

V0917002

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OFFSITE DOSE CALCULATION MANUAL - TABLE OF CONTENTS

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1.0 RECORD OF REVISION

<u>Revision No.</u>	<u>Date</u>	<u>Reason for Revision</u>
1	December - 1998	Corrected typo in reference to 10CFR50.36a on page 2, paragraph 1.
2	October - 2000	Incorporated Tech Spec 6.8.A.1, 6.8.A.2, and 6.8.A.3 relating to ODCM control and the relocated definitions into document.

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2.0 OFF-SITE DOSE CALCULATION MANUAL (ODCM) INTRODUCTION

2.1 ODCM Description and Control

- 2.1.1 In accordance with T.S.6.8.A.1, the ODCM contains the methodology and parameters used in the calculation of off-site doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm and trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program.
- 2.1.2 In accordance with T.S.6.8.A.2, the ODCM also contains the radioactive effluent controls and radiological environmental monitoring activities and descriptions of the information that should be included in the Radiological Environmental Operating Program report and Radioactive Effluent Release reports required by 10CFR50, Appendix I, and 10CFR50.36a.

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2.2 Licensee Initiated Changes to the ODCM

- 2.2.1 In accordance with T.S.6.8.A.3, licensee initiated changes to the ODCM **SHALL** be documented and records of reviews performed **SHALL** be retained. This documentation **SHALL** contain:
- A. Sufficient information to support the change(s) together with the appropriate analyses or evaluations justifying the change(s), and
 - B. A determination that the change(s) maintain the levels of radioactive effluent control required by 10CFR20.1302, 40CFR190, 10CFR50.36a, and 10CFR50, Appendix I, and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- 2.2.2 Changes **SHALL** become effective after review and approval by the Plant Manager.
- 2.2.3 Changes **SHALL** be submitted to the NRC in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Radioactive Effluent Release Report for the period of the report in which any change in the ODCM was made. Each change **SHALL** be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed, and **SHALL** indicate the date (i.e., month and year) the change was implemented.

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2.3 Definitions

2.3.1 Abnormal Release

An unplanned or uncontrolled release of radioactive material from the plant or a gaseous release where the effluent release rate significantly exceeds an established normal release rate. A release which results from procedural or equipment inadequacies, or personnel errors, that could indicate a deficiency.

2.3.2 Action

ACTION SHALL be that part of a control which prescribes required actions to be taken under designated conditions within specified completion times.

2.3.3 Batch Release

A BATCH RELEASE is a discharge of liquid or gaseous radioactive effluent of a discrete volume. Prior to sampling for analysis, each batch **SHALL** be isolated and thoroughly mixed to assure representative sampling.

2.3.4 Instrument Calibration

An instrument calibration means the adjustment of an instrument signal output so that it corresponds, within acceptable range, accuracy, and response time to a known value(s) of the parameter which the instrument monitors. Calibration **SHALL** encompass the entire instrument including actuation, alarm or trip.

2.3.5 Sensor Check

A qualitative determination of operability by observation of sensor behavior during operation. This determination **SHALL** include, where possible, comparison with other independent sensor measuring the same variable.

2.3.6 Instrument Functional Test

An instrument functional test means the injection of a simulated signal into the primary sensor to verify proper instrument channel response, alarm, and/or initiating action.

2.3.7 Composite Sample

A COMPOSITE SAMPLE is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.

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2.3.8 Dose Equivalent I-131

DOSE EQUIVALENT I-131 **SHALL** be that concentration of I-131 ($\mu\text{Ci}/\text{gram}$) that alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. The thyroid dose conversion factors used for this calculation **SHALL** be those listed in Table III of TID-14844, "Calculation of Distance Factors for Power and Test Reactor Sites" or in NRC Regulatory Guide 1.109, Revision 1, October 1977.

2.3.9 Exclusion Area Boundary

The EXCLUSION AREA BOUNDARY is the same as the Site Boundary described in ODCM-03.01 Figure 1. The EXCLUSION AREA is the area encompassed by the EXCLUSION AREA BOUNDARY.

2.3.10 Offgas Treatment System

The OFFGAS TREATMENT SYSTEM **SHALL** be any system designed and installed to reduce radioactive effluents by collecting primary coolant system offgas from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to the environment.

2.3.11 Liquid Radwaste Treatment System

The LIQUID RADWASTE TREATMENT SYSTEM **SHALL** be any system designed and installed to reduce radioactive effluents by holdup or collecting radioactive materials by means of filtering, evaporation, ion exchange or chemical reaction for the purpose of reducing the total radioactivity prior to release to the environment.

