

AUG 8 1979

REGULATORY DOCKET FILE COPY

Docket Nos. 50-155
and 50-255

Mr. David Bixel
Nuclear Licensing Administrator
Consumers Power Company
212 West Michigan Avenue
Jackson, Michigan 49201

Dear Mr. Bixel:

In your letter dated January 15, 1979, you indicated that on November 13, 1978 Consumers Power Company (CPC) submitted a license amendment application for Big Rock Point in response to our July 11, 1978 request. You further indicated that CPC has reviewed their November 13, 1978 submittal and concluded that no changes were necessary to incorporate the additional issues discussed in our November 15, 1978 letter providing guidance on Radiological Effluent Technical Specifications.

In a letter from D. Hoffman dated March 12, 1979, you indicated that on June 4, 1976 CPC submitted a license amendment application for Palisades to incorporate the 10 CFR Part 50, Appendix I implementation requirements into your current Technical Specifications. You further indicated that you had reviewed your June 4, 1976 submittal and concluded that although the dose pathway had changed for airborne effluents (for which an update was attached to the March 12, 1979 letter), the objectives of the proposed change dated June 4, 1976 remained the same. The March 12, 1979 letter stated that the proposed change incorporated requirements requested by our July 11, 1978 letter, but made no reference to our November 15, 1978 letter.

In the letter from B. Grimes to all Power Reactor Licensees dated November 15, 1978, we indicated that the format for the revised Technical Specifications may be that presently used for your existing Appendix A Technical Specifications provided all applicable areas of the model Technical Specifications are acceptably addressed.

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AUG 8 1979

Mr. David Bixel

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We have reviewed your November 13, 1978 submittal for Big Rock Point and the March 12, 1979 submittal for Palisades and find that these proposed amendments are not responsive to our request since they do not cover all the items contained in the model Radiological Effluent Technical Specifications forwarded to you in our letter of November 15, 1978.

Enclosure 1 to this letter lists some of the major items contained in the model Radiological Effluent Technical Specifications and not acceptably addressed in your submittals.

By letter of July 18, 1979, we provided you with the latest revisions to model Radiological Effluent Technical Specifications. We request that you submit revised Radiological Effluent Technical Specifications which acceptably address all applicable areas of our model and specifically address those items listed in Enclosure 1 to this letter. We request that your revisions be submitted by September 14, 1979.

Should you need any additional guidance, we are available to meet with you.

Sincerely,

"Original Signed by
Richard D. Silver"

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Operating Reactors

for

Enclosures:

- 1. Request for Additional Information
- 2. ODCM Contents
- 3. PCP Contents

cc w/enclosures:
See next page

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Mr. David Bixel

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August 8, 1979

cc

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REQUEST FOR ADDITIONAL INFORMATIONBIG ROCK POINT AND PALISADES PLANTSRADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS

Listed below are some of the major items contained in the model Radiological Effluent Technical Specifications and not acceptably addressed in the CPC submittals.

- 1) Proposed specifications that address the maintenance and use of radwaste treatment equipment (liquid, gaseous and solid) pursuant to 10 CFR 50.36a.
- 2) Proposed specifications that address the action to be taken when radwaste treatment equipment and instrumentation becomes inoperable.
- 3) An Offsite Dose Calculation Manual containing the methodology to be used to assure compliance with ALARA (10 CFR 20.1 and 10 CFR 50.36a) and address 40 CFR 190. (See Enclosure 2 on ODCM contents).
- 4) Proposed specifications that address solidification of wet solid radwaste and the packaging of dry solid radwaste. To assure adequate solidification procedures, a Process Control Program is to be provided. (See Enclosure 3 on PCP contents).
- 5) Figures that define the site boundary for radioactive liquid and gaseous effluents.
- 6) Details on the site meteorological station providing data used in determining dose impact to real individuals.
- 7) Proposed sampling and analysis program for all site effluent release points having the potential for radioactive releases, the sampling and analysis frequency, the type of analysis, and the nuclide LLD capability.
- 8) The method to be used in calculating alarm and trip set points on radioactive effluent monitoring systems in the ODCM.

