Commonwealth Edison
One First National Plaza, Chicago, Illinois
Address Reply to: Post Office Box 767
Chicago, Illinois 60690

March 17, 1976

Mr. Benard C. Rusche, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission Regulatory File Cy.
Washington, D.C. 20555

Subject: Dresden Station Units 2 and 3
Proposed Amendment to Facility Operating
License Nos. DPR-19 and DPR-25
NRC Docket Nos. 50-237 and 50-249

Reference (a): R. L. Bolger's letter to B. C. Rusche dated October 1, 1975

Dear Mr. Rusche:

Pursuant to 10 CFR 50.59, Commonwealth Edison proposes to amend Appendix A of the Technical Specifications to facility licenses DPR-19 and DPR-25. The purpose of the amendment is to provide assurance of hydraulic snubber reliability. The amendment is in conformance with your requests of July 9, 1975 and December 13, 1975. The changes are indicated on the attached revised pages iii, 91a, 91b, 91c, 91d, 91e, 99a, and 99b. This replaces all previously proposed Technical Specification changes for hydraulic snubbers.

The snubber inspections mentioned in reference (a) and subsequent inspections on Units 2 and 3 in accordance with the 124 day ±25% schedule, justify an inspection interval of six months ±25. Accordingly, the six month inspection schedule will be implemented immediately.

Any questions concerning this proposal should be addressed to this office.

Three (3) signed originals and 37 copies are provided for each unit.

Very truly yours,

2854

R. J. Bolger

R. L. Bolger
Assistant Vice President

Attachment

SUBSCRIBED and SWORN to
before me this 17th day
of March, 1976.

Nancy M. Hollingsworth
Notary Public
My Commission Expires September 24, 1978

NRC Dkt. 50-237

DRESDEN STATION

UNIT 2

TECHNICAL SPECIFICATIONS

Pages iii, 91a, 91b, 91c, 91d, 91e, 99a, and 99b.

3.6 LIMITING CONDITION FOR OPERATION	4.6 SURVEILLANCE REQUIREMENT
	3. The baseline data required to evaluate the conditions in Specifications 4.6.G.1 and 4.6.G.2 will be acquired each operating cycle.
H. Recirculation Pump Flow Mismatch	H. Recirculation Pump Flow Mismatch
1. Whenever both recirculation pumps are in operation, pump speeds shall be maintained within 10% of each other when power level is greater than 80% and within 15% of each other when power level is less than 80%.	Recirculation pumps speed shall be checked daily for mismatch.
2. If Specification 3.6.H.1 cannot be met, one recirculation pump shall be tripped.	
3. Whenever one pump is operable and the remaining pump is in the tripped position, the operable pump shall be at a speed less than 65% before starting the inoperable pump.	
I. Hydraulic Snubbers	I. Hydraulic Snubbers
1. During all modes of operation except cold shutdown and refuel, all hydraulic snubbers listed in Table 3.6-1 shall be operable except as noted in Specification 3.6.I.2 through 3.6.I.4.	The following surveillance requirements apply to all hydraulic snubbers listed in Table 3.6-1.
2. From and after the time that a hydraulic snubber is determined to be inoperable, continued operation is	1. All hydraulic snubbers whose seal material has been demonstrated by operating experience, lab testing or analysis to be compatible with the operating environment shall be visually inspected. This inspection shall include, but not necessarily be limited to, inspection of the hydraulic fluid reservoir, fluid connections, and linkage connection to the piping and anchor to verify snubber operability in accordance with the following schedule:

3.6 LIMITING CONDITION FOR OPERATION	4.6 SURVEILLANCE REQUIREMENT

permissible only during the succeeding 72 hours unless the snubber is sooner made operable.

3. If the requirements of 3.6.I.1 and 3.6.I.2 can not be met, an orderly shutdown shall be initiated and the reactor shall be in cold shutdown or refuel condition within 36 hours.

4. If a hydraulic snubber is determined to be inoperable while the reactor is in the cold shutdown or refuel mode, the snubber shall be made operable prior to startup.

5. Snubbers may be added to safety related systems without prior license amendment to Table 3.6.1 provided that safety evaluations, documentation, and reporting are provided in accordance with 10 CFR 50.59 and that a revision to Table 3.6.1 is included with a subsequent license amendment request.

No. of Snubbers Found Inoperable During Inspection Interval	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3, 4	124 days ± 25%
5, 6, 7	62 days ± 25%
≥8	31 days ± 25%

The required inspection interval shall not be lengthened more than one step at a time.

Snubbers may be categorized in two groups, "accessible" or "inaccessible" based on their accessibility for inspection during reactor operation. These two groups may be inspected independently according to the above schedule.

2. All hydraulic snubbers whose seal materials are other than ethylene propylene or other material that has been demonstrated to be compatible with the operating environment shall be visually inspected for operability every 31 days.

3. The initial inspection shall be performed within six months from the date of issuance of these specifications. For the purpose of entering the schedule in Specification 4.6.I.1, it shall be assumed that the facility had been on a six month inspection interval.

