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Duke Power Company
ATTN: Mr. William O. Parker, Jr.
Vice President - Steam Production
422 South Church Street
P. O. Box 2178
Charlotte, North Carolina 28242

Gentlemen:

The Commission has issued the enclosed Amendments Nos. 33, 33, and 30 for Licenses Nos. DPR-38, DPR-47 and DPR-55 for the Oconee Nuclear Station, Units Nos. 1, 2 and 3. These amendments consist of changes to the Technical Specifications in response to your request dated August 15, 1975, as supplemented February 19 and June 22, 1976.

The amendments establish additional surveillance and testing requirements for safety related hydraulic shock suppressors.

Copies of the Safety Evaluation and the Federal Register Notice are also enclosed.

Sincerely,

Original signed by

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Enclosures:
1. Amendment No. 33 to DPR-38
2. Amendment No. 33 to DPR-47
3. Amendment No. 30 to DPR-55
4. Safety Evaluation
5. Federal Register Notice

cc w/encl:
See next page

OFFICE ➤	DOR:ORB#1	OELD	DOR:ORB#1			
SURNAME ➤	GZech:lb		ASchwencer			
DATE ➤	9/1/76	9/ /76	9/ /76			

Form AEC-318 (Rev. 9-53) AECM 0240 ☆ U. S. GOVERNMENT PRINTING OFFICE: 1974-526-166

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUKE POWER COMPANY

DOCKET NO. 50-269

OCONEE NUCLEAR STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 33
License No. DPR-38

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1975, as supplemented February 19 and June 22, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 1,3 1976

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUKE POWER COMPANY

DOCKET NO. 50-270

OCONEE NUCLEAR STATION, UNIT NO. 2

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 33
License No. DPR-47

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1975, as supplemented February 19 and June 22, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 13, 1976

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

DUKE POWER COMPANY

DOCKET NO. 50-287

OCONEE NUCLEAR STATION, UNIT NO. 3

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 30
License No. DPR-55

1. The Nuclear Regulatory Commission (the Commission) has found that:

   A. The application for amendment by Duke Power Company (the licensee) dated August 15, 1975, as supplemented February 19 and June 22, 1976, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

   B. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;

   C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;

   D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and

   E. The issuance of this amendment is in accordance with 10 CFR Part 51 of the Commission's regulations and all applicable requirements have been satisfied.

2. Accordingly, the license is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment is effective as of the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors

Attachment:
Changes to the Technical
Specifications

Date of Issuance: October 13, 1976

ATTACHMENT TO LICENSE AMENDMENTS

AMENDMENT NO. 33 TO DPR-38

AMENDMENT NO. 33 TO DPR-47

AMENDMENT NO. 30 TO DPR-55

DOCKETS NOS. 50-269, 50-270 AND 50-287

Revise Appendix A as follows:

Remove page	Insert Pages
4.1-9	3.14-1 4.1-9 4.18-1 4.18-2 4.18-3 4.18-4 4.18-5 4.18-6 4.18-7 4.18-8 4.18-9 4.18-10 4.18-11 4.18-12 4.18-13

3.14 SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to all modes of operation except cold shutdown and refueling shutdown.

Objective

To assure piping integrity in the event of a severe transient or seismic disturbance.

Specification

3.14.1 Except as permitted by 3.14.2 and 3.14.3, the reactor shall not be heated above 200°F unless all shock suppressors listed in Table 4.18-1 are operable.

3.14.2 If a shock suppressor is determined to be inoperable, continued operation is permitted for a period not to exceed 72 hours, unless the suppressor is sooner made operable.

3.14.3 If the requirements of 3.14.1 and 3.14.2 cannot be met, the reactor shall be in a cold shutdown condition within 36 hours.

3.14.4 Suppressors may be added to safety related systems without prior License Amendment to Table 4.18-1 provided that a revision to Table 4.18-1 is included with the next License Amendment request.

Bases

Suppressors 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 suppressor 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 suppressors required to protect the primary coolant system or any other safety system or component be operable during reactor operation.

Since the suppressor protection is required only during 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 3.14.1 prohibits startup with inoperable suppressors.

