Docket
50-3

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

January 18, 1979

GL-79-3

ALL POWER REACTOR LICENSEES

Gentlemen:

By letter dated November 15, 1978, you were requested to submit Radiological Effluent Technical Specifications and provide for NRC approval your Offsite Dose Calculation Manual (ODCM). During the recent seminars held at the NRC Regional Offices, we received numerous requests for additional guidance on the content for the ODCMs. The attachment to this letter provides guidance on the general contents of the ODCM to aid you in its preparation.

Sincerely,

Brian K. Grimes, Assistant Director
for Engineering and Projects
Division of Operating Reactors

Enclosure:
General Contents of the
ODCM

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GENERAL CONTENTS OF THE ODCM*

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. Provide the alarm and control location, the monitor description, location, power source, scale, range and identification number, and the effluent isolation control device, its location, power source and identification number. If the set point value is variable, provide the equation to be used to predetermine the set point value that will assure that the Specification is met at each release point, and the value to be used when releases are not in progress. If dilution or dispersion is used, describe 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, including any administrative controls applicable at the station or unit. The fixed and predetermined set points should consider the radioactive effluent to have a radionuclide distribution represented by normal and anticipated operational occurrences. Other features, such as surveillance requirements and the calibration method, should be addressed.

Section 2 - Liquid Effluent Concentration

Provide the equations and methodology to be used at the station or unit for each liquid release point according to the Specification 3.11.1.1. For continuous and/or batch releases, the assumptions used for manual and automatic termination of releases should be provided. For batch releases, the calculational methods, equations and assumptions used, together with the pre-release and post-release analyses should be provided. Other features, such as surveillance requirements, sampling and analysis program, detection limitations and representative sampling should be addressed.

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. Other features, such as surveillance requirements, sampling and analysis program, detection limitations and representative sampling should be addressed.

*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.

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 Specifications 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. Other features such as surveillance requirements, sampling and analysis program, detection limitations and representative sampling should be addressed.

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 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 short-term and long-term releases and any site specific parameters and release point elevations used in these determinations. Also, provide the criteria for determining short and long term releases. Other features such as surveillance requirements, sampling and analysis program, detection limitations and representative sampling should be addressed.

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 discriptive name for identification purposes.

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