

ENCLOSURE 3

PLANT HATCH - UNITS 1, 2  
NRC DOCKETS 50-321, 50-366  
OPERATING LICENSES DPR-57, NPF-5  
REQUEST TO REVISE TECHNICAL SPECIFICATIONS:  
RADIOLOGICAL EFFLUENT TECHNICAL SPECIFICATIONS  
IN ACCORDANCE WITH GENERIC LETTER 89-01

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## 1.0 DEFINITIONS

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### UU. SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

### VV. PROCESS CONTROL PROGRAM

The PROCESS CONTROL PROGRAM (PCP) shall be implemented by procedures which contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

### WW. SOLIDIFICATION

This definition transferred to the PCP per NRC Generic Letter 89-01.

### XX. OFFSITE DOSE CALCULATION MANUAL

The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the radioactive effluent controls required by Technical Specification 6.18 and Radiological Environmental Monitoring Program required by Technical Specification 6.19 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Surveillance Report required by Technical Specification 6.9.1.6 and the Semiannual Radioactive Effluent Release Report required by Technical Specification 6.9.1.8.

### YY. GASEOUS RADWASTE TREATMENT SYSTEM

This definition transferred to the ODCM per NRC Generic Letter 89-01.

3/4.14 INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.



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## INSTRUMENTATION

### EXPLOSIVE GAS MONITORING INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.14.2 The explosive gas monitoring instrumentation channels shown in table 3.14.2-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.15.2.6 are not exceeded.

#### APPLICABILITY

As shown in table 3.14.2-1.

#### ACTION

- a. With an explosive gas monitoring instrumentation channel alarm/trip setpoint less conservative than a value that will ensure that the limits of 3.15.2.6 are met, without delay restore the setpoint to a value that will ensure that the limits of Specification 3.15.2.6 are met or declare the channel inoperable and take the ACTION shown in table 3.14.2-1.
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.14.2-1, take the ACTION shown in table 3.14.2-1. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.
- c. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

#### SURVEILLANCE REQUIREMENTS

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4.14.2 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.14.2-1.

TABLE 3.14.2.1 (SHEET 1 OF 2)

EXPLOSIVE GAS MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>Applicability</u>	<u>Parameter</u>	<u>ACTION</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring System Hydrogen Monitor	(1)	**	% Hydrogen	106

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TABLE 3.14.2-1 (SHEET 2 OF 2)

EXPLOSIVE GAS MONITORING INSTRUMENTATION

Table Notations

\*\*During main condenser offgas treatment system operation.

ACTION 106 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue provided:

- (a) Gas samples are collected once per 4 hours and analyzed within the ensuing 4 hours, or
- (b) Using a temporary hydrogen analyzer installed in the offgas system line downstream of the recombiner, hydrogen concentration readings are taken and logged every 4 hours.

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TABLE 4.14.2-1 (SHEET 1 OF 2)  
 EXPLOSIVE GAS MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring System Hydrogen Monitor	D**	NA	C(2)	M

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TABLE 4.14.2-1 (SHEET 2 OF 2)

EXPLOSIVE GAS MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Table Notations

\*\*During main condenser offgas treatment system operation.

(1) Deleted

(2) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

- a. One volume-percent hydrogen, balance nitrogen.
- b. Four volume-percent hydrogen, balance nitrogen.

INSTRUMENTATION

BASES

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3/4.14.1 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

This specification transferred to the ODCM per NRC Generic Letter 89-01. |

3/4.14.2 EXPLOSIVE GAS MONITORING INSTRUMENTATION |

The monitoring instrumentation includes provisions for monitoring |  
(and controlling) the concentrations of potentially explosive gas |  
mixtures in the main condenser offgas treatment system. The |  
OPERABILITY and use of this instrumentation is consistent with |  
the requirements of General Design Criterion 63 of Appendix A |  
to 10 CFR Part 50. |

3/4.15 RADIOACTIVE EFFLUENTS

3/4.15.1 LIQUID EFFLUENTS

CONCENTRATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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RADIOACTIVE EFFLUENTS

DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

3/4.15.2 GASEOUS EFFLUENTS

DOSE RATE

This specification transferred to the ODCM per NRC Generic Letter 89-01.



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RADIOACTIVE EFFLUENTS

DOSE, NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

POSS., RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE  
FORM, AND RADIOISOTOPES OTHER THAN NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

TOTAL DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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## RADIOACTIVE EFFLUENTS

### MAIN CONDENSER

#### LIMITING CONDITION FOR OPERATION

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3.15.2.7 The gross gamma radioactivity rate of the noble gases Xe-133, Xe-135, Xe-138, Kr-85m, Kr-87, and Kr-88 measured at the main condenser evacuation system pretreatment monitor station shall be limited to  $\leq 240,000 \mu\text{Ci}/\text{second}$ .

#### APPLICABILITY

At all times.

#### ACTION

With the gross gamma radioactivity rate of the aforementioned six noble gases at the pretreatment monitor exceeding  $240,000 \mu\text{Ci}/\text{second}$ , restore the gross radioactivity rate to within its limit within 72 hours or be in at least the Hot Standby Mode within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

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4.15.2.7.1 The radioactivity rate of the aforementioned six noble gases near the outlet of the main condenser air ejector shall be continuously monitored in accordance with the ODCM.

4.15.2.7.2 The gross radioactivity (beta and/or gamma) rate of the aforementioned six noble gases from the main condenser air ejector shall be determined to be within the above limit at the following frequencies by performing an isotopic analysis of a representative sample of gases taken at the pretreatment monitoring station:

- a. Monthly when plant is operating.
- b. Within 4 hours following an evacuation system pretreatment increase of greater than 50 percent, as indicated by the condenser monitor, after factoring out increases due to changes in THERMAL POWER level, in the nominal steady-state fission gas release from the primary coolant.

RADIOACTIVE EFFLUENTS

3/4.15.3 SOLID RADIOACTIVE WASTE

This specification transferred to the PCP per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

BASES

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3/4.15.1 LIQUID EFFLUENTS

3/4.15.1.1 CONCENTRATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

3/4.15.1.2 DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

## RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.15.1.3 LIQUID WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.15.1.4 LIQUID HOLDUP TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix A, Table 11 (column 2) at the nearest surface water supply in an UNRESTRICTED AREA.

#### 3/4.15.2 GASEOUS EFFLUENTS

##### 3/4.15.2.1 DOSE RATE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

BASES

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3/4.15.2.2 DOSE, NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

BASES

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3/4.15.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL  
IN PARTICULATE FORM AND RADIONUCLIDES OTHER  
THAN NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

## RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.15.2.4 GASEOUS WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.15.2.5 DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.15.2.6 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas treatment system is maintained below the flammability limit of hydrogen. (Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of hydrogen, automatic diversion to recombiners or injection of dilutants to reduce the concentration below the flammability limit.) Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

#### 3/4.15.2.7 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total-body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in

## RADIOACTIVE EFFLUENTS

### BASES

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the event this effluent is inadvertently discharged without treatment directly to the environment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

#### 3/4.15.3 SOLID RADIOACTIVE WASTE

This specification transferred to the PCP per NRC Generic Letter 89-01.



## RADIOACTIVE EFFLUENTS

### BASES

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the event this effluent is inadvertently discharged without treatment directly to the environment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

#### 3/4.15.3 SOLID RADIOACTIVE WASTE

This specification transferred to the PCP per NRC Generic Letter 89-01.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.1 MONITORING PROGRAM

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.2 LAND USE SURVEY

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.3 INTERLABORATORY COMPARISON PROGRAM

This specification transferred to the ODCM per NRC Generic Letter 89-01.