3.6 LIMITING CONDITION FOR OPERATION	4.6 SURVEILLANCE REQUIREMENT
	4. Once each refueling cycle, a representative sample of 10 snubbers or approximately 10% of the snubbers, whichever is less, shall be functionally tested for operability including verification of proper piston movement, lock up and bleed. For each unit and subsequent unit found inoperable, an additional 10% or ten snubbers shall be so tested until no more failures are found or all units have been teste

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Number No.	Location	Elevation	Azimuth	Snubber in High Radiation Area During Shutdown	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
2	Torus Ring Header 1501-24"	483'	83°			X
3	Torus Ring Header 1501-24"	483'	74°			X
4	Torus Ring Header 1501-24"	483'	38°			X
5	Torus Ring Header 1501-24"	483'	29°			X
7	Torus Ring Header 1501-24"	483'	331°			X
8	Torus Ring Header 1501-24"	483'	322°			X
9	Torus Ring Header 1501-24"	483'	286°			X
10	Torus Ring Header 1501-24"	483'	277°			X
12	Torus Ring Header 1501-24"	483'	218°			X
13	Torus Ring Header 1501-24"	483'	209°			X
15	Torus Ring Header 1501-24"	483'	151°			X
16	Torus Ring Header 1501-24"	483'	142°			X
1	Drywell Recirc. Motor 2B-202	524'	328°	X	X	
2	Drywell Recirc. Motor 2B-202	524'	302°	X	X	
3	Drywell Recirc. Motor 2B-202	524'	315°	X	X	
4	Drywell Recirc. Motor 2A-202	524'	148°	X	X	
5	Drywell Recirc. Motor 2A-202	524'	122°	X	X	
6	Drywell Recirc. Motor 2A-202	524'	135°	X	X	
7	Drywell Recirc. Pump 2B-202	512'	326°	X	X	
8	Drywell Recirc. Pump 2B-202	512'	304°	X	X	
9	Drywell Recirc. Pump 2B-202	507'	315°	X	X	
10	Drywell Recirc. Pump 2A-202	512'	124°	X	X	
11	Drywell Recirc. Pump 2A-202	512'	146°	X	X	
12	Drywell Recirc. Pump 2A-202	507'	135°	X	X	
13	Drywell Recirc. Line 201B-28"	507'	305°	X	X	
14	Drywell Recirc. Line 201A-28"	507'	105°	X	X	

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Number No.	Location	Elevation	Azimuth	Snubber in High Radiation Area During Shutdown	Snubbers Inaccessable During Normal Operation	Snubbers Accessible During Normal Operation
15	Drywell LPCI Line 1506-16"	513'	95°	X	X	
16	Drywell LPCI Line 1519-16"	513'	256°	X	X	
17	Drywell Recirc. Header 201B-22"	533'6"	195°	X	X	
18	Drywell HPCI Line 2305-10"	531'	117°	X	X	
19	Drywell HPCI Line 2305-10"	533'	112°	X	X	
20	Drywell HPCI Line 2305-10"	533'	108°	X	X	
21	Drywell Recirc. Header 201A-22"	533'6"	22°	X	X	
22	Drywell HPCI Line 2305-10"	550'	121°	X	X	
23	Drywell Cleanup Line 1201-8"	533'	330°	X	X	
24	Drywell Feedwater Line 3204D-12"	538'	106°	X	X	
25	Drywell Cleanup Line 1201-8"	534'	325°	X	X	
26	Drywell Feedwater Line 3204C-12"	540'	73°	X	X	
27	Drywell Cleanup 1201-8"	534'6"	300°	X	X	
28	Drywell Feedwater Line 3204A-18"	537'6"	66°	X	X	
29	Drywell HPCI Line 2305-10"	563'	140°	X	X	
30	Drywell Core Spray Line 1403-10"	575'	336°	X	X	
31	Drywell Core Spray Line 1404-10"	562'	231°	X	X	
32	Drywell Target Rock Valve 203-3A	542'6"	16°	X	X	
33	Drywell Target Rock Valve 203-3A	542'4"	31°	X	X	
34	Drywell Target Rock Valve 203-3A	540'0"	19°	X	X	
35	Drywell Target Rock Valve 203-3A	540'3"	34°	X	X	
	Isolation Condenser Pipeway Room:					
1	Iso. Cond. Line 1303-12"	558'	180°	X	X	
2	Iso. Cond. Line 1303-12"	568'	180°	X	X	
3	Iso. Cond. Line 1302-14"	580'	195°	X	X	

H. Jet Pump Flow Mismatch

The LPCI loop selection logic has been described in the Dresden Nuclear Power Station Units 2 and 3 FSAR, Amendments 7 and 8. For some limited low probability accidents with the recirculation loop operating with large speed differences, it is possible for the logic to select the wrong loop for injection. For these limited conditions the core spray itself is adequate to prevent fuel temperatures from exceeding allowable limits. However, to limit the probability even further, a procedural limitation has been placed on the allowable variation in speed between the recirculation pumps.