2.3.12 Long Term Release

"Long-term" refers to releases that are generally continuous and stable in release rate with some anticipated variation (i.e., <50%, based on a running monthly average) in release rate, such as is experienced in normal ventilation system effluents at nuclear power plants. Determination of doses due to long-term releases should use the historical annual average relative concentration (λ/Q) based on meteorological data summarized, as recommended in Regulatory Guide 1.111.

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2.3.13 Members Of The Public

MEMBERS OF THE PUBLIC **SHALL** include all persons who are not occupationally associated with the plant. This category does not include employees of the utility, its contractors, or its vendors. Also excluded from this category are persons who enter the site to service equipment or to make deliveries. This category does include persons who use portions of this site for recreational, occupational, or other purposes not associated with the plant.

2.3.14 Operable - Operability

As defined in the Technical Specifications.

2.3.15 Purge - Purging

PURGE - PURGING **SHALL** be any controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is required to purify the confinement.

2.3.16 Radiological Environmental Monitoring Program (REMP)

The RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM is established for monitoring the radiation and radionuclides in the environs of the plant. The program **SHALL** provide representative measurements of radioactivity in the highest potential exposure pathways and verification of the accuracy of potential exposure pathways and verification of the accuracy of the effluent monitoring program and modeling of the environmental exposure pathways.

2.3.17 Short Term Release

"Short-term" refers to releases that are intermittent in radionuclide concentrations or flow, such as releases from drywell purges and systems or components with infrequent use. Short-term releases may be due to operational variations which result in radioactive releases greater than 50% of the releases normally considered as long-term. Short-term releases from these sources during normal operation, including anticipated operational occurrences, are defined as those which occur for a total of 500 hours or less in a calendar year but not more than 150 hours in any quarter.

2.3.18 Site Boundary

Means a line within which the land is owned, leased, or otherwise controlled by the licensee. The site boundary for liquid releases of radioactive material is defined in ODCM-02.01 Figure 1. The site boundary for gaseous releases of radioactive material is defined in ODCM-03.01 Figure 1.

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2.3.19 Source Check

A SOURCE CHECK **SHALL** be the qualitative assessment of channel response when the channel sensor is exposed to a radioactive source.

2.3.20 Unrestricted Area

An UNRESTRICTED AREA means any area at or beyond the site boundary to which access is not controlled by the licensee for purposes of protection of individuals from exposure to radiation and radioactive materials or any area within the site boundary used for residential quarters or industrial, commercial, institutional and/or recreational purposes.

2.3.21 Uranium Fuel Cycle

The URANIUM FUEL CYCLE is defined in 40CFR Part 190.02(b) as: "The operation of milling of uranium ore, chemical conversion of uranium, isotopic enrichment of uranium, fabrication of uranium fuel, generation of electricity by a light-water-cooled nuclear power plant using uranium fuel, and reprocessing of spent uranium fuel, to the extent that these directly support the production of electrical power for public use utilizing nuclear energy, but excludes mining operations, operations at waste disposal sites, transportation of any radioactive material in support of these operations, and the use of recovered non-uranium special nuclear and by-product materials from the cycle."

2.3.22 Venting

VENTING **SHALL** be the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating condition, in such a manner that replacement air or gas is NOT provided or required.

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2.4 Radiological Effluent Controls And Surveillance Requirement

2.4.1 Controls

- A. Compliance with the controls contained within the succeeding text is required during the conditions specified. Upon failure to meet the control, the associated ACTION requirements **SHALL** be met.
- B. Noncompliance with a control **SHALL** exist when the requirements of the Control and associated ACTION requirements are not met within the specified time interval. If the Control is restored prior to expiration of the specified time interval, completion of the ACTION requirements is not required.
- C. Noncompliance with a CONTROL and associated ACTION, or a Surveillance Requirement **SHALL** be documented in the annual "Radioactive Effluent Release Report" covering the period of the noncompliance. Documentation of a noncompliance **SHALL** identify the cause of the noncompliance, define the corrective actions taken to correct the noncompliance, and a description of actions taken to prevent recurrence.

2.4.2 Surveillance Requirements

- A. Surveillance Requirements **SHALL** be met during the conditions specified for individual controls unless otherwise stated in an individual Surveillance Requirement.
- B. Each Surveillance Requirement **SHALL** be performed within the specified time interval with the following exceptions:
 - 1. Specified time intervals between tests may be adjusted plus 25% to accommodate normal test schedules.
- C. Failure to perform a Surveillance Requirement within the allowed surveillance interval, defined by Control B. **SHALL** constitute noncompliance with the OPERABILITY requirements for a Control for operation. The time limits of the ACTION requirements are applicable at the time it is identified that a Surveillance Requirement has not been performed. The ACTION requirements may be delayed for up to 24 hours to permit the completion of the surveillance when the allowable outage time limits of the ACTION requirements are less than 24 hours. Surveillance Requirements do not have to be performed on inoperable equipment.