3/4.16 RADIOLOGICAL ENVIRONMENTAL MONITORING

BASES

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3/4.16.1 MONITORING PROGRAM

This specification transferred to the ODCM per NRC Generic Letter 89-01.

3/4.16.2 LAND USE SURVEY

This specification transferred to the ODCM per NRC Generic Letter 89-01.

3/4.16.3 INTERLABORATORY COMPARISON PROGRAM

This specification transferred to the ODCM per NRC Generic Letter 89-01.

## 6.0 ADMINISTRATIVE CONTROLS

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### 6.1 RESPONSIBILITY

6.1.0 The General Manager-Nuclear Plant shall provide direct executive oversight over all aspects of Plant Hatch.

6.1.1 The Assistant General Manager-Plant Operations (AGM-PO) shall be responsible for overall unit operation, except for the Radiological Environmental Monitoring Program as described below and for delegation in writing of the succession of this responsibility during his absence. Certain plant support functions shall be the responsibility of the Assistant General Manager-Plant Support (AGM-PS).

6.1.2 The General Manager-Nuclear Plant or his designee shall be responsible for the Radiological Environmental Monitoring Program as described in Specification 6.19 and for the writing of the Annual Radiological Environmental Surveillance Report.

6.1.3 Each of the above-mentioned individuals is responsible for the accuracy of the procedures needed to implement his responsibilities.

### 6.2 ORGANIZATION

#### 6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Plant Hatch Unit 2 updated FSAR.
- b. The AGM-PO shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. The Vice President-Nuclear shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the plant to ensure nuclear safety.

## ADMINISTRATIVE CONTROLS

### ANNUAL REPORTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility and other personnel, including contractors, receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,<sup>2</sup> e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- b. Documentation of all challenges to safety/relief valves.
- c. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.6.F.1. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.
- d. Any other unit unique reports required on an annual basis.

### ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT<sup>(a)</sup>

6.9.1.6 The Annual Radiological Environmental Surveillance Report covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the ODCM and Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections common to all units at the station.

<sup>2</sup>This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.



## ADMINISTRATIVE CONTROLS

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### SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT<sup>(a)</sup>

6.9.1.8 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections that are common to all units at the station; however, the submittal shall specify the releases of radioactive material from each unit.

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## ADMINISTRATIVE CONTROLS

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### MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report.

### CORE OPERATING LIMITS REPORT

- 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
- (1) Operation with a Limiting Control Rod Pattern (for Rod Withdrawal Error, RWE) for Specification 3.3.F,
  - (2) The Average Planar Linear Heat Generation Rate (APLHGR) for Specification 3.11.A,
  - (3) The Linear Heat Generation Rate (LHGR) for Specification 3.11.B, and
  - (4) The Minimum Critical Power Ratio (MCPR) for Specifications 3.3.F and 3.11.C and Surveillance Requirement 4.11.C.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents.
- (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).
  - (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 157 to Facility Operating License DPR-57," dated September 12, 1988.
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

## ADMINISTRATIVE CONTROLS

### RECORD RETENTION (Continued)

- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified in Table 5.0.G-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required by the QA Manual.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PRB and the SRB.
- l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.15.
- m. Records of analyses required by the Radiological Environmental Monitoring Program.
- n. Records of the service lives of all safety-related hydraulic and mechanical snubbers including the date at which the service life commences and associated installation and maintenance records.
- o. Records of reviews performed for changes made to the OF SITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

### 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

### 6.12 HIGH RADIATION AREA

6.12.1. In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit\*. Any individual or group of individuals permitted

\*Health Physics personnel, or personnel escorted by Health Physics personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

## ADMINISTRATIVE CONTROLS

### 6.16 POST-ACCIDENT SAMPLING AND ANALYSIS

A program shall be established, implemented, and maintained to ensure the capability to obtain and analyze samples of reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere under accident conditions.

The program shall include the following:

- (1) Training of personnel,
- (2) Procedures for sampling and analysis, and
- (3) Provisions for maintenance of sampling and analysis equipment.

### 6.17 OFFSITE DOSE CALCULATION MANUAL

6.17.1 Licensee-initiated changes to the ODCM shall:

- a. Be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
  - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Become effective after review and acceptance by the PRR and the approval of the General Manager-Nuclear Plant.
- c. Be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of, or concurrent with, the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to 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 (e.g., month/year) the change was implemented.

### 6.18 RADIOACTIVE EFFLUENTS CONTROL PROGRAM

A program shall be established, implemented, and maintained conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the OPERABILITY of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,

## ADMINISTRATIVE CONTROLS

### RADIOACTIVE EFFLUENTS CONTROL PROGRAM (Continued)

- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual DOSE or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1,
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

### 6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be established, implemented, and maintained to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

6.20 PROCESS CONTROL PROGRAM (PCP)

A program shall be established, implemented, and maintained to contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.



## ADMINISTRATIVE CONTROLS

### RADIOACTIVE EFFLUENTS CONTROL PROGRAM (Continued)

- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual DOSE or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table 11, Column 1,
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

### 6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be established, implemented, and maintained to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

## ADMINISTRATIVE CONTROLS

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### 6.20 PROCESS CONTROL PROGRAM (PCP)

A program shall be established, implemented, and maintained to contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.

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### LIMITING CONDITIONS FOR OPERATION AND SURVEILLANCE REQUIREMENTS

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## 1.0 DEFINITIONS (Continued)

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### SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

### PROCESS CONTROL PROGRAM

The PROCESS CONTROL PROGRAM (PCP) shall be implemented by procedures which contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

### SOLIDIFICATION

This definition transferred to the PCP per NRC Generic Letter 89-01.

### OFFSITE DOSE CALCULATION MANUAL

The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring alarm/trip setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the radioactive effluent controls required by Technical Specification 6.18 and Radiological Environmental Monitoring Program required by Technical Specification 6.19 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Surveillance Report required by Technical Specification 6.9.1.6 and the Semiannual Radioactive Effluent Release Report required by Technical Specification 6.9.1.8.

### GASEOUS RADWASTE TREATMENT SYSTEM

This definition transferred to the ODCM per NRC Generic Letter 89-01.

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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## INSTRUMENTATION

### EXPLOSIVE GAS MONITORING INSTRUMENTATION

#### LIMITING CONDITION FOR OPERATION

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3.3.6.10 The explosive gas monitoring instrumentation channels shown in table 3.3.6.10-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.6 are not exceeded.

#### APPLICABILITY

As shown in table 3.3.6.10-1.

#### ACTION

- a. With an explosive gas monitoring instrumentation channel alarm/trip setpoint less conservative than a value that will ensure that the limits of 3.11.2.6 are met, without delay restore the setpoint to a value that will ensure that the limits of Specification 3.11.2.6 are met or declare the channel inoperable and take the ACTION shown in table 3.3.6.10-1.
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.3.6.10-1, take the ACTION shown in table 3.3.6.10-1. Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.
- c. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

#### SURVEILLANCE REQUIREMENTS

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4.3.6.10 Each explosive gas monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.3.6.10-1.

TABLE 3.3.6.10-1 (SHEET 1 OF 2)

EXPLOSIVE GAS MONITORING INSTRUMENTATION

<u>Instrument</u>	Minimum Channels <u>OPERABLE</u>	<u>Applicability</u>	<u>Parameter</u>	<u>ACTION</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring System				
Hydrogen Monitor	(1)	**	% Hydrogen	106

TABLE 3.3.6.10-1 (SHEET 2 OF 2)

EXPLOSIVE GAS MONITORING INSTRUMENTATION

Table Notations

\*\*During main condenser offgas treatment system operation.