Table 4.1-2
MINIMUM EQUIPMENT TEST FREQUENCY

	Item	Test	Frequency
1.	Control Rod Movement(1)	Movement of Each Rod	Bi-Weekly
2.	Pressurizer Safety Valves	Setpoint	50% Annually
3.	Main Steam Safety Valves	Setpoint	25% Annually
4.	Refueling System Interlocks	Functional	Prior to Refueling
5.	Main Steam Stop Valves(1)	Movement of Each Stop Valve	Monthly
6.	Reactor Coolant System Leakage(2)	Evaluate	Daily
7.	Condenser Cooling Water System Gravity Flow Test	Functional	Annually
8.	High Pressure Service Water Pumps and Power Supplies	Functional	Monthly
9.	Spent Fuel Cooling System	Functional	Prior to Refueling
10.	High Pressure and Low Pressure Injection System(3)	Vent Pump Casings	Monthly and Prior to Testing
11.	Reactor Coolant System Flow	Validate Flow to be at least: Unit 1 141.30×10^6 lb/hr Unit 2 131.32×10^6 lb/hr Unit 3 131.32×10^6 lb/hr	Once Per Fuel Cycle

(1) Applicable only when the reactor is critical

(2) Applicable only when the reactor coolant is above $200^{\circ}F$ and at a steady-state temperature and pressure.

(3) Operating pumps excluded.

4.18 HYDRAULIC SHOCK SUPPRESSORS (SNUBBERS)

Applicability

Applies to hydraulic shock suppressors used to protect the Reactor Coolant System or other safety-related systems.

Objective

To verify that required hydraulic shock suppressors are operable.

Specification

4.18.1 All hydraulic snubbers listed in Table 4.18-1 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 as a minimum hydraulic fluid reservoir, fluid connections, and linkage connections to the piping and anchor to verify suppressor operability in accordance with the following schedule:

Number of Suppressors Found Inoperable During Last Inspection	Next Required Inspection Interval
0	18 months ± 25%
1	12 months ± 25%
2	6 months ± 25%
3,4	4 months ± 25%
5,6,7	2 months ± 25%
≥8	1 month ± 25%

Note: (1) The required inspection interval shall not be lengthened more than one step per inspection.

Note: (2) Suppressors may be categorized in two groups, "accessible" or "inaccessible," based on their accessibility during reactor operation. These two groups may be inspected independently according to the above schedule.

4.18.2 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 once every month.

4.18.3 A representative sample of 10 hydraulic shock suppressors or approximately 10 percent of the suppressors installed, whichever is less, shall be functionally tested for operability each refueling outage. This test shall include verification of proper piston movement, lockup and bleed. For each suppressor determined to be inoperable, an additional 10 percent or 10 suppressors, whichever is less, shall be tested until no more failures are found or all suppressors have been tested. Suppressors with a rated capacity greater than 50,000 lbs. are exempted from this requirement.

4.18.4 The initial inspection shall be performed within 6 months from the date of issuance of these specifications. For the purpose of entering the schedule of Specification 4.18.1, it shall be assumed that the facilities had been on a 6 month inspection interval.

Bases

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

The inspection frequency is based upon maintaining a constant level of suppressor protection. Thus, the required inspection interval varies inversely with the observed inoperable suppressors. The number of inoperable suppressors 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 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(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 ot 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. Snubbers of rated capacity greater than 50,000 lb. are exempt from the functional testing requirements because of the impracticability of testing such large units.

REFERENCES

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

TABLE 4.18-1

Unit 1 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
1-124	Main Steam Line (01A)			
1-125				
1-127				
1-128				
1-129				
1-130				
1-132				
1-134				
1-135				
1-147				
1-149				
1-151				
1-152			X	
H 11A			X	
H 12A			X	
H 10B			X	
H 11B				
1-941	Main Steam Bypass to Condenser (01A-1)			
1-944				
1-945				
1-3135	Main Steam Supply to Auxiliary Equipment (01A-3)			
1-1305	Main Steam Supply to Emergency Feedwater Pump Turbine (01A-4)			
1-1310				
1-1315				
H 7B	Main Feedwater Line (03)		X	
H 10A			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 1 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
1-1289	Emergency Feedwater Line (03A)			
1-1292				
1-1293				
1-1294				
1-1295				
1-1296				
1-1297				
1-1298				
1-1299				
1-5600				
1-5601				
1-5602				
1-5603				
1-5604				
1-5605				
1-5606				
H 7B			X	
1-4100	Reactor Coolant System (50)		X	
1-4102			X	
1-4104			X	
1-4105			X	
1-4107			X	
1-4109			X	
1-4111			X	
1-4112			X	
1-4113			X	
1-4115			X	
1-4116			X	
1-4117			X	
H 1			X	
H 3			X	
H 4			X	
H 5			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 1 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 7	Reactor Coolant System (50) (Continued)		X	
H 9			X	
H 10			X	
H 11			X	
H 12			X	
H 1A			X	
H 2A			X	
H 3A			X	
H 17A	High Pressure Injection System (51)		X	
H 1E			X	
H 5 (2,NS-EW)	Low Pressure Injection System (53)		X	
H 40C			X	
H 41C			X	
1-2139	Reactor Building Spray System (54)			
1-2149			X	
H 9A			X	
H 9B				
H 5	Pressurizer Relief Valve Discharge (57)		X	
H 6			X	
H 9			X	
H 10			X	
H 11			X	
H 14			X	
H 15			X	
H 17			X	
H 18			X	
H 22			X	
H 26			X	
H 27			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 2 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
2-124	Main Steam Line (01A)			
2-125				
2-127				
2-128				
2-129				
2-130				
2-132				
2-134				
2-135				
2-147				
2-149				
2-151				
2-152				
H 2A			X	
H 8A			X	
H 2B			X	
H 8B			X	
2-941	Main Steam Bypass to Condenser (01A-1)			
2-944				
2-945				
2-3135	Main Steam Supply to Auxiliary Equipment (01A-3)			
2-1309	Main Steam Supply to Emergency Feedwater Turbine (01A-4)			
2-1322				
2-1323				
2-1324				
2-1326				
2-1327				
2-1329				
2-1333				

