



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

OMAHA PUBLIC POWER DISTRICT
DOCKET NO. 50-285

FORT CALHOUN STATION, UNIT NO. 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 105
License No. DPR-40

1. The Nuclear Regulatory Commission (the Commission) has found that:
 - A. The application for amendment by the Omaha Public Power District (the licensee) dated August 19, 1986 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.

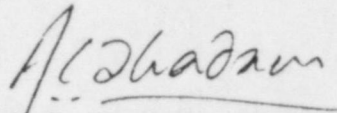
2. Accordingly, Facility Operating License No. DPR-40 is amended by changes to the Technical Specifications as indicated in the attachment to this license amendment, and paragraph 3.B. of Facility Operating License No. DPR-40 is hereby amended to read as follows:

B. Technical Specifications

The Technical Specifications contained in Appendix A, as revised through Amendment No. 105, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. This license amendment is effective 30 days from the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Ashok C. Thadani, Director
PWR Project Directorate #8
Division of PWR Licensing-B

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 26, 1987

ATTACHMENT TO LICENSE AMENDMENT NO. 105

FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-285

Revise Appendix "A" Technical Specifications as indicated below. The revised pages are identified by amendment number and contain vertical lines indicating the area of change.

Remove Pages

2-73
2-74
2-75 through 2-88a
3-77
3-78
3-79
3-79a
5-19

Insert Pages

2-73
2-74
-
3-77
3-78
3-79
3-79a
5-19

2.0 LIMITING CONDITIONS FOR OPERATION

2.18 Shock Suppressors (Snubbers)

Applicability

Operating Modes 1, 2 and 3 (Operating Modes 4 and 5 for snubbers located on systems required operable in those Operating Modes).

Specifications

- (1) All snubbers required to protect the reactor coolant and other safety related systems shall be operable except as noted in 2.18(2) through 2.18(4) below. These snubbers shall be identified as safety-related snubbers.
- (2) With one or more safety-related snubbers inoperable, within 72 hours replace or restore the inoperable snubber(s) to operable status and perform an engineering evaluation per Specification 3.14(3) on the supported component or declare the supported system inoperable and follow the appropriate actions specified in the Technical Specifications for that system.
- (3) A safety-related snubber may be removed for surveillance in accordance with Section 3.14(3) of these Technical Specifications, provided the following conditions are met:
 - (a) A given snubber station shall not be without an operable snubber for more than two hours during surveillance of attendant snubber. A snubber may be replaced by an operable snubber during surveillance and repair.
 - (b) No other snubber station is known to be inoperable.
 - (c) Only one snubber station shall be removed for testing at a time to ensure that no two snubber stations are without an operable snubber during the same time interval.
- (4) Safety-related snubbers may be added, changed, or deleted provided an engineering analysis justifies each change.

2.0 LIMITING CONDITIONS FOR OPERATION
2.18 Shock Suppressors (Snubbers)

Basis

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 or 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 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 low probability events, an inoperable period of 72 hours is allowed for repairs or replacements and an inoperable period of two hours is allowed for surveillance.

3.0 SURVEILLANCE REQUIREMENTS

3.14 Shock Suppressors (Snubbers)

Applicability

This specification applies to all safety-related snubbers.

Specifications

- (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 connections to the piping and anchor to verify snubber operability. In those locations where snubber movement can be manually induced without disconnecting the snubber, verify that the snubber has freedom of movement and is not frozen up. Visual inspections shall be performed in accordance with the following schedule:

Number of Hydraulic Snubbers Found Inoperable During Inspection or During Inspection Interval	Next Required Inspection Interval
0	18 months \pm 25%
1	12 months \pm 25%
2	6 months \pm 25%
3, 4	124 days \pm 25%
5, 6, 7	62 days \pm 25%
\geq 8	31 days \pm 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) At least once per 18 months during shutdown and subject to the conditions below:
- (a) A representative sample (88) of hydraulic snubbers shall be functionally tested either in-place or in a bench test.