ACTION 106 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue provided: (a) gas samples are collected once per 4 hours and analyzed within the ensuing 4 hours, or (b) using a temporary hydrogen analyzer installed in the offgas system line downstream of the recombiner, hydrogen concentration readings are taken and logged every 4 hours.

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TABLE 4.3.6.10-1 (SHEET 1 OF 2)  
EXPLOSIVE GAS MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring  Hydrogen Monitor	D**	NA	Q(2)	M

TABLE 4.3.6.10-1 (SHEET 2 OF 2)

EXPLOSIVE GAS MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Table Notations

\*\*During main condenser offgas treatment system operation.

(1) Deleted

(2) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

a. One volume-percent hydrogen, balance nitrogen

b. Four volume-percent hydrogen, balance nitrogen.

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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RADIOACTIVE EFFLUENTS

DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

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RADIOACTIVE EFFLUENTS

DOSE, NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.



RADIOACTIVE EFFLUENTS

DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE  
FORM, AND RADIONUCLIDES OTHER THAN NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

3/4.11.2.5 TOTAL DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

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## RADIOACTIVE EFFLUENTS

### MAIN CONDENSER

#### LIMITING CONDITION FOR OPERATION

---

3.11.2.7 The gross gamma radioactivity rate of the noble gases Xe-133, Xe-135, Xe-138, Kr-85m, Kr-87, and Kr-88 measured at the main condenser evacuation system pretreatment monitor station shall be limited to  $\leq 240,000 \mu\text{Ci/second}$ .

#### APPLICABILITY

At all times.

#### ACTION

With the gross gamma radioactivity rate of the aforementioned six noble gases at the pretreatment monitor exceeding  $240,000 \mu\text{Ci/second}$ , restore the gross radioactivity rate to within its limit within 72 hours or be in at least OPERATIONAL CONDITION 2 within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

---

4.11.2.7.1 The radioactivity rate of the aforementioned six noble gases near the outlet of the main condenser air ejector shall be continuously monitored in accordance with the ODCM.

4.11.2.7.2 The gross radioactivity (beta and/or gamma) rate of the six aforementioned noble gases from the main condenser air ejector shall be determined to be within the above limit at the following frequencies by performing an isotopic analysis of a representative sample of gases taken at the pretreatment monitoring station:

- a. Monthly when plant is operating.
- b. Within 4 hours following an evacuation system pretreatment increase of greater than 50 percent, as indicated by the condenser monitor, after factoring out increases due to changes in THERMAL POWER level, in the nominal steady-state fission gas release from the primary coolant.

RADIOACTIVE EFFLUENTS

3/4.11.3 SOLID RADIOACTIVE WASTE

This specification transferred to the PCP per NRC Generic Letter 89-01.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

This specification transferred to the ODCM per NRC Generic Letter 89-01. |

## INSTRUMENTATION

### BASIS

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#### MONITORING INSTRUMENTATION (Continued)

##### 3/4.3.6.9 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

##### 3/4.3.6.10 EXPLOSIVE GAS INSTRUMENTATION

The monitoring instrumentation includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the main condenser offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criterion 63 of Appendix A to 10 CFR Part 50.

##### 3/4.3.7 TURBINE OVERSPEED PROTECTION SYSTEM

This specification is provided to ensure that the turbine overspeed protection system instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety-related components, equipment or structures.



RADIOACTIVE EFFLUENTS

BASES

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3/4.11.1 LIQUID EFFLUENTS

3/4.11.1.1 CONCENTRATION

This specification transferred to the ODCM per NRC Generic Letter 89-01.

3/4.11.1.2 DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

## RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.11.1.3 LIQUID WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.11.1.4 LIQUID HOLDUP TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix A, Table II (column 2) at the nearest surface water supply in an UNRESTRICTED AREA.

#### 3/4.11.2 GASEOUS EFFLUENTS

##### 3/4.11.2.1 DOSE RATE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

BASES

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3/4.11.2.2 DOSE, NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

RADIOACTIVE EFFLUENTS

BASES

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3/4.11.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL  
IN PARTICULATE FORM AND RADIONUCLIDES OTHER  
THAN NOBLE GASES

This specification transferred to the ODCM per NRC Generic Letter 89-01.

## RADIOACTIVE EFFLUENTS

### BASES

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#### 3/4.11.2.4 GASEOUS WASTE TREATMENT

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.11.2.5 DOSE

This specification transferred to the ODCM per NRC Generic Letter 89-01.

#### 3/4.11.2.6 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas treatment system is maintained below the flammability limit of hydrogen. (Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of hydrogen, automatic diversion to recombiners or injection of dilutants to reduce the concentration below the flammability limit.) Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

#### 3/4.11.2.7 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total-body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in

## RADIOACTIVE EFFLUENTS

### BASES

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the event this effluent is inadvertently discharged without treatment directly to the environment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

### 3/4.11.3 SOLID RADIOACTIVE WASTE

This specification transferred to the PCP per NRC Generic Letter 89-01.

## 6.0 ADMINISTRATIVE CONTROLS

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### 6.1 RESPONSIBILITY

6.1.0 The General Manager-Nuclear Plant shall provide direct executive oversight over all aspects of Plant Hatch.

6.1.1 The Assistant General Manager-Plant Operations (AGM-PO) shall be responsible for overall unit operation, except for the Radiological Environmental Monitoring Program as described below and for delegation in writing of the succession of this responsibility during his absence. Certain plant support functions shall be the responsibility of the Assistant General Manager-Plant Support (AGM-PS).

6.1.2 The General Manager-Nuclear Plant or his designee shall be responsible for the Radiological Environmental Monitoring Program as described in Specification 6.19 and for the writing of the Annual Radiological Environmental Surveillance Report.

6.1.3 Each of the above-mentioned individuals is responsible for the accuracy of the procedures needed to implement his responsibilities.

### 7 ORGANIZATION

#### 7.1 OFFSITE AND ONSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Plant Hatch Unit 2 updated FSAR.
- b. The AGM-PO shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. The Vice President-Nuclear shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the plant to ensure nuclear safety.

## ADMINISTRATIVE CONTROLS

### ANNUAL REPORTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility and other personnel, including contractors, receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,<sup>2</sup> e.g., reactor operations and surveillance inservice inspection, routine maintenance, special maintenance (described maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- b. Documentation of all challenges to safety/relief valves.
- c. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.5. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine was reduced to less than the limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.
- d. Any other unit unique reports required on an annual basis.

### ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT<sup>(a)</sup>

6.9.1.6 The Annual Radiological Environmental Surveillance Report covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the ODCM and Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections common to all units at the station.

<sup>2</sup>This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.



## ADMINISTRATIVE CONTROLS

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### SEMIANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT<sup>(a)</sup>

6.9.1.8 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections that are common to all units at the station; however, the submittal shall specify the releases of radioactive material from each unit.

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MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

- 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
- (1) Control Rod Program Controls - Rod Block Monitor for Specification 3.1.4.3,
  - (2) The Average Planar Linear Heat Generation Rate for Specification 3.2.1 and Surveillance Requirement 4.2.1,
  - (3) The Minimum Critical Power Ratio for Specifications 3.1.4.3 and 3.2.3 and Surveillance Requirement 4.2.3, and
  - (4) The Linear Heat Generation Rate for Specification 3.2.4 and Surveillance Requirement 4.2.4.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents.
- (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).
  - (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment Nos. 151 and 89 to Facility Operating Licenses DPR-57 and NPF-5," dated January 22, 1988.
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

## ADMINISTRATIVE CONTROLS

### RECORD RETENTION (Continued)

- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified in Table 5.7.1-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required by the QA Manual.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PRB and the SRB.
- l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.15.
- m. Records of analyses required by the Radiological Environmental Monitoring Program.
- n. Records of the service lives of all safety-related hydraulic and mechanical snubbers, including the date at which the service life commences and associated installation and maintenance records.
- o. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

### 6.11 RADIATION PROTECTION PROGRAM

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

### 6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit\*. Any individual or group of individuals permitted

\*Health Physics personnel, or personnel escorted by Health Physics personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

## ADMINISTRATIVE CONTROLS

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### 6.16 POST-ACCIDENT SAMPLING AND ANALYSIS

A program shall be established, implemented, and maintained to ensure the capability to obtain and analyze samples of reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere under accident conditions.