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 2 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 6A & H 7A	Main Feedwater Line (03)		X	
H 6B			X	
2-1289	Emergency Feedwater Line (03A)			
2-5656				
2-5663				
2-5685				
2-5691			X	
H 1A			X	
H 3A				
H 1B			X	
2-4100	Reactor Coolant System (50)		X	
2-4105			X	
2-4107			X	
2-4109			X	
2-4111			X	
2-4112			X	
2-4113			X	
2-4114			X	
2-4115			X	
2-4117			X	
2-4119			X	
2-4120			X	
H 1			X	
H 3			X	
H 4			X	
H 5			X	
H 7			X	
H 8			X	
H 9			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 2 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 10	Reactor Coolant System (50) (Continued)	—	X	
H 11			X	
H 12			X	
H 1A			X	
H 2A			X	
H 3A			X	
2-4482	High Pressure Injection System (51)			
H 2A			X	
H 1E			X	
2-2086	Low Pressure Injection (53)			
2-2089				
2-4206				
H 3			X	
H 1 C			X	
2-2139	Reactor Building Spray System (54)			
2-2149				
2-2172				
2-2174				
H 9A			X	
H 9B			X	
H 9	Spent Fuel Cooling (56)		X	
H 10			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 2 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 7	Pressurizer Relief Valve Discharge (57)		X	
H 9			X	
H 12			X	
H 13			X	
H 15			X	
H 16			X	
H 17			X	
H 20			X	
H 21			X	
H 23			X	
H 25			X	
H 26			X	

TABLE 4.18-1

Unit 3 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
3-124	Main Steam Line (01A)			
3-125				
3-126				
3-128				
3-129				
3-130				
3-131				
3-132				
3-133				
3-135				
3-147				
3-149				
H 2A			X	
H 8A			X	
H 2B			X	
H 8B			X	
3-956	Main Steam Bypass to Condenser (01A-1)			
3-957				
3-959				
3-960				
3-3109	Main Steam Supply to Auxiliary Equipment (01A-3)			
3-1311	Main Steam Supply to Emergency Feedwater Pump Turbine (01A-4)			
3-1312				
3-1314				
3-1316				
3-1317				
3-1318				
3-1319				
3-1320				

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 3 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 6A & H 7A	Main Feedwater Line (03)		X	
H 6B			X	
3-1274	Emergency Feedwater Line (03A)			
3-1379				
3-1280				
3-5606				
3-5624				
3-5628				
H 1A			X	
3-4100	Reactor Coolant System (50)			
3-4105				
3-4107				
3-4109				
3-4111				
3-4112				
3-4113				
3-4114				
3-4115				
3-4117				
3-4119				
3-4120				
H 1			X	
H 3			X	
H 4			X	
H 5			X	
H 7			X	
H 8			X	
H 9			X	
H 10			X	
H 11			X	
H 12			X	
H 1A			X	
H 2A			X	
H 3A			X	

TABLE 4.18-1

Unit 3 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
3-2214	**High Pressure Injection System (51)**			
H 2A			X	
H 1E			X	
3-4271	**Low Pressure Injection System (53)**			
3-4273				
3-4280				
3-4281				
3-4282				
3-4287				
3-4288				
H 3			X	
H 1C			X	
3-2140	**Reactor Building Spray System (54)**			
3-2165				
3-2174				
H 9A			X	
H 9B			X	
3-5700	**Spent Fuel Cooling System (56)**			
3-5703				
3-5707				
3-5709				
3-5712				
3-5716				
3-5718				
H 9			X	
H 10			X	

