

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT

SURRY POWER STATION

(July 1, 1984 Through December 31, 1984)

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## FORWARD

This report is submitted as required by Appendix A to Operating License No.'s DPR-32 and DPR-37, Technical Specifications for Surry Power Station, Units 1 and 2, Virginia Electric and Power Company, Docket No.'s 50-280, 50-281, Section 6.6.3.C.

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FOR THE

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## 1.0

Purpose and Scope

The Radioactive Effluent Release Report includes a summary of the quantities of radioactive liquid and gaseous effluents and solid waste as outlined in Regulatory Guide 1.21, "Measuring, Evaluating, and Reporting Radioactivity in Solid Wastes and Releases of Radioactive Materials in Liquid and Gaseous Effluents from Light-Water-Cooled Nuclear Power Plants", Revision 1, June 1974, with data summarized on a quarterly basis following the format of Tables 1, 2 and 3 of Appendix B thereof. The report submitted within 60 days after January 1 of each year includes an assessment of radiation doses to the maximum exposed member of the public due to radioactive liquid and gaseous effluents released from the site during the previous calendar year. The report also includes a list of unplanned releases during the reporting period.

As required by Technical Specification 6.8B, changes to the ODCM for the time period covered by this report are included. Information is provided to support the changes along with a package of those pages of the ODCM changed.

This report includes changes to the PCP with information and documentation necessary to support the rationale for the changes as required by Technical Specification 6.8A.

Major changes to the radioactive liquid, gaseous and solid waste treatment systems are reported as required by Technical Specification 6.9. Information to support the reason for the change and a summary of the 10CFR50.59 evaluation are included. In lieu of reporting major changes in this report, major changes to the radioactive waste treatment systems may be submitted as part of the annual FSAR update.

As required by Technical Specification 3.7E.2, a list and explanation for the inoperability of radioactive liquid and/or gaseous effluent monitors is provided in this report.

## 2.0

Discussion

The basis for the calculation of the percent of technical specification for the critical organ in Table 1A of Attachment 1, is Technical Specification 3.11B.1.a (ii). Technical Specification 3.11B.1.a (ii) requires that the dose rate for iodine - 131, for tritium, and for all radionuclides in particulate form with half lives greater than 8 days shall be less than or equal to 1500 mRem/yr to the critical organ at and beyond the site boundary. The critical organ is the child's thyroid, inhalation pathway.

The basis for the calculation of percent of technical specification for the total body and skin in Table 1A of Attachment 1, is Technical Specification 3.11B.1.a (i). Technical Specification 3.11B.1.a (i) requires that the dose rate for noble gases to areas at or beyond site boundary shall be less than or equal to 500 mRem/yr to the total body and less than or equal to 3000 mRem/yr to the skin.

The basis for the calculation of the percent of technical specification in Table 2A of Attachment 1, is Technical Specification 3.11A.1.a. Technical Specification 3.11A.1.a states that the concentration of radioactive material released in liquid effluents to unrestricted areas shall be limited to the concentrations specified in 10CFR20, Appendix B, Table II, Column 2 for radionuclides other than dissolved or entrained noble gases. For dissolved or entrained noble gases, the concentration shall be limited to  $2 \times 10^{-4}$  microcuries/ml.

Percent of technical specification calculations are based on the total gaseous or liquid effluents released for that respective quarter.

The annual and quarterly doses, as reported in Attachment 2, were calculated according to the methodology presented in the ODCM. The beta and gamma air doses due to noble gases released from the site were calculated at site boundary. The maximum exposed member of the public from the release of airborne iodine - 131, tritium and all radionuclides in particulate form with half lives greater than 8 days, is defined as an infant, exposed through the grass-cow-milk pathway, with the critical organ being the thyroid. The maximum exposed member of the public from radioactive materials in liquid effluents in unrestricted areas is defined as an adult, exposed by either the invertebrate or fish pathway, with the critical organ being either the thyroid or GI-LLL. The total body dose was also determined for this individual.

Unplanned releases presented in Attachment 7 are defined in Technical Specification 6.6.3.C as those gaseous releases exceeding Technical Specification 3.11.B.1.a and those liquid releases exceeding Technical Specification 3.11.A.1.a.

### 3.0 Supplemental Information

Technical Specification 3.11.D.1.d requires the identification of the cause for the unavailability of milk or leafy vegetation samples, required by Technical Specification, Table 4.9-3, and identification for obtaining replacement samples. All milk and leafy vegetation samples required by Table 4.9-3 were available for collection during the period of July 1, 1984 through December 31, 1984.

Technical Specification 3.11.D.2.b requires the identification of new sample locations determined with the Land Use Census as yielding a calculated dose or dose commitment greater than the values being calculated in Technical Specification 4.9.C. No new sample location(s) that may yield a greater dose or dose commitment that are currently used in Technical Specification 4.9.C, were identified in the Land Use Census.

Attachment #1 contains the Effluent Release Data for the period of July 1, 1984 through December 31, 1984, with data summarized following the format of Regulatory Guide 1.21, Table 1, 2 and 3 of Appendix B. Attachment #1 also contains the Effluent Release Data for the period of January 1, 1984 through June 30, 1984 with data summarized in the format of Safety Guide 1.21. The fraction of radioactive airborne releases for the first six months of 1984, considered to be released from a mixed mode elevation, are tabulated in Attachment #1. This information is supplied to provide data for calculation of first and second quarter doses as listed in Attachment #2.

The submission of the Effluent Release Data from the first six months of 1984, complies with Technical Specifications in effect prior to July 1, 1984. All future Semi-Annual Effluent Release Reports will provide data only for the previous six month period.

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