GENERAL CONTENTS OF
THE OFFSITE DOSE CALCULATION MANUAL
(ODCM*)

ENCLOSURE 2

Section 1 - Set Points

Provide the equations and methodology to be used at the station or unit for each alarm and trip set point on each effluent release point according to the Specifications 3.3.3.8 and 3.3.3.9. The instrumentation for each alarm and trip set point, including radiation monitoring and sampling systems and effluent control features, should be identified by reference to the FSAR (or Final Hazard Summary). This information should be consistent with the recommendations of Section I of Standard Review Plan 11.5, NUREG-75/087, (Revision 1). If the alarm and/or trip set point value is variable, provide the equation to determine the set point value to be used, based on actual release conditions, that will assure that the Specification is met at each release point; and provide the value to be used when releases are not in progress. If dilution or dispersion is used, state the on-site equipment and measurement method used during release, the site related parameters and the set points used to assure that the Specification is met at each release point. The fixed and variable set points should consider the radioactive effluent to have a radionuclide distribution represented by normal and anticipated operational occurrences.

Section 2 - Liquid Effluent Concentration

Provide the equations and methodology to be used at the station or unit

*The format for the ODCM is left up to the licensee and may be simplified by tables and grid printout. Each page should be numbered and indicate the facility approval and effective date.

for each liquid release point according to the Specification 3.11.1.1. For systems with continuous or batch releases, and for systems designed to monitor and control both continuous and batch releases, provide the assumptions and parameters to be used to compare the output of the monitor with the liquid concentration specified. State the limitations for combined discharges to the same release point. In addition, describe the method and assumptions for obtaining representative samples from each batch and the use of previous post-release analyses or composite sample analyses to meet the Specification.

Section 3 - Gaseous Effluent Dose Rate

Provide the equations and methodology to be used at the station or unit for each gaseous release point according to Specification 3.11.2.1. Consider the various pathways, release point elevations, site related parameters and radionuclide contribution to the dose impact limitation.

Provide the equations and assumptions used, stipulating the pathway, receptor location and receptor age. Provide the dose factors to be used for the identified radionuclides released. Provide the annual average dispersion values (X/Q and D/Q), the site specific parameters and release point elevations.

Section 4 - Liquid Effluent Dose

Provide the equations and methodology to be used at the station or unit for each liquid release point according to the dose objectives given in Specification 3.11.1.2. The section should describe how the dose contributions are to be calculated for the various pathways and release points,

the equations and assumptions to be used, the site specific parameters to be measured and used, the receptor location by direction and distance, and the method of estimating and updating cumulative doses due to liquid releases. The dose factors, pathway transfer factors, pathway usage factors, and dilution factors for the points of pathway origin, etc., should be given, as well as receptor age group, water and food consumption rate and other factors assumed or measured. Provide the method of determining the dilution factor at the discharge during any liquid effluent release and any site specific parameters used in these determinations.

Section 5 - Gaseous Effluent Dose

Provide the equations and methodology to be used at the station or unit for each gaseous release point according to the dose objectives given in Specifications 3.11.2.2 and 3.11.2.3. The section should describe how the dose contributions are to be calculated for the various pathways and release points, the equations and assumptions to be used, the site specific parameters to be measured and used, the receptor location by direction and distance, and the method to be used for estimating and updating cumulative doses due to gaseous releases. The location, direction and distance to the nearest residence, cow, goat, meat animal, garden, etc., should be given, as well as receptor age group, crop yield, grazing time and other factors assumed or measured. Provide the method of determining dispersion values (X/Q and D/Q) for releases and any site specific parameters and release point elevations used in these determinations.

Section 6 - Projected Doses

For liquid and gaseous radwaste treatment systems, provide the method of projecting doses due to effluent releases for the normal and alternate pathways of treatment according to the specifications, describing the components and subsystems to be used.

Section 7 - Operability of Equipment

Provide a flow diagram(s) defining the treatment paths and the components of the radioactive liquid, gaseous and solid waste management systems that are to be maintained and used, pursuant to 10 CFR 50.36a, to meet Technical Specifications 3.11.1.3, 3.11.2.4 and 3.11.3.1. Subcomponents of packaged equipment can be identified by a list. For operating reactors whose construction permit applications were filed prior to January 2, 1971, the flow diagram(s) shall be consistent with the information provided in conformance with Section V.B.1 of Appendix I to 10 CFR Part 50. For OL applications whose construction permits were filed after January 2, 1971, the flow diagram(s) shall be consistent with the information provided in Chapter 11 of the Final Safety Analysis Report (FSAR) or amendments thereto.