The program shall include the following:

- (1) Training of personnel,
- (2) Procedures for sampling and analysis, and
- (3) Provisions for maintenance of sampling and analysis equipment.

### 6.17 OFFSITE DOSE CALCULATION MANUAL

6.17.1 Licensee-initiated changes to the ODCM shall:

- a. Be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.
- c. Be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of, or concurrent with, the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to 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 (e.g., month/year) the change was implemented.

### 6.18 RADIOACTIVE EFFLUENTS CONTROL PROGRAM

A program shall be established, implemented, and maintained conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the OPERABILITY of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,

## 6.18 RADIOACTIVE EFFLUENTS CONTROLS PROGRAM (Continued)

- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the OPERABILITY and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1,
- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

## 6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be established, implemented, and maintained to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

#### 6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM (Continued)

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

#### 6.20 PROCESS CONTROL PROGRAM (PCF)

A program shall be established, implemented, and maintained to contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s), and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.



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## 1.0 DEFINITIONS

### UU. SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

### VV. PROCESS CONTROL PROGRAM

Insert 1

The PROCESS CONTROL PROGRAM shall contain the current formula, sampling, analysis, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of radioactive wastes.

### WW. SOLIDIFICATION

*This definition transferred to the PCP per NRC Generic Letter 89-01*  
SOLIDIFICATION shall be the conversion of wet radioactive wastes into a form that meets shipping and burial ground requirements.

DELETED

### XX. OFFSITE DOSE CALCULATION MANUAL (ODCM)

Insert 2

An ODCM shall be a manual containing the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/trip setpoints, and in the conducting of environmental radiological monitoring.

### YY. GASEOUS RADWASTE TREATMENT SYSTEM

*This definition transferred to the ODCM per NRC Generic Letter 89-01*  
The GASEOUS RADWASTE TREATMENT SYSTEM is the offgas holdup system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to UNRESTRICTED AREAS.

DELETED

Insert 1

*BE IMPLEMENTED BY PROCEDURES WHICH*

The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Insert 2

The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls required by Technical Specification 6.18 and Radiological Environmental Monitoring Programs required by Technical Specification 6.19 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Surveillance Report required by Technical Specification 6.9.1.6 and the Radioactive Effluent Release Report required by Technical Specification 6.9.1.8.

*Semiannual*

3/4.14

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
LIMITING CONDITION FOR OPERATION

3.14.1 The radioactive liquid effluent monitoring instrumentation channels shown in table 3.14.1-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.15.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY

As shown in table 3.14.1-1.

DELETED

ACTION

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, without delay suspend the release of radioactive liquid effluents monitored by the affected channel, declare the channel inoperable, or change to a conservative value.
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.14.1-1, take the ACTION shown in table 3.14.1-1.
- c. The provisions of Specification 6.9.1.13(b) are not applicable.
- d. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.14.1 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.14.1-1.

*These pages are intentionally left blank.*

TABLE 3.14-1-1 (SHEET 1 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>Applicability</u>	<u>ACTION</u>
<b>DELETED</b>			
1. Gross Radioactivity Monitors Providing Automatic Termination of Release  Liquid Radwaste Effluent Line	1	(a)	100
2. Gross Radioactivity Monitors not Providing Automatic Termination of Release  Service Water System Effluent Line	1	(b)	101
3. Flowrate Measurement Devices**  Liquid Radwaste Effluent Line	1	(a)	102
Discharge Canal	1	(b) (a)	102
4. Service Water System to Closed Cooling Water System Differential Pressure	1	At all times	103

\*\*Pump curves may be utilized to estimate flow; in such cases, ACTION statement 102 is not required.

(a) Whenever the radwaste discharge valves are not locked closed.

(b) Whenever the service water system pressure is below the closed cooling water system pressure or  $\Delta P$  indication is not available.

TABLE 3.14.1-1 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Table Notations

DELETED

ACTION 100 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may be continued, provided that prior to initiating a release:

- a. At least two independent samples are analyzed in accordance with Specification 4.15.1.1.1.
- b. At least two technically qualified individuals independently verify the release rate calculations and discharge valving.

Otherwise, suspended release of radioactive effluents via this pathway. If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 101 - With the numbers of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided that once per shift grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a Lower Limit of Detection of at least  $10^{-7}$   $\mu\text{Ci/ml}$ . If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 102 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided the flowrate is estimated at least once per 4 hours during actual releases. If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 103 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, assure that the service water system effluent system monitor is OPERABLE.

TABLE 4.14.1-1 (SHEET 1 OF 2)  
RADIOACTIVE LIQUID EFFLUENT MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Gross Gamma Radioactivity Monitors Providing Alarm and Automatic Isolation  Liquid Rad-waste Effluent Line	D*	P(2)	R	Q(2)
2. Gross Gamma Radioactivity Monitors Providing Alarm but not Providing Automatic Isolation  Service Water System Effluent Line	D*	M	R	Q(4)
3. Flowrate Measurement Devices  Liquid Rad-waste Effluent Line	D(2)*	NA	R	Q
Discharge Canal	D(2)*	NA	R	Q
4. Service Water System to Closed Cooling Water System Differential Pressure	D	NA	R	NA

DELETED



TABLE 4.14.1-1 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Table Notations

DELETED

\*During releases via this pathway.

- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:
  - a. Instrument indicates measured levels above the alarm/trip setpoint.
  - b. Instrument indicates an isolation on high alarm.
  - c. Instrument controls are not set in operate mode.
- (2) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once daily on any day on which continuous, periodic, or batch releases are made.
- (3) The SOURCE CHECK prior to release shall consist of verifying that the instrument is reading onscale.
- (4) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:
  - a. Instrument indicates measured levels above the alarm setpoint.
  - b. Instrument indicates a downscale failure.
  - c. Instrument controls not set in operate mode.

INSTRUMENTATION

EXPLOSIVE GAS MONITORING

RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.14.2 The ~~radioactive gaseous effluent~~ <sup>explosive gas</sup> monitoring instrumentation channels shown in table 3.14.2-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.15.2.1(a) are not exceeded. ~~The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.~~ 3.15.2.6

APPLICABILITY

As shown in table 3.14.2-1.

ACTION

- a. With ~~a radioactive gaseous effluent~~ <sup>an explosive gas</sup> monitoring instrumentation channel alarm/trip setpoint less conservative than a value that will ensure that the limits of 3.15.2.1(a) are met, without delay restore the setpoint to a value that will ensure that the limits of Specification 3.15.2.1(a) are met or declare the channel inoperable and take the ACTION shown in Table 3.14.2-1. 3.15.2.6
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.14.2-1, take the ACTION shown in table 3.14.2-1. 3.15.2.6

~~c. The provisions of Specification 6.9.1.13(b) are not applicable.~~

*cf.* When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.14.2 Each ~~radioactive gaseous effluent~~ <sup>explosive gas</sup> monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, ~~SOURCE CHECK,~~ CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.14.2-1.

Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.