3.0 SURVEILLANCE REQUIREMENTS
3.14 Shock Suppressors (Snubbers) (Continued)

- (i) For each hydraulic snubber above 3 which does not meet the functional test acceptance criteria, an additional sample of 22 hydraulic snubbers shall be functionally tested.
 - (ii) For each inoperable hydraulic snubber found during a resample test, an additional 22 hydraulic snubbers will be tested until no additional inoperable hydraulic snubbers are found within a sample or until all hydraulic snubbers have been functionally tested; and
- (b) 10% of the safety-related mechanical snubbers shall be functionally tested either in-place or in a bench test.
- (i) For each mechanical snubber which does not meet the functional test acceptance criteria, an additional sample of 10% of the mechanical snubbers shall be functionally tested.
 - (ii) For each inoperable mechanical snubber found during a resample test, an additional 10% of the mechanical snubbers will be tested until no additional inoperable mechanical snubbers are found within a sample or until all mechanical snubbers have been functionally tested.
- (c) The representative sample selected for functional testing shall include the various configurations, operating environments and the range of size and capacity of snubbers. At least 25% of the snubbers in the representative sample shall include snubbers from any of the following three categories:
1. The first snubber away from each reactor vessel nozzle.
 2. Snubbers within 5 feet of heavy equipment (valve, pump turbine, motor, etc.).
 3. Snubbers within 10 feet of the discharge from a safety relief valve.

Snubbers that are especially difficult to remove or in high radiation zones during shutdown shall also be included in the representative sample. Permanent or other exemptions from functional testing for individual snubbers in these categories may be granted by the Commission only if a justifiable basis for exemption is presented and/or snubber life destructive testing was performed to qualify snubber operability for all design conditions at either the completion of their fabrication or at a subsequent date.

- (d) In addition to the regular sample, snubbers which failed the previous functional test shall be retested during the next test period. If a spare snubber has been installed in place of a failed snubber, then both the failed snubber (if it is repaired and installed in another position) and the spare snubber shall be retested. Test results of these snubbers may not be included for the resampling.

3.0 SURVEILLANCE REQUIREMENTS
3.14 Shock Suppressors (Snubbers) (Continued)

If any snubber selected for functional testing either fails to lockup or fails to move, i.e., is frozen in place, the cause will be evaluated. If the cause is a manufacturer or design deficiency, appropriate action shall be taken for snubbers of the same design subject to the same defect to determine if any more defects exist. This testing requirement shall be independent of the requirements stated above for snubbers not meeting the functional test acceptance criteria.

For any snubber(s) found locked up during normal operation or found inoperable following a seismic event, an engineering evaluation shall be performed on the components which are supported by the snubber(s). The purpose of this engineering evaluation shall be to determine if the components supported by the snubber(s) were adversely affected by the inoperability of the snubber(s) in order to ensure that the supported component remains capable of meeting the designed service. If the engineering evaluation shows the components to be capable of meeting the designed service without the failed snubber, that snubber may be deleted from service per Specification 2.18(4).

(4) Snubber Service Life Monitoring

A record of the service life of each snubber, the date at which the designated service life commences and the installation and maintenance records on which the designated service life is based shall be maintained as required by Specification 5.10.2.m. At least once per 18 months the installation and maintenance record for each snubber shall be reviewed to verify that the indicated service life has not been exceeded or will not be exceeded prior to the next scheduled snubber service life review. If the indicated service life will be exceeded prior to the next scheduled snubber service life review, the snubber service life shall be re-evaluated or the snubber shall be replaced or reconditioned so as to extend its service life beyond the date of the next scheduled service life review. This re-evaluation, replacement or reconditioning shall be indicated in the records.

Basis

All safety-related snubbers shall be operable to ensure that the structural integrity of the reactor coolant system and all other safety-related systems is maintained during and following a seismic or other event initiating dynamic loads. Snubbers excluded from this inspection program are those installed on non-safety-related systems and then only if their failure or failure of the system on which they are installed would have no adverse effect on any safety-related system.