Amendments 33, 33 & 30

TABLE 4.18-1

Unit 3 Safety Related Shock Suppressors (Snubbers)

Sketch/Hanger No.	System	Suppressor Especially Difficult to Remove	Suppressor Inaccessible During Normal Operation	Suppressor in High Radiation Area During Shutdown*
H 7	Pressurizer Relief Valve Discharge (57)		X	
H 9			X	
H 12			X	
H 13			X	
H 15			X	
H 16			X	
H 17			X	
H 20			X	
H 21			X	
H 23			X	
H 25			X	
H 26			X	

* Modifications to this Table due to changes in high radiation areas should be submitted to the NRC as part of the next license amendment.

Amendments 33, 33 & 30

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

SUPPORTING AMENDMENT NO. 33 TO FACILITY LICENSE NO. DPR-38

AMENDMENT NO. 33 TO FACILITY LICENSE NO. DPR-47

AMENDMENT NO. 30 TO FACILITY LICENSE NO. DPR-55

DUKE POWER COMPANY

OCONEE NUCLEAR STATION, UNITS 1, 2 AND 3

DOCKETS NOS. 50-269, 50-270 AND 50-287

Introduction

During the summer of 1973, inspections at two reactor facilities revealed a high incidence of inoperable hydraulic shock suppressors (snubbers) manufactured by Bergen Paterson Pipesupport Corporation. As a result of those findings, the Office of Inspection and Enforcement required each operating reactor licensee to immediately inspect all Bergen Paterson snubbers utilized on safety systems and to reinspect them 45 to 90 days after the initial inspection. Snubbers supplied by other manufacturers were to be inspected on a lower priority basis.

The majority of suppressor failures were determined to be caused by the degradation of seal material due to incompatibility with the operating environment and the resultant leakage of hydraulic fluid. Although a seal replacement program has reduced the incidence of failure, problems have continued due to mechanical defects. Our review of the snubber experience at reactor facilities has therefore shown the need for technical specifications requiring snubber operability and surveillance. By letter dated June 30, 1975, we requested that the licensee submit an application to change the Oconee Technical Specifications to be in conformance with sample technical specifications provided. By letter dated December 18, 1975, we advised the licensee of changes to the sample technical specifications. The licensee responded by letters dated August 15, 1975, February 19, and June 22, 1976. During our review of the proposed changes, we found that certain modifications were necessary. These modifications were discussed with the licensee and have been incorporated into the proposed Technical Specifications.

Evaluation

Snubbers are designed to prevent unrestrained pipe motion under dynamic loads as might occur during an earthquake or severe transient while allowing normal thermal movement during startup and shutdown.

The consequence of an inoperable snubber is an increase in the probability of structural damage to piping resulting from a seismic or other postulated event which initiates dynamic loads. It is, therefore, necessary that snubbers installed to protect safety system piping be operable during reactor operation and be inspected at appropriate intervals to assure their operability.

Examination of defective snubbers at reactor facilities has shown that the high incidence of failures observed in the summer of 1973 was caused by severe degradation of seal materials and subsequent leakage of the hydraulic fluid. The basic seal materials used in Bergen Paterson snubbers were two types of polyurethane; a millable gum polyester type containing plasticizers and an unadulterated molded type. Material tests performed at several laboratories (Reference 1) established that the millable gum polyurethane deteriorated rapidly under the temperature and moisture conditions present in many snubber locations. Although the molded polyurethane exhibited 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. The investigation indicated that seal materials are available, primarily ethylene propylene compounds, which should give satisfactory performance under the most severe conditions expected in reactor installations.

An extensive seal replacement program has been carried out at many reactor facilities. Experience with ethylene propylene seals has been very good with no serious degradation reported thus far. Although the seal replacement program has significantly reduced the incidence of snubber failures, some failures continue to occur. These failures have generally been attributed to faulty snubber assembly and installation, loose fittings and connections and excessive pipe vibrations. The failures have been observed in both PWRs and BWRs and have not been limited to units manufactured by Bergen Paterson. Because of the continued incidence of snubber failures, we have concluded that snubber operability and surveillance requirements should be incorporated into the Technical Specifications. We have further concluded that these requirements should be applied to all safety related snubbers, regardless of manufacturer, in all light water cooled reactor facilities.