HATCH - UNIT 1

3.14-7

Amendment No. 110

EXPLOSIVE GAS

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

TABLE 3.14.2-1 (SHEET 1 OF 1)

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>Applicability</u>	<u>Parameter</u>	<u>ACTION</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring System				
Hydrogen Monitor	(1)	**	% Hydrogen	106
2. Reactor Building Vent Stack Monitoring System		DELETED		
a. Noble Gas Activity Monitor	(1)	*	Radioactivity Rate Measurement +	105
b. Iodine Sampler Cartridge	(1)	*	Verify Presence of Cartridge	107
c. Particulate Sampler Filter	(1)	*	Verify Presence of Filter	107
d. Effluent System Flowrate Measurement Device	(1)	*	System Flowrate Measurement	104
e. Sampler Flowrate Measurement Device	(1)	*	Sampler Flowrate Measurement	104
3. Recombiner Building Ventilation Monitoring System				
a. Noble Gas Activity Monitor	(1)	*	Radioactivity Rate Measurement +	105
b. Iodine Sampler Cartridge	(1)	*	Verify Presence of Cartridge	107
c. Particulate Sampler Filter	(1)	*	Verify Presence of Filter	107
d. Sampler Flowrate Measurement Device	(1)	*	Sampler Flowrate Measurement	104

TABLE 3.14.2-1 (SHEET 2 OF 4)  
 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

DELETED

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>Applicability</u>	<u>Parameter</u>	<u>ACTION</u>
4. Main Stack Monitoring System				
a. Noble Gas Activity Monitor	(1)	*	Radioactivity Rate Measurement +	105
b. Iodine Sampler Cartridge	(1)	*	Verify Presence of Cartridge	107
c. Particulate Sampler Filter	(1)	*	Verify Presence of Filter	107
d. Effluent System Flowrate Measuring Devices	(1)	*	System Flowrate Measurement	104
e. Sampler Flowrate Measuring Device	(1)	*	Sampler Flowrate Measurement	104
5. Condenser Offgas Pretreatment Monitor				
Noble Gas Activity Monitor	(1)	***	Radioactivity Rate Measurement	108

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EXPLOSIVE GAS

TABLE 3.14.2-1 (SHEET <sup>2</sup> ~~3~~ OF <sup>3</sup> ~~4~~)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Table Notations

~~\*Monitor must be capable of responding to a Lower Limit of Detection of  $1 \times 10^{-4}$   $\mu\text{Ci/ml}$ . (Not Used)~~

~~\*\*During releases via this pathway. (Not Used)~~

~~\*\*During main condenser offgas treatment system operation.~~

~~\*\*\*During operation of the main condenser air ejector. (Not Used)~~  
~~(Not Used)~~

~~ACTION 104A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided the flowrate is estimated at least once per 4 hours.~~

~~If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.~~

~~(Not Used)~~

~~ACTION 105A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided grab samples are taken daily and analyzed daily for gross activity within 24 hours. With the number of main stack monitoring system channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, without delay suspend drywell purge.~~

~~If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.~~

ACTION 106 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue provided:

- (a) Gas samples are collected once per 4 hours and analyzed within the ensuing 4 hours, or
- (b) Using a temporary hydrogen analyzer installed in the offgas system line downstream of the recombiner, hydrogen concentration readings are taken and logged every 4 hours.

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TABLE 3.14.2-1 (SHEET 4 OF 4)

EXPLOSIVE GAS

~~RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION~~

Table Notations (Continued)

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report. DELETED

(Not Used)

~~ACTION 107A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided samples are continuously collected with auxiliary sampling equipment for periods on the order of 7 days and analyzed within 48 hours after the end of the sampling period.~~

~~If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.~~

(Not Used)

~~ACTION 108A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, release to the environment may continue for up to 72 hours provided:~~

- ~~a. The offgas system is not bypassed, and~~
- ~~b. The offgas post-treatment monitor (D11-K615) or the main stack monitor (D11-K600) is OPERABLE.~~

~~Otherwise, be in at least HOT STANDBY within 12 hours.~~

~~If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.~~

TABLE 4.14.2-1 (SHEET 1 OF 2)  
 EXPLOSIVE GAS  
 A-RADIOACTIVE GASEOUS EFFLUENT MONITORING  
 INSTRUMENTATION SURVEILLANCE REQUIREMENTS

CHANNEL  
FUNCTIONAL  
TEST

CHANNEL  
CALIBRATION

SOURCE  
CHECK

CHANNEL  
CHECK

Instrument

1. Main Condenser  
Offgas Treatment  
System Explosive  
Gas Monitoring  
System

M

Q(2)

NA

D\*\*

Hydrogen Monitor

Q(1)

R

M

D\*

Reactor Building  
Vent Stack  
Monitoring System

DELETED

NA

NA

NA

W\*(3)

Noble Gas Activ-  
ity Monitor

NA

NA

NA

W\*(3)

Iodine Sampler  
Cartridge

Q

R

NA

D\*

Particulate  
Sampler Filter

Q

R

NA

D\*

Effluent System  
Flowrate  
Measuring Device

Q

R

NA

D\*

Sampler Flowrate  
Measuring Device

2

TABLE 4.14.2-1 (SHEET 2 OF 3)  
 RADIOACTIVE GASEOUS EFFLUENT MONITORING  
 INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
3. Recombiner Building Ventilation Monitoring System				
a. Noble Gas Activity Monitor	D*	M	R	Q(1)
b. Iodine Sampler Cartridge	W*(3)	NA	NA	NA
c. Particulate Sample Filter	W*(3)	NA	NA	NA
d. Sampler Flowrate Measuring Device	D*	NA	R	Q
4. Main Stack Monitoring System				
a. Noble Gas Activity Monitor	D*	M	R	Q(1)
b. Iodine Sampler	W*(3)	NA	NA	NA
c. Particulate Sampler	W*(3)	NA	NA	NA
d. Flowrate Monitor	D*	NA	R	Q
e. Sampler Flowrate Monitor	D*	NA	R	Q
5. Condenser Offgas Pretreatment Monitor				
Noble Gas Activity Monitor	D***	M	R	Q(1)

DELETED

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2      2  
TABLE 4.14.2-1 (SHEET 1 OF 1)  
EXPLOSIVE GAS  
RADIOACTIVE GASEOUS EFFLUENT MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Table Notations

~~\*During releases via this pathway. (Not Used)~~

\*\*During main condenser offgas treatment system operation.

~~\*\*\*During operation of the main condenser air ejector. (Not Used)~~  
(Not Used)

(1) ~~The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exists:~~

- ~~a. Instrument indicates measured levels above the alarm/trip setpoint.~~
- ~~b. Circuit failure occurs.~~
- ~~c. Instrument indicates a downscale failure.~~

DELETED

(2) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

- a. One volume-percent hydrogen, balance nitrogen.
- b. Four volume-percent hydrogen, balance nitrogen.

~~(Not Used)~~  
(3) ~~The CHANNEL CHECK shall consist of verifying the presence of a filter element and sampler flow at the weekly filter changeout.~~

DELETED

INSTRUMENTATION

BASES

3/4.14.1 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with the methods in the OFFSITE DOSE CALCULATION MANUAL (ODCM) to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

DELETED

EXPLOSIVE GAS

3/4.14.2 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with the methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The monitoring instrumentation includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the main condenser offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

### 3/4.15 RADIOACTIVE EFFLUENTS

#### 3/4.15.1 LIQUID EFFLUENTS

##### CONCENTRATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

##### LIMITING CONDITION FOR OPERATION (LCO)

3.15.1.1 The concentration of radioactive material released at any time from the site to UNRESTRICTED AREAS (figure 3.15-1) shall be limited to the concentrations specified in 10 CFR Part 20, 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  $2 \times 10^{-4}$   $\mu\text{Ci/ml}$  total activity.

##### APPLICABILITY

At all times.