The licensee's analyses indicate that above 80% power the loop select logic could not be expected to function at a speed differential of 15%. Below 80% power the loop select logic would not be expected to function at a speed differential of 20%. This specification provides a margin of 5% in pump speed differential before a problem could arise. If the reactor is operating on one pump, the loop select logic trips that pump before making the loop selection.

In addition, during the start-up of Dresden Unit 2 it was found that a flow mismatch between the two sets of jet pumps caused by a difference in recirculation loops could set up a vibration until a mismatch in speed of 27% occurred. The 10% and 15% speed mismatch restrictions provide additional margin before a pump vibration problem will occur.

I. Hydraulic Snubbers

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or severe transient, while allowing normal thermal motion during startup and shutdown. The consequence of an inoperable snubber is an increase in the probability of structural damage to piping as a result of a seismic or other event initiating dynamic loads. It is therefore required that all hydraulic snubbers required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Because the snubber protection is required only during relatively low probability events, a period of 72 hours is allowed for repairs or replacements. In case a shutdown is required, the allowance of 36 hours to reach a cold shutdown condition will permit an orderly shutdown consistent with standard operating procedures. Since plant startup should not commence with knowingly defective safety related equipment, Specification 3.6.I.4 prohibits startup with inoperable snubbers.

All safety related hydraulic snubbers are visually inspected for overall integrity and operability. The inspection will include verification of proper orientation, adequate hydraulic fluid level and proper attachment of snubber to piping and structures

The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

Experience at operating facilities has shown that the required surveillance program should assure an acceptable level of snubber performance provided that the seal materials are compatible with the operating environment.

Snubbers containing seal material which has not been demonstrated by operating experience, lab tests or analysis to be compatible with the operating environment should be inspected more frequently (every month) until material compatibility is confirmed or an appropriate changeout is completed.

Examination of defective snubbers at reactor facilities and material tests performed at several laboratories (Reference 1) has shown that millable gum polyurethane deteriorates rapidly under the temperature and moisture conditions present in many snubber locations. Although molded polyurethane exhibits greater resistance to these conditions, it also may be unsuitable for application in the higher temperature environments. Data are not currently available to precisely define an upper temperature limit for the molded polyurethane. Lab tests and in-plant experience indicate that seal materials are available, primarily ethylene propylene compounds, which should give satisfactory performance under the most severe conditions expected in reactor installations.

To further increase the assurance of snubber reliability, functional tests should be performed once each refueling cycle. These tests will include stroking of the snubbers to verify proper piston movement, lock-up and bleed. **Ten percent or ten snubbers whichever is less represents an adequate sample for such tests.** Observed failures on these samples should require testing of additional units. **Those snubbers designated in Table 3.6.1 as being in high radiation areas or especially difficult to remove need not be selected for functional tests provided operability was previously verified.**

1) Report H. R. Erickson, Bergen Paterson to K. R. Goller, NRC, October 7, 1974
Subject: Hydraulic Shock Sway Arrestors

NRC Dkt. 50-249

DRESDEN STATION

UNIT 3

TECHNICAL SPECIFICATIONS

Pages iii, 91a, 91b, 91c, 91d, 91e, 99a, and 99b.

TABLE OF CONTENTS (Cont)

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10	Torus Ring Header 1501-24"	483'	277°			X
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16	Torus Ring Header 1501-24"	483'	142°			X
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2	Drywell Recirc. Motor 3B-202	524'	302°	X	X	
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4	Drywell Recirc. Motor 3A-202	524'	148°	X	X	
5	Drywell Recirc. Motor 3A-202	524'	122°	X	X	
6	Drywell Recirc. Motor 3A-202	524'	135°	X	X	
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9	Drywell Recirc. Pump 3B-202	507'	315°	X	X	
10	Drywell Recirc. Pump 3A-202	512'	124°	X	X	
11	Drywell Recirc. Pump 3A-202	512'	146°	X	X	
12	Drywell Recirc. Pump 3A-202	507'	135°	X	X	

Table 3.6.1 (Continued)

Snubber No.	Location	Elevation	Azimuth	Number in High Radiation Area During Shutdown	Snubbers Inaccessible During Normal Operations	Snubbers Accessible During Normal Operations
13	Drywell Recirc. Line 201B-28"	507'	305°	X	X	
14	Drywell Recirc. Line 201A-28"	507'	105°	X	X	
15	Drywell LPCI Line 1506-16"	513'	256°	X	X	
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(cont'd)

3.6 LIMITING CONDITION FOR OPERATION BASES

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The inspection frequency is based upon maintaining a constant level of snubber protection. Thus the required inspection interval varies inversely with the observed snubber failures. The number of inoperable snubbers found during a required inspection determines the time interval for the next required inspection. Inspections performed before that interval has elapsed may be used as a new reference point to determine the next inspection. However, the results of such early inspections performed before the original required time interval has elapsed (nominal time less 25%) may not be used to lengthen the required inspection interval. Any inspection whose results require a shorter inspection interval will override the previous schedule.

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Subject: Hydraulic Shock Sway Arrestors