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

We have developed the attached Technical Specifications and Bases to provide additional assurance of satisfactory snubber performance and reliability. The specifications require that snubbers be operable during reactor operation and prior to startup. Because snubber protection is required only during low probability events, a period of 72 hours is allowed for repair or replacement of defective units before the reactor must be shut down. The licensee will be expected to commence repair or replacement of a failed snubber expeditiously. However, the allowance of 72 hours is consistent with that provided for other safety-related equipment and provides for remedial action to be taken in accordance with 10 CFR 50.36(c)(2). Failure of a pipe, piping system, or a major component would not necessarily result from the failure of a single snubber to operate as designed, and even a snubber devoid of hydraulic fluid would provide support for the pipe or component and reduce pipe motion. The likelihood of a seismic event or other initiating event occurring during the time allowed for repair or replacement is very small. Considering the large size and difficult access of some snubber units, repair or replacement in a shorter time period is not practical. Therefore, the 72 hour period provides a reasonable and realistic period for remedial action to be taken.

An inspection program is specified to provide additional assurance that the snubbers remain operable. 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 longest inspection interval allowed in the Technical Specifications after a record of no snubber failures has been established is nominally 18 months. Experience at operating facilities has shown that the required surveillance program should provide an acceptable level of snubber performance provided that the seal materials are compatible with the operating environment. Snubbers containing seal materials which has not been demonstrated to be compatible with the operating environment are required to be inspected every 31 days until the compatibility is established or an appropriate seal change is completed.

To further increase the level of snubber reliability, the Technical Specifications require functional tests once each refueling cycle. The tests will verify proper piston movement, lock up and bleed.

We have concluded that the proposed additions to the Technical Specifications, as modified, increase the probability of successful snubber performance, increase reactor safety and we therefore find them acceptable.

Environmental Consideration

We have determined that these amendments do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. Having made this determination, we have further concluded that these amendments involve an action which is insignificant from the standpoint of environmental impact and pursuant to 10 CFR §51.5(d)(4) that an environmental statement, negative declaration, or environmental appraisal need not be prepared in connection with the issuance of these amendments.

Conclusion

We have concluded, based on the considerations discussed above, that: (1) because the amendments do not involve a significant increase in the probability or consequences of accidents previously considered and do not involve a significant decrease in a safety margin, the amendments do not involve a significant hazards consideration, (2) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (3) such activities will be conducted in compliance with the Commission's regulations and the issuance of these amendments will not be inimical to the common defense and security or to the health and safety of the public.

DATE: October 13, 1976

UNITED STATES NUCLEAR REGULATORY COMMISSION

DOCKETS NOS. 50-269, 50-270 AND 50-287

DUKE POWER COMPANY

NOTICE OF ISSUANCE OF AMENDMENTS TO FACILITY OPERATING LICENSES

The U.S. Nuclear Regulatory Commission (the Commission) has issued Amendments Nos. 33 , 33 , and 30 to Facility Operating Licenses Nos. DPR-38, DPR-47 and DPR-55 , respectively, issued to Duke Power Company which revised Technical Specifications for operation of the Oconee Nuclear Station Units Nos. 1, 2 and 3, located in Oconee County, South Carolina. The amendments are effective as of the date of issuance.

The amendments establish additional surveillance and testing requirements for safety-related hydraulic shock suppressors.

The application for these amendments complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendments. Prior public notice of these amendments was not required since the amendments do not involve a significant hazards consideration.

The Commission has determined that the issuance of these amendments will not result in any significant environmental impact and that pursuant to 10 CFR Section 51.5(d)(4) an environmental impact statement, negative

declaration, or environmental impact appraisal need not be prepared in connection with issuance of these amendments.

For further details with respect to this action, see (1) the application for amendments dated August 15, 1975, as supplemented February 19 and June 22, 1976 (2) Amendments Nos. 33, 33 , and 30 to Licenses Nos. DPR-38, DPR-47 and DPR-55, respectively, and (3) the Commission's related Safety Evaluation. All of these items are available for public inspection at the Commission's Public Document Room, 1717 H Street, NW., Washington, D.C. 20555 and at the Oconee County Library, 201 South Spring Street, Walhalla, South Carolina 29691. A copy of items (2) and (3) may be obtained upon request addressed to the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, Attention: Director, Division of Operating Reactors.

Dated at Bethesda, Maryland, this 13th day of October 1976.

FOR THE NUCLEAR REGULATORY COMMISSION

A. Schwencer, Chief
Operating Reactors Branch #1
Division of Operating Reactors