DELETED

##### ACTION

- a. With the concentration of radioactive material released from the site to UNRESTRICTED AREAS exceeding the above limits, without delay restore concentration within the above limits and provide notification to the Commission by including a discussion of the causes and corrective actions taken in the next report per Specification 6.9.1.8.
- b. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

##### SURVEILLANCE REQUIREMENTS

4.15.1.1.1 Radioactive liquid effluents shall be sampled and analyzed according to the sampling and analysis program of table 4.15.1-1.

4.15.1.1.2 The result of radioactive analysis shall be used in accordance with the methods of the OFFSITE DOSE CALCULATION MANUAL (ODCM) to assure that the concentrations at the point of release are maintained within the limits of Specification 3.15.1.1.

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DELETED

TABLE 4.15.1-1 SHEET 1 OF 2  
 RADIOACTIVE LIQUID EFFLUENT SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency (s)	Minimum Analysis Frequency	Minimum Type of Activity Analysis	Lower Limit of Detection (pCi/ml)
Batch Waste Release Tanks	P Each Batch	P Each Batch	Principal Gamma Emitters (s)	$5 \times 10^{-3}$
	P One Batch/M	M	I-131	$1 \times 10^{-4}$
	P Each Batch	M Composite (s)	Dissolved and Entrained Gases	$1 \times 10^{-3}$
	P Each Batch	Q Composite (s)	H-3	$1 \times 10^{-4}$
			Gross Alpha	$1 \times 10^{-3}$
			Sr-89 Sr-90	$5 \times 10^{-3}$
			Fe-55	$2 \times 10^{-4}$

TABLE 4.15.1-2 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT SAMPLING AND ANALYSIS PROGRAM

Table Notations

DELETED

- a. The Lower Limit of Detection is defined in table notation (a) of table 4.16.1-1, Specification 4.16.1.
- b. For certain radionuclides with low-gamma yield or low energies or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the Lower Limit of Detection. Under these circumstances, the Lower Limit of Detection may be increased inversely proportional to the magnitude of the gamma yield (i.e.,  $E \times 10^{-7}/I$ , where:  $I$  = photon abundance expressed as a decimal fraction), but in no case shall the Lower Limit of Detection, as calculated in this manner for a specific radionuclide, be greater than 10 percent of the Maximum Permissible Concentration value specified in 10 CFR 20, Appendix B, Table II (column 2).
- c. 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 that is representative of the liquids released.
- d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analysis, each batch shall be isolated and then thoroughly mixed by a method described in the ODCM to assure representative sampling.
- e. The principal gamma emitters for which the Lower Limit of Detection specification will apply are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other measurable and identifiable peaks together with the above nuclides, shall also be identified and reported.

RADIOACTIVE EFFLUENTS

DOSE

*This specification transferred to the ODCM per NRC Generic i.c. # 89-01*

LIMITING CONDITION FOR OPERATION

3.15.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive material in liquid effluents released, from each reactor unit, from the site (figure 3.15-1) shall be limited to:

- a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ
- b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive materials in liquid effluents to ensure that subsequent releases will be in compliance with the above limits. (This report shall also include (1) the results of radiological analyses of the drinking water source and (2) the radiological impact on finished drinking water supplies with regard to the requirements of 40 CFR 141, Safe Drinking Water Act.)
- b. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

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RADIOACTIVE EFFLUENTS

DOSE (Continued)

DELETED

SURVEILLANCE REQUIREMENTS

4.15.1.2 Dose Calculations - Cumulative dose contributions from liquid effluents shall be determined monthly in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

LIQUID WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
LIMITING CONDITION FOR OPERATION

3.15.1.3 The liquid radwaste treatment system, as described in the ODCM, shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent per Unit from the site (figure 3.15-1) when projected over the calendar quarter would exceed 0.18 mrem to the total body or 0.62 mrem to any organ.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With radioactive liquid waste being discharged without treatment and in excess of the above limits, within 30 days, prepare and submit to the Commission, pursuant to Specification 6.9.2, a Special Report that includes the following information:
  1. Identification of the inoperable equipment or subsystems and the reason for inoperability.
  2. Action(s) taken to restore the inoperable equipment to OPERABLE status.
  3. Summary description of action(s) taken to prevent a recurrence.
- b. When the ACTION statement or other requirements of this LCD cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.15.1.3.1 Doses due to liquid releases shall be projected monthly in accordance with the ODCM, during periods in which discharge of untreated liquid effluent containing radioactive materials to UNRESTRICTED AREAS occurs or is expected to occur.



RADIOACTIVE EFFLUENTS

3/4.15.2 GASEOUS EFFLUENTS

DOSE RATE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
LIMITING CONDITION FOR OPERATION

3.15.2.1 The dose rate at any time in the UNRESTRICTED AREAS (figure 3.15-1) due to radioactive materials released in gaseous effluents from the site shall be limited to the following values:

DELETED

- a. The dose rate limit for noble gases shall be  $\leq 500$  mrem/year to the total body and  $\leq 3000$  mrem/year to the skin
- b. The dose rate limit for I-131, I-133, tritium, and for all radioactive materials in particulate form and radionuclides other than noble gases with half-lives greater than 8 days shall be  $\leq 1500$  mrem/year to any organ.

APPLICABILITY

At all times.

ACTION

With the dose rate(s) exceeding the above limits, without delay decrease the release rate to comply with the limit(s) given in Specification 3.15.2.1.

SURVEILLANCE REQUIREMENTS

4.15.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with methods and procedures described in the ODCM.

4.15.2.1.2 The dose rate due to radioactive materials other than noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures described in the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in table 4.15.2-1.

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TABLE 4.15.2-1 (SHEET 1 OF 3)  
 RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Analysis Frequency	Type of Activity Analysis	Lower Limit of Detection (pCi/ml)
A. Environmental Release Points	M <sup>(s)</sup> Grab Sample	M <sup>(s)</sup>	Principal Gamma Emitters <sup>(s)</sup>	.1 x 10 <sup>-10</sup>
1. Main Stack			H-3	1 x 10 <sup>-6</sup>
2. Reactor Building Vent				
3. Recombiner Building Vent				
B. All Release Types (as listed in A above)	Continuous <sup>(s)</sup>	M <sup>(s)</sup> Charcoal Sample	I-131	1 x 10 <sup>-12</sup>
	Continuous <sup>(s)</sup>	M <sup>(s)</sup> Particulate Sample	I-133	1 x 10 <sup>-10</sup>
	Continuous <sup>(s)</sup>	H	Principal Gamma Emitters <sup>(s)</sup> (I-131, Others)	1 x 10 <sup>-10</sup>
	Continuous <sup>(s)</sup>	H Composite Particulate Sample	Gross Alpha	1 x 10 <sup>-10</sup>
	Continuous <sup>(s)</sup>	Q Composite Particulate Sample	Sr-90, Sr-90	1 x 10 <sup>-10</sup>

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Table Notations

DELETED

- a. Lower Limit of Detection is defined in table notation (a) of table 4.16.1-1, Specification 4.16.1.
- b. For certain radionuclides with low-gamma yield or low energies, or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the Lower Limit of Detection. Under these circumstances, the Lower Limit of Detection may be increased inversely proportional to the magnitude of the gamma yield (i.e.,  $1 \times 10^{-4}/I$ , where  $I$  = photon abundance expressed as a decimal fraction), but in no case shall the Lower Limit of Detection, as calculated in this manner for a specific radionuclide, be greater than 10 percent of the Maximum Permissible Concentration value specified in 10 CFR 20, Appendix B, Table II (column 1).
- c. Sampling and analyses for principal gamma emitters shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a 1-hour period if analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant and the Main Stack Noble Gas Activity Monitor reading have increased more than a factor of 3.
- d. Sampling shall be performed weekly, and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed once per 24 hours for 7 days following each shutdown, startup, or THERMAL POWER change exceeding 15-percent RATED THERMAL POWER in 1 hour and analyses completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding Lower Limits of Detection may be increased by a factor of 10. The more frequent sampling and analysis requirement applies only if analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant and the Main Stack Noble Gas Activity Monitor Reading have increased more than a factor of 3.
- e. The ratio of the sample flowrate to the sampled stream flowrate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.15.2.1, 3.15.2.2, and 3.15.2.3.
- f. The principal gamma emitters which the Lower Limit of Detection specification will apply are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions; and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other measurable and identifiable peaks, together with the above nuclides, shall also be identified and reported. Nuclides below

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TABLE 4.15.2-1 (SHEET 3 OF 3)

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Table Notations (Continued)

DELETED

the Lower Limit of Detection for the analyses should not be reported as being present at the Lower Limit of Detection level for that nuclide. When unusual circumstances result in a Lower Limit of Detection higher than required, the reasons shall be documented in the semi-annual effluent release report.

