



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. 137
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 December 19, 1990, 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 license 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. 137, are hereby incorporated in the license. The licensee shall operate the facility in accordance with the Technical Specifications.

3. The license amendment is effective as of its date of issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Theodore R. Quay, Director
Project Directorate IV-1
Division of Reactor Projects III, IV, and V
Office of Nuclear Reactor Regulation

Attachment:
Changes to the Technical
Specifications

Date of Issuance: March 7, 1991

ATTACHMENT TO LICENSE AMENDMENT NO. 137

FACILITY OPERATING LICENSE NO. DPR-40

DOCKET NO. 50-

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

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INSERT PAGES

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2.0 LIMITING CONDITIONS FOR OPERATIONS
2.9 Radioactive Effluents (Continued)
2.9.1 Liquid and Gaseous Effluents (Continued)

one or more of the equipment or subsystem(s) identified in the ODCM, a special report, pursuant to Specification 5.9.3, shall be prepared and submitted to the Commission within 30 days. This report shall include the following information:

- (i) Identification of equipment or subsystem(s) not operable and reason for inoperability.
 - (ii) Action(s) taken to restore the inoperable equipment to operable status.
 - (iii) Summary description of action(s) taken to prevent a recurrence.
- d. The hydrogen and oxygen monitors shall be monitoring the in-service gas decay tank during the transfer of waste gases to the gas decay tank and the concentration of hydrogen and oxygen shall be limited to below flammability concentrations. Whenever the monitors are inoperable, transfer of waste gases to a gas decay tank may continue provided grab samples are taken from the gas decay tank and analyzed: (1) every 8 hours during degassing operations, and (2) daily during other operations.
- e. The Auxiliary Building Exhaust Stack gaseous, particulate, and iodine activity monitors may be inoperable provided that 1) releases from a gas decay tank, containment pressure relief line, and the containment purge line are secured, and 2) whenever the Auxiliary Building Exhaust Stack gas or particulate activity monitor is inoperable, appropriate grab samples will be taken and analyzed once per eight (8) hours.
- f. During power operation, the condenser air ejector discharge shall be monitored for gross radioactivity. If this monitor is inoperable, grab samples shall be taken and analyzed daily for principal gamma emitters.
- g. During release of gaseous radioactive wastes from the gaseous waste discharge header or during containment venting to the Auxiliary Building Exhaust Stack, the following conditions shall be met:
- (i) The gas, iodine, and particulate monitors shall be monitoring the Auxiliary Building Exhaust Stack.
 - (ii) At least one exhaust fan shall be in operation.
 - (iii) The effluent control radiation monitors shall be set in accordance with the ODCM to alarm and automatically terminate the releases prior to exceeding the limits specified in 2.9.1(2)a(i) above.
 - (iv) The activity shall be monitored and recorded. The flow rate shall be monitored and recorded, or determined by calculation.

2.0 LIMITING CONDITIONS FOR OPERATIONS
2.9 Radioactive Effluents (Continued)
2.9.1 Liquid and Gaseous Effluents (Continued)

- (v) During the release of gaseous wastes from the containment purge line, a containment gas monitor and a particulate monitor shall monitor the containment, in addition to conforming with (i) through (iv) above.
- h. During releases from the Laboratory and Radioactive Waste Processing Building Exhaust Stack, the following conditions shall be met:
 - (i) The Laboratory and Radioactive Waste Processing Building (LRWPB) Exhaust Stack gas, iodine, and particulate monitors shall be monitoring the LRWPB Exhaust Stack. The effluent control radiation monitors shall be set in accordance with the ODCM to alarm prior to exceeding the limits specified in 2.9.1(2)a(i) above. The gas activity monitor may be inoperable provided that appropriate grab samples be taken and analyzed once per 24 hours. The particulate and iodine activity monitors may be inoperable provided that samples are continuously collected as required in Table 3-12.
 - (ii) The effluent flow rate shall be monitored and recorded, or determined by calculation.

Basis

Releases of radioactivity in liquid wastes within the design objective levels provide reasonable assurance that the resulting annual exposure from liquid effluents will not exceed the limits specified in Appendix I to 10 CFR Part 50. These specifications provide reasonable assurance that the resulting exposure will not exceed 3 mrem to total body or 10 mrem to any organ. At the same time, these specifications permit the flexibility of operation, compatible with considerations of health and safety, to assure that the public is provided a dependable source of power under unusual operating conditions which may temporarily result in releases higher than the design objective levels but still within the concentration limits specified in 10 CFR Part 20.

The design objectives have been developed based on operating experience, calculation procedures based on models and data set forth in Regulatory Guide 1.109, and the evaluation of Fort Calhoun facility in accordance with Appendix I of 10 CFR Part 50 dose design objectives. The design objectives take into account a combination of variables including fuel failures, primary system leakage, primary-to-secondary system leakage and the performance of various radioactive waste treatment systems.

