the volumes will be tested during the D2R13 refueling outage.

In order to ensure that the Technical Specification maximum pathway leakage limit, 0.6 L<sub>1</sub> is not exceeded during the course of the exemption, an administrative limit of 85% of 0.6 L<sub>1</sub> has been established for the remainder of the cycle. This limit provides a margin of safety to account for any possible increases in the leakage rates of volumes that cannot be tested. This will help ensure that the maximum pathway leakage does not exceed the Technical Specification limit.

The current maximum path leakage for Unit 2 is 333.53 scfh, which is 68.3% of the Technical Specification maximum pathway leakage limit. This number is based on the sum of the as-left maximum pathway leakage rates obtained from all Type B and Type C tests. The ongoing changes to the maximum path leakage will be tracked as described below.

As each volume is tested throughout the course of the exemption, the current as-found maximum pathway leakage rate for a volume will be subtracted from the as-left maximum pathway leakage rate for that volume. This difference will then be subtracted from the as left maximum pathway sum of all Type B and Type C tests to obtain the current maximum pathway sum of leakage rates. This methodology is represented in the following equation:

$$\text{max} = x - ( y - z )$$

Where:

max = Current maximum pathway sum of leakage rates for Type B and Type C tests

x = As-left maximum pathway sum of leakage rates for Type B and Type C tests

y = Previous as-left maximum pathway leakage rate for the volume tested

z = Current as-found maximum pathway leakage rate for the volume tested

**ATTACHMENT VI (cont'd)**  
**Methodology for Leak Rate Testing**

Testing will continue in this manner until all volumes listed in Attachment III have been tested. If at any time the current maximum path leakage rate is found to exceed the administrative limit, corrective actions will be taken to bring the leakage rate back below the limit.

ATTACHMENT IV (cont'd)  
Justification For Not Testing Volumes During Operation

. . . . . (Refuel Outage Only) . . . . .

VOLUME	BASIS
1001-1A, 1B, 2A, 2B, & 2C	Fuel must be removed from the reactor in order to isolate and drain the shutdown cooling loop.
Bellows Penetrations: X-105A, X-105B, X-105C, X-105D, X-106, X-107A, X-107B, X-108A, X-109B, X-111A, X-111B, X-115A, X-116A, X-116B, X-123, X-124, X-125, X-126, X-130, X-144, X-147, X-149A, X-149B	A refueling outage is required to implement the bellows testing program approved under the Dresden Station Units 2 and 3 and Quad Cities Station Units 1 and 2 Request for Exemption from 10 CFR 50, Appendix J Type B Testing Requirement for Two-Ply Containment Penetration Bellows. Reference: J.L. Schrage to Dr. T. E. Murley letter, dated 11-12-91
1201-1, 1A, 2, & 3	If valves 1201-1 and 1201-1A need to be repaired, it would require the vessel head to be removed and an expansion plug to be installed into the recirc pump suction line nozzle in order to isolate the valves from the vessel.
3703 & 3706	If valve 3703 needed to be repaired, it would require a maintenance line-stop to be installed in the line to isolate the valve from RBCCW; however, installation of this line-stop also isolates cooling water to the Shutdown Cooling pumps making the Shutdown Cooling system unavailable with fuel in the vessel.
1301-3 & 4	If valve 1301-4 needed to be repaired, it would require the vessel head to be removed and an expansion plug to be installed into the recirc pump suction line nozzle in order to isolate the valve from the vessel.

ATTACHMENT IV (cont'd)  
Justification For Not Testing Volumes During Operation

VOLUME	BASIS
1501-27B & 28B	Testing this volume during operation requires one loop of the LPCI system to be inoperable.
1301-17 & 20	The 1301-20 valve sees a pressure of approximately 1000 psig during normal operation.
. . . . . (Refuel Outage Only) . . . . .	
1501-22A, 26A & 1001-5A	Fuel must be removed from the reactor in order to isolate and drain the shutdown cooling loop.
1501-22B, 26B & 1001-5B	Fuel must be removed from the reactor in order to isolate and drain the shutdown cooling loop.
1501-25A, 26A	Fuel must be removed from the reactor in order to isolate and drain the shutdown cooling loop.
1501-25B, 26B	Fuel must be removed from the reactor in order to isolate and drain the shutdown cooling loop.
1101-1 & 15	Fuel must be removed from the reactor in order to take the Standby Liquid Control system out of service.
1101-1 & 16	Fuel must be removed from the reactor in order to take the Standby Liquid Control System out of service.
205-2-4 & Blind Flange	The flanged spool piece from the vessel head must be removed and a blind flange installed in order to perform the test.
Drywell Head Manway Seal	The reactor vessel shield blocks must be removed in order to perform the test.
205-2-7 & Blind Flange	The flanged spool piece from the vessel head must be removed and a blind flange installed in order to perform the test.