Section 8 - Sample Locations

Provide a map of the Radiological Environmental Monitoring Sample Locations indicating the numbered sampling locations given in Table 3.12-1. Further clarification on these numbered sampling locations can be provided

by a list, indicating the direction and distance from the center of the building complex of the unit or station, and may include a descriptive name for identification purposes.

SOLID WASTE MANAGEMENT SYSTEMS

Standard Review Plan 11.4⁽¹⁾ and Branch Technical Position ETSB 11-3⁽²⁾ require that each applicant for an operating license provide a detail description of a Process Control Program (PCP) to assure that the solid waste system will perform its intended function and that the product produced by this system contains no free water* and is a monolithic solid.

Specification 3.11.3.1 of the model Radiological effluent Technical Specifications⁽³⁾ require that the solid radwaste system be maintained and used in accordance with the PCP. NUREG-0133⁽⁴⁾ requires that at the time an applicant/licensee submits proposed Radiological Effluent Technical Specifications that he submit the PCP for NRC review. NUREG-0133 further requires that the PCP be documented in the plant operating procedures.

To meet this commitment, the staff has prepared a general description of a PCP giving the essential points that should be covered by the applicant/licensee in making this submittal. Due to variations in system design and operation, the applicant/licensee should not interpret this outline to be all inclusive. The PCP is plant specific and must be established on a case-by-case basis since waste characteristics will vary from plant to plant.

*Free water is defined as uncombined water not bound by the solid matrix.

PROCESS CONTROL PROGRAM

A "Process Control Program" (PCP) for a solid radwaste system shall be a manual detailing the program of sampling analysis and formulation determination by which solidification of radioactive wastes from liquid systems is assured. The PCP shall provide assurance that the system is operated as designed and produces a final product that contains no free water and has completely solidified all waste. If properties of the final product have been determined by the manufacturer the PCP shall also assure that the solidified waste products exhibit those physical and chemical properties (leachability, strength, flammability, etc.) that are characteristic of the product as demonstrated by the manufacturer for producing an acceptable solidified waste product. The PCP shall identify interfaces with other plant systems (e.g., liquid and gaseous radwaste systems), identify equipment (interlocks, alarms, monitors, etc.) which are required to be functional before processing can commence, identify administrative controls or equipment features to assure that operating procedures will be followed, identify the sampling requirements prior to processing and identify the various processing steps and process parameters which provide boundary conditions within which the solid radwaste system shall be operated. Depending upon the type of waste (bead resins, powdered resins, filter sludge, evaporator concentrates, sodium sulfate solutions, boric acid solutions, etc.) to be solidified and the kind of solidification agent (urea formaldehyde, cement, cement with sodium silicate, asphalt, polyester, etc.) employed, the process parameters shall include but are not limited

to, the type of waste, requirements for sampling prior to processing, pH, oil content, water content, temperature, ratio of solidification agent to influent waste and the ratio of solidification agent to chemical additive.

NOTE:

For operating reactors which have systems installed that are not capable of solidifying the categories of "wet" waste as defined in SRP 11.4, BTP-ETSB 11-3 or NUREG-0133 the licensee shall define the limitations of his present system and provide a Process Control Program to cover the waste that can be processed by his existing system. The licensee shall identify those wastes which cannot be solidified and indicate the method of packaging currently being employed (dewatered resins, vermiculite, etc.). In addition, the licensee shall provide a schedule for upgrading his solid waste system to provide the capability to process all types of "wet" wastes as defined in these reference documents.

REFERENCES

- (1) Standard Review Plan 11.4, Revision 1, Solid Waste Management Systems, NUREG-75/087.
- (2) Branch Technical Position - ETSB 11-3, Revision 1, Design Guidance for Solid Radioactive Waste Management Systems Installed in Light-Water-Cooled Nuclear Power Reactor Plants, NUREG-75/087.
- (3) Draft Radiological Effluent Technical Specifications for PWRs and BWRs, NUREGs 0472 and 0473.
- (4) Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, NUREG-0133.