



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

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION
SUPPORTING AMENDMENT NO. 77 TO FACILITY OPERATING LICENSE NO. DPR-6

CONSUMERS POWER COMPANY

BIG ROCK POINT PLANT

DOCKET NO. 50-155

RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS (RETS)

1.0 INTRODUCTION

To comply with Section V of Appendix I, of 10 CFR Part 50, Consumers Power Company has filed the subject application with the Commission. In general, it contains the plans and proposed technical specification changes related to the RETS. These documents were developed for the purpose of keeping releases of radioactive materials, in unrestricted areas during normal operations, including expected operational occurrences, as low as reasonably achievable. This information was filed with the Commission via letter dated January 7, 1985 as revised March 14, 1985. The proposed technical specifications update those portions of the Technical Specifications addressing radioactive waste management and make them consistent with the current staff positions as expressed in NUREG-0473, "Radiological Effluent Technical Specifications for BWRs." These revised Technical Specifications would reasonably assure compliance, in radioactive waste management, with the provisions of 10 CFR 50.36a, as supplemented by Appendix I to 10 CFR Part 50, with 10 CFR 20.105(c), 106(g), and 405(c); with 10 CFR Part 50, Appendix A, General Design Criteria 60, 63, and 64; and with 10 CFR Part 50, Appendix B.

A Notice of Consideration of Issuance of Amendment to License and Proposed No Significant Hazards Consideration Determination and Opportunity for Hearing related to the requested action was published in the Federal Register on June 4, 1985 (50 FR 23546). No public comments or requests for hearing were received.

2.0 BACKGROUND AND DISCUSSION

2.1 Regulations

10 CFR Part 50, "Domestic Licensing of Production and Utilization Facilities", Section 50.36a, "Technical Specifications on Effluents from Nuclear Power Reactors", provides that each license authorizing operation of a nuclear power reactor will include technical specifications that (1) require compliance with applicable provisions of Part 20.106, "Radioactivity in Effluents to Unrestricted Areas"; (2) require that operating procedures developed for the control of effluents be established and followed; (3) require

that equipment installed in the radioactive waste system be maintained and used; and (4) require the periodic submission of reports to NRC specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents, and quantities of radioactive materials released that are significantly above design objectives, and such other information as may be required by the Commission to estimate maximum potential radiation dose to the public resulting from the effluent releases.

10 CFR Part 20, "Standards for Protection Against Radiation," paragraphs 20.105(c), 20.106(g), and 20.405(c), require that nuclear power plant and other licensees comply with 40 CFR Part 190, "Environmental Radiation Protection Standards for Nuclear Power Operations" and submit reports to the NRC when the 40 CFR Part 190 limits have been or may be exceeded.

10 CFR Part 50, Appendix A - General Design Criteria for Nuclear Power Plants, contains Criterion 60, Control of releases of radioactive materials to the environment; Criterion 63, Monitoring fuel and waste storage; and Criterion 64, Monitoring radioactivity releases. Criterion 60 requires that the nuclear power unit design include means to control suitably the release of radioactive materials in gaseous and liquid effluents, and to handle radioactive solid wastes produced during normal reactor operation, including anticipated operational occurrences. Criterion 63 requires that appropriate systems be provided in radioactive waste systems and associated handling areas to detect conditions that may result in excessive radiation levels and to initiate appropriate safety actions. Criterion 64 requires that means be provided for monitoring effluent discharge paths and the plant environs for radioactivity that may be released from normal operations, including anticipated operational occurrences and postulated accidents.

10 CFR Part 50, Appendix B, establishes quality assurance requirements for nuclear power plants.

10 CFR Part 50, Appendix I, Section IV, provides guides on technical specifications for limiting conditions for operation for light-water-cooled nuclear power reactors licensed under 10 CFR Part 50.

2.2 Standard Radiological Effluent Technical Specifications

NUREG-0473 provides RETS for boiling water reactors which the staff finds to be an acceptable standard for licensing actions. Further clarification of these acceptable methods is provided in NUREG-0133, "Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants." NUREG-0133 describes methods found acceptable to the staff of the NRC for the calculation of certain key values required in the preparation of proposed RETS for light-water-cooled nuclear power plants. NUREG-0133 also provides guidance to licensees in preparing requests for changes to existing RETS for operating reactors. It also describes current staff positions on the methodology for estimating radiation exposure due to the release of radioactive materials in effluents and on the administrative control of radioactive waste treatment systems.

The above NUREG documents address all of the radiological effluent technical specifications needed to assure compliance with the guidance and requirements provided by the regulations previously cited. However, alternative approaches to the preparation of radiological effluent technical specifications and alternative radiological effluent technical specifications may be acceptable if the staff determines that the alternatives are in compliance with the regulations and with the intent of the regulatory guidance.

The standard RETS can be grouped under the following categories:

- (1) Instrumentation
- (2) Radioactive effluents
- (3) Radiological environmental monitoring
- (4) Design features
- (5) Administrative controls.

