Docket

DEC 19 1975

Docket No. 50-261

Carolina Power & Light Company
ATTN: J. A. Jones
Senior Vice President
336 Fayetteville Street
Raleigh, North Carolina 27602

Gentlemen:

RE: H. B. ROBINSON-2 PLANT

By letter dated July 8, 1975, we transmitted to you model technical specifications relating to hydraulic snubbers and requested that you submit an application to amend your Technical Specifications to incorporate these model technical specifications. Your letter of August 25, 1975, stated that you did not consider it appropriate to incorporate the proposed changes in the Technical Specifications for H. B. Robinson-2. As a result of comments that we received from you and other licensees and further consideration by ourselves, we have revised the model technical specifications to provide some relaxation and clarification of the requirements. The revisions consist of: (1) deleting the requirement for periodic disassembly and inspection of snubbers, (2) provisions for installing additional safety related snubbers without prior NRC approval; and, in order to clarify the intent of the specifications, (3) specifying that the visual inspection of snubbers should include the fluid reservoir, fluid connections, and any linkage connections to associated piping and anchors, (4) identification of all safety related snubbers rather than non-safety related snubbers, and (5) enlarging the scope of Table 3.6.1 in the model technical specifications to identify safety related snubbers that are (a) in high radiation areas, (b) especially difficult to remove, (c) inaccessible during normal operation, (d) accessible during normal operation. A copy of the revised model technical specifications and bases are enclosed.

Because of the potential adverse effect on public health and safety that could result from a transient or seismic event if one or more snubbers were inoperative, we continue to believe that surveillance requirements, as delineated in the revised technical specifications, are needed to assure the operability of safety related snubbers. The basis for this position is provided in the enclosed model technical specifications. Accordingly, we request that you submit within 30 days of receipt of this letter a request for license amendment in accordance with

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the attached revised model technical specifications, including identifying the safety related snubbers and their accessibility in accordance with Table 3.6.1 of the model technical specifications. The rationale that you use for characterizing a snubber as "especially difficult to remove" or "inaccessible during normal operation" should be stated in your submittal.

Sincerely,

Original signed by

Robert W. Reid, Chief
Operating Reactors Branch # 4
Division of Reactor Licensing

Enclosure:
Model Technical Specifications

cc:
See next page

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cc:

G. F. Trowbridge, Esquire
Shaw, Pittman, Potts, Trowbridge & Madden
Barr Building
910 17th Street, N. W.
Washington, D. C. 20006

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Home and Fifth Avenue
Hartsville, South Carolina 29550

LIMITING CONDITION FOR OPERATION

SURVEILLANCE REQUIREMENT

3.6.1 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 3.6.I.2 through 3.6.I.4 below.

2. From and after the time that a hydraulic snubber is determined to be inoperable, continued reactor operation is 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 cannot be met, an orderly shutdown shall be initiated and the reactor shall be in a cold shutdown condition within 36 hours.

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

4.6.I Hydraulic Snubbers

The following surveillance requirements apply to all hydraulic snubbers listed in Table 3.6.1.

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 limited to, inspection of the hydraulic fluid reservoir, fluid connections, and linkage connections to the piping and anchor to verify snubber operability in accordance with the following schedule:

Number of Snubbers Found Inoperable During Inspection or 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.

LIMITING CONDITION FOR OPERATION	SURVEILLANCE REQUIREMENT
	4.6.I Hydraulic Snubbers (cont'd)
	3. The initial inspection shall be performed within 6 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 6 month inspection interval.
	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 tested.

BASES:

3.6.J and 4.6.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 compatability 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

BASES:

3.6.I and 4.6.I

Hydraulic Snubbers (cont'd)

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

Table 3.6.1

SAFETY RELATED HYDRAULIC SNUBBERS

Snubber No.	Location	Elevation	Snubber in High Radiation Area During Shutdown	Snubbers Especially Difficult to Remove	Snubbers Inaccessible During Normal Operation	Snubbers Accessible During Normal Operation
1	Main Steam Line	953'			x	
2	Main Steam Line	950'			x	
3	RHR	964'				x
4	RHR	964'				
etc.	Recirculatory pipe	922'			x	