DISTRIBUTION OF LETTER TO OL APPLICANTS

Distribution to be completed by Secretaries:

Docket File(s)
NRC PDR
Local PDR
O. D. Parr
LPM
M. Rushbrook
LWR #3 File
Attorney, OELD
M. Service

Distribution to be completed by M. Service:

Central Files - Form Letter File
R. Boyd
D. Ross
D. Vassallo
M. Williams
R. DeYoung
R. Vollmer
J. Collins
I&E

BCC: ACRS (16)
NSIC
TIC

7903080031

FEB 14 1979

Docket No. 50-339

GL-79-6

Mr. W. L. Proffitt
Senior Vice President - Power
Operations
Virginia Electric & Power Company
P. O. Box 26666
Richmond, Virginia 23261

Dear Mr. Proffitt:

SUBJECT: CONTENTS OF THE OFFSITE DOSE CALCULATION MANUAL
(North Anna Power Station, Unit 2)

The Radiological Effluent Technical Specifications for PWR and BWR facilities issued in November 1978, require you to provide an Offsite Dose Calculation Manual (ODCM) with your proposed Technical Specifications implementing 10 CFR 50.36a and other Federal Regulations. The enclosure to this letter describes the staff's recommendations for the general contents of the ODCM. The format for the ODCM is left to your discretion.

Sincerely,

Original Signed by
O. D. Parr

Olan D. Parr, Chief
Light Water Reactors Branch No. 3
Division of Project Management

Enclosure:
General Contents of
the ODCM

cc w/enclosure:
See next page

MA-4
GD

OFFICE	LWR #3:LA	LWR #3:LPM	LWR #3:BC			
SURNAME	MRushbrook/LM	CADromerick	ODParr			
DATE	2/9/79	2/9/79	2/9/79			

NRC FORM 318 (9-76) NRCM 0240 ☆ U.S. GOVERNMENT PRINTING OFFICE: 1976 — 626-624

cc: Mrs. James C. Arnold
P. O. Box 3951
Charlottesville, Virginia 22903

Mr. Anthony Gambaradella
Office of the Attorney General
11 South 12th Street - Room 308
Richmond, Virginia 23219

Richard M. Foster, Esq.
211 Stribling Avenue
Charlottesville, Virginia 22903

Michael W. Maupin, Esq.
Hunton, Williams, Gay & Gibson
P. O. Box 1535
Richmond, Virginia 23212

Mrs. June Allen
412 Owens Drive
Huntsville, Alabama 35801

Mr. James Torson
501 Leroy
Socorro, New Mexico 87801

Mrs. Margaret Dietrich
Route 2, Box 568
Gordonsville, Virginia 22942

William H. Rodgers, Jr., Esq.
Georgetown University Law Center
600 New Jersey Avenue, N.W.
Washington, D. C. 20001

Mr. Peter S. Hepp
Executive Vice President
Sun Shipping & Dry Dock Company
P. O. Box 540
Chester, Pennsylvania 19013

Mr. R. B. Briggs
Associate Director
110 Evans Lane
Oak Ridge, Tennessee 37830

John J. Runzer, Esq.
Pepper, Hamilton & Scheetz
123 South Broad Street
Philadelphia, Pennsylvania 19109

Clarence T. Kipps, Jr., Esq.
1700 Pennsylvania Avenue,. N.W.
Washington, D. C. 20006

Carroll J. Savage, Esq.
1700 Pennsylvania Avenue, N. W.
Washington, D. C. 20006

Mr. James C. Dunstan
State Corporation Commission
Commonwealth of Virginia
Blandon Building
Richmond, Virginia 23209

Alan S. Rosenthal, Esq.
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Michael C. Farrar, Esq.
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dr. John H. Buck
Atomic Safety and Licensing
Appeal Board
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Atomic Safety and Licensing
Board Panel
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

cc: Mr. Michael S. Kidd
U. S. Nuclear Regulatory Commission
P. O. Box 128
Spotslvania, Virginia 22553

Dr. Paul W. Purdom
Department of Civil Engineering
Drexel University
Philadelphia, Pennsylvania 19104

Dr. Lawrence R. Quarles
Apartment No. 51
Kendal-at-Longwood
Kennett Square, Pennsylvania 19348

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

*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.

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.

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.