Each of the specifications under the first three categories is comprised of two parts: the limiting condition for operation and the surveillance requirements. The limiting condition for operation provides a statement of the limiting condition, the times when it is applicable, and the actions to be taken in the event that the limiting condition is not met.

In general, the specifications established to assure compliance with 10 CFR Part 20 standards provide, in the event the limiting conditions for operation are exceeded, that without delay, conditions are restored to within the limiting conditions. Otherwise, the facility is required to effect approved shutdown procedures. In general, the specifications established to assure compliance with 10 CFR Part 50 provide, in the event the limiting conditions for operations are exceeded, that within specified times, corrective actions are to be taken, alternative means of operation are to be employed, and certain reports are to be submitted to the NRC describing these conditions and actions.

The specifications concerning design features and administrative controls contain no limiting conditions for operation or surveillance requirements.

Table 1 indicates the standard RETS that are needed to assure compliance with the particular provisions of the regulations described in Section 1.0.

3.0 EVALUATION

The attached report (TER-C5506-84) was prepared for the staff by Franklin Research Center, as part of a technical assistance contract program. Their report provides a technical evaluation of the compliance of Consumers Power Company's submittal with NRC provided criteria. The staff has reviewed this technical evaluation report, agrees with the evaluation, and incorporates it herein as a part of this safety evaluation.

3.1 Summary

The proposed changes to the RETS for Big Rock Point have been reviewed, evaluated, and found to be in compliance with the requirements of the NRC regulations and with the intent of NUREG-0133 and NUREG-0473 (Big Rock Point is a boiling water reactor) and thereby fulfill all the requirements of the regulations related to RETS.

Several administrative changes were necessary in order to accommodate the new RETS. These affected technical specifications were either relocated and/or reformatted. These changes have also been evaluated in the attached safety evaluation.

4.0 ENVIRONMENTAL CONSIDERATION

This amendment involves a change to a requirement with respect to the installation or use of facility components located within the restricted area as defined in 10 CFR Part 20 and changes to the surveillance requirements. The staff has determined that the amendment involves no significant increase in the amounts, and no significant change in the types, of any effluents that may be released offsite and that there is no significant increase in individual or cumulative occupational radiation exposure. The Commission has previously issued a proposed finding that this amendment involves no significant hazards consideration and there has been no public comment on such finding. Accordingly, this amendment meets the eligibility criteria for categorical exclusion set forth in 10 CFR 51.22(c)(9). Pursuant to 10 CFR 51.22(b) no environmental impact statement or environmental assessment need be prepared in connection with the issuance of this amendment.

5.0 CONCLUSION

The staff has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, and (2) such activities will be conducted in compliance with the Commission's regulations and the issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public.

6.0 ACKNOWLEDGEMENT

This Safety Evaluation has been prepared by Wayne Meinke and Thomas S. Rotella.

Dated: August 26, 1985

Table 1. Relation Between Provisions of the Regulations and the Standard Radiological Effluent Technical Specifications for Pressurized Water Reactors and Boiling Water Reactors

● Indicate the specifications that are needed to assure compliance with the identified provision of the regulations.

Provisions of Title 10 Code of Federal Regulations	Standard Radiological Effluent Technical Specifications						
	Instrumentation	Radioactive Effluents			Rad. Envir. Monitoring	Design Features	Administrative Control
		Liquid	PWR/BWR	Gaseous			
§ 50.36a Technical specifications on effluents from nuclear power reactors	Rad. Liquid Effl. Monitoring						
Remain within limits of § 20.106	Rad. Gas. Effl. Monitoring						
Establish and follow procedures to control effluents		Effluent Concentration	Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gaseous Radwaste Treatment	Gaseous Radwaste Treatment
Maintain and use radioactive waste system equipment		Dose	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Submit reports, semi-annual and other		Liquid Radwaste Treatment	Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
§§ 20.105(c), 20.106(g), 20.405(c) Compliance with 40 CFR 190		Liquid Holdup Tanks	Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Part 50 Appendix A - General Design Criteria			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Criterion 60 - Control of releases of radioactive materials to the environment			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Criterion 61 - Fuel storage and handling and radioactivity control			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Criterion 63 - Monitoring fuel and waste storage			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Criterion 64 - Monitoring radioactivity releases			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Part 50 Appendix B - Quality Assurance Criteria			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Part 50 Appendix I - Guides to Meet "As Low As Is Reasonably Achievable (ALARA)"			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Maintain releases within design objectives			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Establish surveillance & monitoring program to provide data on:			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
(1) quantities of rad. mats. in effluents			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
(2) radiation & rad. mats. in the environment			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
(3) changes in use of unrestricted areas			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Exert best efforts to keep releases "ALARA"			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Submit report if calculated doses exceed the design objective			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Demonstrate conform. to des. obj. by calc. proced.			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment
Part 100			Dose Rate	Dose Noble Gases	Dose I-131, Trit. and Part. Explosive Gas Mixture	Gas Storage Tanks	Ventilation Exhaust Treatment

*Note: Needed to fully implement other specifications.