The visual inspection frequency is based upon maintaining a constant level of snubber protection to systems. Therefore the required inspection interval varies inversely with the observed snubber failures and is determined by the

3.0 SURVEILLANCE REQUIREMENTS
3.14 Shock Suppressors (Snubbers) (Continued)

number of inoperable snubbers found during an 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.

When a snubber is found locked up or frozen in place or when a snubber has been inoperable during a seismic event, an engineering evaluation shall be performed, in addition to the determination of the snubber mode of failure. The purpose of the engineering evaluation is to determine if any safety-related component or system has been adversely affected by the inoperability of the snubber. The engineering evaluation shall determine whether or not the snubber mode of failure has imparted a significant effect or degradation on the supported component or system.

To provide assurance of snubber functional reliability, a representative sample of the installed snubbers will be functionally tested during plant shutdowns at 18 month intervals. Selection of a representative sample of hydraulic snubbers according to the expression $35(1+c/2)$ provides a confidence level of approximately 95% that 90% to 100% of the snubbers in the plant will be operable within acceptance limits. The District selected the value of c to be 3. Observed failures of these sample snubbers shall require functional testing of additional units. For each number of snubbers above c which does not meet the functional test acceptance criteria, an additional sample selected according to the expression $35(1+c/2)(2/(c+1))^2(a-c)$ will be functionally tested, where a is the total number of snubbers found inoperable during the functional testing of the representative sample. Functional testing will continued according to the expression $b(35(1+c/a)(2/(c+1))^2)$ where b is the number of snubbers found inoperable in the previous resample, until no additional inoperable snubbers are found within a sample or until all snubbers have been functionally tested.

A "10%" criterion is utilized for mechanical snubbers because of the considerably smaller number of mechanical snubbers.

Hydraulic snubbers and mechanical snubbers will each be treated as a different entity for the above surveillance programs.

The service life of a snubber is evaluated via manufacturer input and information through consideration of the snubber service conditions and associated installation and maintenance records (newly installed snubber, seal replaced, spring replaced, in high radiation area, in high temperature area, etc.). The requirement to monitor the snubber service life is included to ensure that the snubbers periodically undergo a performance evaluation in view of their age and operating conditions. These records will provide statistical bases for future consideration of snubber service life. The requirements for the maintenance of records and the snubber service life review are not intended to affect plant operation.

5.0 ADMINISTRATIVE CONTROLS

- 5.10.2 The following records shall be retained for the duration of the Facility Operating License:
- a. Records of drawing changes reflecting facility design modifications made to systems and equipment described in the Final Safety Analysis Report.
 - b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.
 - c. Records of facility radiation and contamination surveys.
 - d. Records of radiation exposure for all individuals entering radiation control areas.
 - e. Records of gaseous and liquid radioactive material released to the environs.
 - f. Records of transient or operational cycles for those facility components designed for a limited number of transients or cycles.
 - g. Records of training and qualification for current members of the plant staff.
 - h. Records of in-service inspections performed pursuant to these Technical Specifications.
 - i. Records of Quality Assurance activities required by the QA Manual.
 - j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
 - k. Records of meetings of the Plant Review Committee and the Safety Audit and Review Committee.
 - l. Records of Environmental Qualification of Electronic Equipment pursuant to 10 CFR 50.49.
 - m. Records of the service lives of all hydraulic and mechanical snubbers which are covered under the provisions of Section 2.18 of the Technical Specifications, including the date at which the service life commences and associated installation and maintenance records.
 - n. Records of analyses required by the Radiological Environmental Monitoring Program.
- 5.10.3 A complete record of the analysis employed in the selection of any fuel assembly to be placed in Region 2 of the spent fuel racks will be retained as long as that bundle remains in Region 2 (reference Technical Specifications 2.8(12) and 4.8.4).

5.11 Radiation Protection Program

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.