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Regulatory Docket File

October 1, 1975

DOCKETED USNRC OCT 9 1975 MAIL SECTION CONTROL DESK
RECEIVED OCT 9 1975 U.S. ATOMIC ENERGY COMMISSION Regulatory Mail Section

Mr. Benard C. Rusche, Director
Office of Nuclear Reactor Regulation
U.S. Nuclear Regulatory Commission
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

Dear Mr. Rusche:

Pursuant to 10 CFR 50.59, Commonwealth Edison Company requests amendments to facility licenses DPR-19 and DPR-25. The purpose of these proposed amendments is to provide additional assurance of hydraulic snubber reliability. The amendments are proposed Technical Specifications in conformance with your letter dated July 9, 1975. The proposed changes are indicated on the attached revised Technical Specification pages 91a, 91b, 91c, 91d, 99a, and 99b for both DPR-19 and DPR-25.

For the purpose of entering and applying the schedule in the subject Technical Specification, the following intervals will be utilized.

Dresden Unit 2 was last inspected on September 26, 1975, and no hydraulic snubbers were found inoperable; therefore, the next inspection will be performed in six (6) months ± 25%.

Dresden Unit 3 was last inspected during the just concluded refueling outage effective date August 22, 1975, and two inoperable hydraulic snubbers were found and corrected. Based on this, the next inspection interval will be six (6) months ± 25%.

This change has been reviewed by Onsite and Offsite Review, and it has been determined that no unreviewed safety question exists.

Any questions concerning this request should be directed to this office.

Three (3) signed originals and 57 copies are submitted for your approval.

Att.

Very truly yours,

R L Bolger

R. L. Bolger
Assistant Vice President

SUBSCRIBED and SWORN to
before me this 1st day
of October, 1975.

Nancy M. Hollingsworth
Notary Public

10737

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 shall be visually inspected to verify their operability in accordance with the following schedule:

Regulatory Docket File

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.

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 into groups based on accessibility for inspection during plant operation (accessible and inaccessible) and based on vendor of the snubbers. These groups may be inspected independently according to the above schedule.

3.6 LIMITING CONDITION FOR OPERATION	4.6 SURVEILLANCE REQUIREMENT
	2. Once each refueling cycle, a representative sample of two hydraulic snubbers shall be tested functionally for operability including verification of proper piston movement, lock up and bleed. For each snubber tested, that proves inoperable, an additional snubber shall be tested functionally until no more failures are found. Samples for functional testing shall be chosen so that all snubbers will eventually be tested.
	3. Once each refueling cycle, at least two representative snubbers from a relatively severe environment shall be disassembled and examined for damage and abnormal seal degradation.

Table 3.6-1

Hydraulic Snubbers Required to Protect
Safety Related Systems or Components

Vendor	System	Number of Snubbers	Accessibility
Bergen Patterson	Containment	12	accessible
"	Recirculation	16	inaccessible
"	High Pressure Coolant Injection	5	"
"	Relief Valve (Target Rock)	4	"
"	Feedwater	3	"
"	Reactor Water Cleanup	3	"
"	Low Pressure Coolant Injection	2	"
"	Core Spray	2	"
Grinnell	Isolation Condenser	3	inaccessible

3.6 LIMITING CONDITION FOR OPERATION BASES

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.

The inspection frequency is based upon the use of snubbers which contain seal materials having demonstrated compatibility with the operating environment.

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.

Observed failures on these samples should require testing of additional units. Snubbers in high radiation areas or especially difficult to remove need not be selected for functional tests provided operability was previously verified. To complement the visual external inspections, disassembly and internal examination for component damage and abnormal seal degradation should be performed. The examination of two units, each refueling cycle, selected from relatively severe environments should adequately serve this purpose. **Observation of abnormal wear, breakdown or deterioration will provide a bases for additional inspections.**

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