Specification 2.9.1(1)a requires the licensee to limit the concentration of radioactive materials in liquid effluents released from the site to levels specified in 10 CFR Part 20, Appendix B, for unrestricted areas. This specification provides assurance that no member of the general public will be exposed at any time to liquid

2.0 LIMITING CONDITIONS FOR OPERATIONS
2.9 Radioactive Effluents (Continued)
2.9.1 Liquid and Gaseous Effluents (Continued)

Basis (Continued)

containing radioactive materials in excess of limits considered permissible under the Commission's Regulations.

Specification 2.9.1(1)b establishes the frequency of dose calculations in accordance with the ODCM. This specification also establishes the reporting requirements in accordance with Section IV.A of Appendix I to 10 CFR Part 50, in addition to the requirements of Section 5.9 of these Technical Specifications.

Specification 2.9.1(1)c requires the operation of the equipment or subsystem(s) of the radioactive liquid waste system, as identified in the ODCM, to reduce the release of radioactive materials in liquid effluents to as low as reasonably achievable, consistent with the requirements of 10 CFR Part 5; 36a, and General Design Criterion 60 of Appendix A to 10 CFR Part 50. Normal use of the equipment or subsystem(s) in the radioactive liquid waste system provides reasonable assurance that the quantity released will not exceed the design objectives.

- 2.0 LIMITING CONDITIONS FOR OPERATIONS
- 2.9 Radioactive Effluents (Continued)
- 2.9.1 Liquid and Gaseous Effluents (Continued)

Basis (Continued)

requirements in accordance with Section IV.A of Appendix I to 10 CFR Part 50, in addition to the requirements of Section 5.9 of these Technical Specifications.

Specification 2.9.1(2)c requires the operation of equipment or subsystem(s) of the radioactive gaseous waste system, as identified in the ODCM, to reduce the release of radioactive materials in gaseous effluents to as low as reasonably achievable, consistent with the requirements of 10 CFR Part 50.36a, and General Design Criterion 60 of Appendix A to 10 CFR Part 50. Normal use of the equipment or subsystem(s) in the radioactive gaseous waste system provides reasonable assurance that the quantity released will not exceed the design objectives.

Specification 2.9.1(2)d ensures that the concentration of potentially explosive gas mixtures entrained in the gas decay tank(s) will be maintained below the flammability limits of hydrogen and oxygen. Maintaining the concentration of hydrogen and oxygen below their flammability limits with a measurement program provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

Specification 2.9.1(2)e provides assurance that releases from gas decay tank, Auxiliary Building Exhaust Stack, containment pressure relief line, and containment purge line are not made whenever the stack gas, particulate and iodine monitors are inoperable.

Specification 2.9.1(2)f assures that the gross radioactivity, during power operation, is monitored from the condenser air ejector discharge.

Specification 2.9.1(2)g requires operation of suitable equipment to dilute, control, and monitor in order to provide assurance that radioactive materials released in the gaseous effluents are properly controlled and monitored in accordance with the requirements of General Design Criteria 60 and 64 of 10 CFR Part 50, Appendix A.

Specification 2.9.1(2)h provides for releases from the Laboratory and Radioactive Waste Processing Building (LRWPB) whenever the LRWPB Exhaust Stack gas, particulate or iodine activity monitors are inoperable.

TABLE 3-3
 MINIMUM FREQUENCIES FOR CHECKS, CALIBRATIONS AND TESTING
 OF MISCELLANEOUS INSTRUMENTATION AND CONTROLS

<u>Channel Description</u>	<u>Surveillance Function</u>	<u>Frequency</u>	<u>Surveillance Method</u>
1. Primary CEA Position Indication System	a. Check	S	a. Comparison of output data with secondary CEAPIS.
	b. Test	M	b. Test of power dependent insertion limits, deviation, and sequence monitoring systems.
	c. Calibrate	R	c. Physically measured CEIM position used to verify system accuracy. Calibrate CEA position interlocks.
2. Secondary CEA Position Indication System	a. Check	S	a. Comparison of output data with primary CEAPIS.
	b. Test	M	b. Test of power dependent insertion limit, deviation, out-of-sequence, and overlap monitoring systems.
	c. Calibrate	R	c. Calibrate secondary CEA position indication system and CEA interlock alarms.
3. Area, Process, and Post-Accident Radiation Monitors Except Effluent Radiation Monitors ⁽¹⁾	a. Check	D	a. Normal readings observed and internal test signals used to verify instrument operation.
	b. Test	M	b. Detector exposed to remote operated radiation check source or test signal.
	c. Calibrate	R	c. RM-063L, M, and H and RM-064 - One time factory calibration is acceptable provided linearity solid sources are used to check the integrity of the detectors. RM-091A and B - In situ calibration by electronic signal substitution is acceptable for all range decades above 10 R/hr. In situ calibration for at least one decade below 10 R/hr shall be by means of calibrated radiation source. All other monitors - Exposure to known radiation source.