RADIOACTIVE EFFLUENTS

DOSE, NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.15.2.2 The air dose in UNRESTRICTED AREAS (figure 3.15-1) due to noble gases released in gaseous effluents from each reactor unit shall be limited to the following:

- a. During any calendar quarter, to  $\leq 5$  mrad for gamma radiation and  $\leq 10$  mrad for beta radiation.
- b. During any calendar year, to  $\leq 10$  mrad for gamma radiation and  $\leq 20$  mrad for beta radiation.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report identifying the cause(s) for exceeding the limit(s) and defining the corrective actions taken to reduce the releases and proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.15.2.2.
- b. When the ACTION statement or other requirements of this LCD cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.15.2.2 Dose Calculations - Cumulative air dose contributions in UNRESTRICTED AREAS due to noble gases for the total time period shall be determined monthly in accordance with the ODCM.

## RADIOACTIVE EFFLUENTS

### DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM, AND RADIONUCLIDES OTHER THAN NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

#### LIMITING CONDITION FOR OPERATION

3.15.2.3 The dose to any organ of a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to UNRESTRICTED AREAS (figure 3.15-1) from each reactor unit shall be limited to the following:

- a. During any calendar quarter to  $\leq$  7.5 mrem to any organ.
- b. During any calendar year to  $\leq$  15 mrem to any organ.

#### APPLICABILITY

At all times.

DELETED

#### ACTION

- a. With the calculated dose from the release of I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days, in gaseous effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report identifying the cause(s) for exceeding the limits and defining the corrective actions taken to reduce releases and proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.15.2.3.
- b. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

#### SURVEILLANCE REQUIREMENTS

3.15.2.3 Dose Calculations - Cumulative organ dose contributions to a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to UNRESTRICTED AREAS from each reactor unit for the current calendar quarter and the current calendar year shall be determined monthly in accordance with the ODCM.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.15.2.4 The GASEOUS RADWASTE TREATMENT SYSTEM as described in the ODCM shall be in operation.

APPLICABILITY

DELETED

Whenever the main condenser air ejector system is in operation.

ACTION

- a. With the GASEOUS RADWASTE TREATMENT SYSTEM inoperable for more than 7 days, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:
  1. Identification of the inoperable equipment or subsystems and the reason for inoperability
  2. Action(s) taken to restore the inoperable equipment to OPERABLE status
  3. Summary description of action(s) taken to prevent a recurrence.
- b. When the ACTION statement or other requirements of this LCD cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.15.2.4 GASEOUS RADWASTE TREATMENT SYSTEM operability shall be demonstrated by administrative controls which assure that the offgas treatment system is not bypassed.

RADIOACTIVE EFFLUENTS

TOTAL DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.15.2.5 The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specifications 3.15.1.2(a), 3.15.1.2(b), 3.15.2.2(a), 3.15.2.2(b), 3.15.2.3(a), or 3.15.2.3(b), calculations shall be made including direct radiation contributions from the reactor units and from outside storage tanks to determine whether the above limits of Specification 3.11.4 have been exceeded. If such is the case, in lieu of a Licensee Event Report, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that defines the corrective action(s) to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and include the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR Part 20.405c, shall include an analysis estimating the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentrations of radioactive material involved and the cause of the exposure levels or concentrations. If the estimated dose(s) exceeds the above limits, and if the release condition resulting in violation of 40 CFR Part 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR Part 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.



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RADIOACTIVE EFFLUENTS

TOTAL DOSE (Continued)

LIMITING CONDITION FOR OPERATION

- b. When the ACTION statement or other requirements of this LCO cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

**DELETED**

4.15.2.5.1 Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.15.1.2, 4.15.2.2, and 4.15.2.3 and in accordance with the methodology and parameters described in the ODCM.

4.15.2.5.2 Cumulative dose contributions from direct radiation from the reactor units and from radwaste storage tanks shall be determined in accordance with the methodology and parameters described in the ODCM. This requirement is applicable only under conditions set forth in Specification 3.15.2.5(a).

## RADIOACTIVE EFFLUENTS

### MAIN CONDENSER

#### LIMITING CONDITION FOR OPERATION

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3.15.2.7 The gross gamma radioactivity rate of the noble gases Xe-133, Xe-135, Xe-138, Kr-85m, Kr-87, and Kr-88 measured at the main condenser evacuation system pretreatment monitor station shall be limited to  $\leq 240,000$   $\mu\text{Ci}/\text{second}$ .

#### APPLICABILITY

At all times.

#### ACTION

With the gross gamma radioactivity rate of the aforementioned six noble gases at the pretreatment monitor exceeding 240,000  $\mu\text{Ci}/\text{second}$ , restore the gross radioactivity rate to within its limit within 72 hours or be in at least the Hot Standby Mode within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

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4.15.2.7.1 The radioactivity rate of the aforementioned six noble gases near the outlet of the main condenser air ejector shall be continuously monitored in accordance with ~~Specification 3.14.2.~~ *the ODCM.*

4.15.2.7.2 The gross radioactivity (beta and/or gamma) rate of the aforementioned six noble gases from the main condenser air ejector shall be determined to be within the above limit at the following frequencies by performing an isotopic analysis of a representative sample of gases taken at the pretreatment monitoring station:

- a. Monthly when plant is operating.
- b. Within 4 hours following an evacuation system pretreatment increase of greater than 50 percent, as indicated by the condenser monitor, after factoring out increases due to changes in THERMAL POWER level, in the nominal steady-state fission gas release from the primary coolant.

RADIOACTIVE EFFLUENTS

3/4.15.3 SOLID RADIOACTIVE WASTE

*This specification transferred to the PCP per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.15.3.1 The solid radwaste system shall be used in accordance with the PROCESS CONTROL PROGRAM to provide for the SOLIDIFICATION of wet solid wastes and for the SOLIDIFICATION and packaging of other radioactive wastes, as required, to ensure the meeting of the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the requirements of 10 CFR Part 20 and 10 CFR Part 71 not satisfied, suspend shipments of defective containers of solid radioactive wastes from the site.
- b. When the ACTION statement or other requirements of this LCD cannot be met, steps need not be taken to change the Operational Mode of the Unit. Entry into an Operational Mode or other specified condition may be made if, as a minimum, the requirements of the ACTION statement are satisfied.