(1) The surveillance requirements for effluent radiation monitors are described under Specification 3.12.1. Effluent radiation monitors are: RM-041, RM-042, RM-043, RM-054A, RM-054B, RM-055, RM-055A, RM-057, RM-060, RM-061, and RM-062. RM-050 and RM-051 are considered effluent radiation monitors when monitoring the Auxiliary Building Exhaust Stack.

3.0 SURVEILLANCE REQUIREMENTS

3.12 Radiological Waste Sampling and Monitoring (Continued)

3.12.1 Liquid and Gaseous Effluents (Continued)

- (iii) Quarterly channel functional tests.
- (iv) Channel calibration at refueling frequency.
- e. The steam generator blowdown effluent flow rate will be calibrated at refueling frequency and visually determined operable daily.
- f. Records shall be maintained of the radioactive concentrations and volume before dilution of each batch of liquid effluent released and of the average dilution flow and length of time over which each discharge occurred. Analytical results shall be submitted to the Commission in accordance with Section 5.9.4.a of these specifications.

(2) Gaseous Effluents

- a. Radioactive gaseous waste sampling and activity analyses shall be performed in accordance with Table 3-12. The results of these analyses shall be used with the calculational methods in the ODCM to assure that the concentration of radioactive materials in unrestricted areas is limited to the values in Specification 2.9.1(2)a.
- b. (i) An Auxiliary Building Exhaust Stack monitor shall have a source check prior to any release of radioactive materials from a gas decay tank or the containment. A monthly source check will be performed during refueling outages if a purge or gas decay tank release is not done during that month.
- (ii) The Auxiliary Building Exhaust Stack gaseous, particulate, and iodine monitors and the Laboratory and Radioactive Waste Processing Building Exhaust Stack gaseous, particulate, and iodine monitors shall have a quarterly channel functional test.
- (iii) The Auxiliary Building Exhaust Stack gaseous, particulate, and iodine monitors and the Laboratory and Radioactive Waste Processing Building Exhaust Stack gaseous, particulate, and iodine monitors shall be calibrated at refueling frequency.
- (iv) The Auxiliary Building Exhaust and the Laboratory and Radioactive Waste Processing Building Exhaust stack flow rates will be calibrated and functionally tested at refueling frequency. The Auxiliary Building Exhaust and the Laboratory and Radioactive Waste Processing Building Exhaust stack radiation monitors flow

rates will be calibrated and functionally tested at refueling frequency. The stack flow rates and radiation monitor flow rates will be determined operable by visual inspection daily.

(v) The Laboratory and Radioactive Waste Processing Building Exhaust Stack gaseous, particulate, and iodine activity monitors shall have a daily channel check and a monthly source check.

c. The condenser air ejector monitor shall have a:

(i) Daily channel check.

(ii) Monthly source check.

TABLE 3-12

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS

Gaseous Source	Sampling and Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (LLD) (4) ($\mu\text{Ci}/\text{ml}$)
A. Gas Decay Tank Releases	Prior to each release	Principal Gamma ⁽⁵⁾ Emitters	1.0 E-04 ⁽¹⁾
B. Containment Purge Releases or Containment Pressure Relief Line Releases	Prior to each release	Principal Gamma ⁽⁵⁾ Emitters	1.0 E-04 ⁽¹⁾
	Prior to each release	H-3	1.0 E-06
C. Condenser Air Ejector Releases	Monthly (3) Monthly	Tritium (H-3) Principal Gamma ⁽⁵⁾ Emitters	1.0 E-06 1.0 E-04 ⁽¹⁾
D. Continuous ⁽²⁾ Auxiliary Building and Laboratory & Radioactive Waste Processing Building Exhaust Stack Releases	Weekly (Charcoal Sample)	I-131	1.0 E-12
	Weekly (2) (Particulates)	Principal Gamma ⁽⁵⁾ Emitters I-131 & Particulates with half-lives greater than 8 days	1.0 E-11
	Monthly Composite	Gross α	1.0 E-11
	Quarterly Composite (Particulates)	Sr-89, Sr-90	1.0 E-11

NOTES:

- (1) For certain mixtures of gamma emitters, it may not be possible to measure radionuclides at levels near their sensitivity limits when other nuclides are present in the sample at much higher levels. Under these circumstances, it will be more appropriate to calculate the levels of such radionuclides using observed ratios with those radionuclides which are measurable.