SURVEILLANCE REQUIREMENTS

4.15.3.1 The PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of wastes prior to shipment.

## RADIOACTIVE EFFLUENTS

### BASES

#### 3/4.15.1 LIQUID EFFLUENTS

##### 3/4.15.1.1 CONCENTRATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site to UNRESTRICTED AREAS will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will not result in exposures within the Section II.A design objectives of Appendix I, 10 CFR Part 50, to an individual; and the limits of 10 CFR Part 20.106(e) to the population. The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope, and its Maximum Permissible Concentration in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

DELETED

##### 3/4.15.1.2 DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.A, III.A, and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation (LCO) implements the guides set forth in Section II.A of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable" (ALARA). The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the ODCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents will be consistent with the methodology provided in Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, October 1977. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.113.

DELETED

This specification applies to the release of liquid effluents from each reactor at the site. For units with shared radwaste

## RADIOACTIVE EFFLUENTS

### BASES

treatment systems, the liquid effluents from the shared systems are proportioned among the units sharing that system.

DELETED

#### 3/4.15.1.3 LIQUID WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The OPERABILITY of the liquid radwaste treatment system ensures that this system will be available for use whenever liquid effluents require treatment prior to release to UNRESTRICTED AREAS. The requirements that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid effluents will be kept ALARA. This specification implements the requirements of 10 CFR Part 50.36(a), General Design Criterion 60 of Appendix A to 10 CFR Part 50; and design objective Section II.D of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the guide set forth in Section II.A of Appendix I, 10 CFR Part 50, for liquid effluents

DELETED

#### 3/4.15.1.4 LIQUID HOLDUP TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 50, Appendix A, Table II (column 2) at the nearest surface water supply in an UNRESTRICTED AREA.

#### 3/4.15.2 GASEOUS EFFLUENTS

##### 3/4.15.2.1 DOSE RATE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to ensure that at all times the dose rate at the exclusion area boundary from gaseous effluents from all onsite units will be within the annual dose limits of 10 CFR Part 20 for UNRESTRICTED AREAS. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an UNRESTRICTED AREA, either within or outside the exclusion area boundary, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the exclusion area boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the exclusion area

DELETED

## RADIOACTIVE EFFLUENTS

### BASES

boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rates above background to an individual at or beyond the exclusion area boundary to  $\leq 500$  mrem/year to the total body or to  $\leq 3000$  mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year.

DELETED

This specification applies to the release of gaseous effluents from all reactors at the site. For units with shared radwaste treatment systems, the gaseous effluents from the shared system are proportioned among the units sharing that system.

### 3/4.15.2.2 DOSE, NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.B, III.A, and IV.A of Appendix I, 10 CFR Part 50. The LCO implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I, assuring that the releases of radioactive material in gaseous effluents will be kept ALARA. The Surveillance Requirements implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the OFFSITE DOSE CALCULATION MANUAL (ODCM) for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided in Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, October 1977; and Regulatory Guide 1.111, Methods for Estimating Atmosphere Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, Revision 1, July 1977. The ODCM equations provided for determining the air doses at the exclusion area boundary will be based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111.

DELETED

RADIOACTIVE EFFLUENTS

BASES

3/4.15.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL  
IN PARTICULATE FORM AND RADIONUCLIDES OTHER  
THAN NOBLE GASES

*This specification transferred to the ODCM, per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.C, III.A, and IV.A of Appendix I, 10 CFR Part 50. The LCD implements the guides set forth in Section II.C of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I, assuring that the releases of radioactive materials in gaseous effluents will be kept ALARA. The ODCM calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The ODCM calculational methods approved by the NRC for calculating the doses due to the actual release rates of the subject materials are required to be consistent with the methodology provided in Regulatory Guide 1.109, Calculating of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, October 1977; Regulatory Guide 1.111, Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, Revision 1, July 1977. These equations also provide for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for radioiodines, radioactive and material in particulate form, and radionuclides other than noble gases are dependent upon the existing radionuclide pathways to man in the UNRESTRICTED AREA. The pathways examined in the development of these calculations are:

DELETED

- a. Individual inhalation of airborne radionuclides.
- b. Deposition of radionuclides onto green, leafy vegetation with subsequent consumption by man.
- c. Deposition onto grassy areas where MILK ANIMALS and meat-producing animals graze with consumption of the milk and the meat by man.
- d. Deposition on the ground with subsequent exposure of man.

## RADIOACTIVE EFFLUENTS

### BASES

#### 3/4.15.2.4 GASEOUS WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The OPERABILITY of the GASEOUS RADWASTE TREATMENT SYSTEM ensures that the system will be available for use whenever gaseous effluents require treatment prior to release to UNRESTRICTED AREAS. The requirement that the appropriate portions of this system be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept ALARA. This specification implements the requirements of 10 CFR Part 50.36(a), General Design Criterion 60 of Appendix A to 10 CFR Part 50; and design objective Section IID of Appendix I to 10 CFR Part 50. The specific limits governing the use of appropriate portions of the system were specified as a suitable fraction of the guide set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.

DELETED

#### 3/4.15.2.5 DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to meet the reporting requirements of 40 CFR 100.

DELETED

#### 3/4.15.2.6 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas treatment system is maintained below the flammability limit of hydrogen. (Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of hydrogen, automatic diversion to recombiners or injection of dilutants to reduce the concentration below the flammability limit.) Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

#### 3/4.15.2.7 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total-body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in



RADIOACTIVE EFFLUENTS

BASES

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the event this effluent is inadvertently discharged without treatment directly to the environment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

3/4.15.3 SOLID RADIOACTIVE WASTE

*This specification transferred to the PCP per NRC Generic Letter 89-01*

The OPERABILITY of the solid radwaste system ensures that the system will be available for use whenever solid radwastes require processing and packaging prior to offsite shipping. This specification implements the requirements of 10 CFR Part 50.36(a) and General Design Criterion 60 of Appendix A to 10 CFR Part 50. The process parameters included in establishing the PROCESS CONTROL PROGRAM may include, but are not limited to, waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, and mixing and curing times.

DELETED

RADIOLOGICAL ENVIRONMENTAL MONITORING

3.16.1 MONITORING PROGRAM

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.16.1 The radiological environmental monitoring program shall be conducted as specified in table 3.16.1-1.

APPLICABILITY

At all times.

DELETED

ACTION

- a. Any deviations in conducting the radiological environmental monitoring program<sup>(a)</sup> from that as specified in table 3.16.1-1 shall be documented in the Annual Radiological Environmental Surveillance Report; the reasons for these deviations and any appropriate plans for preventing a recurrence shall be stated. (Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, unavailability, inclement weather, malfunction of equipment, or other just reasons. If deviations are due to equipment malfunction, strenuous efforts shall be made to complete corrective action prior to the end of the next sampling period).
- b. With the confirmed<sup>(b)</sup>, measured level of radioactivity as a result of plant effluents in an environmental sampling medium as specified in table 3.16.1-1 exceeding the reporting levels of table 3.16.1-2 when averaged over any calendar quarter, submit to the Commission within 30 days or after confirmation, whichever is later, pursuant to Specification 6.9.2, a Special Report that identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce radioactive effluents so that the potential annual

a. The requirements for radiological environmental monitoring are the same for both units at the site. Thus, a single program including monitoring, land use survey, and quality assurance serves both units.

b. Defined as a confirmatory reanalysis of the original, a duplicate, or a new sample, as appropriate. The results of the confirmatory analysis shall be completed at the earliest time consistent with the analysis.

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RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.1 MONITORING PROGRAM (Continued)

DELETED

dose<sup>(a)</sup> to a MEMBER OF THE PUBLIC is less than the calendar year limits of Specifications 3.11.1.2, 3.11.2.2, and 3.11.2.3 (Unit 2); and 3.15.1.2, 3.15.2.2, and 3.15.2.3 (Unit 1). When more than one of the radionuclides in table 3.16.1-2 is detected in the sampling medium, this report shall be submitted if:

$$\frac{\text{concentration}(1)}{\text{limit level}(1)} + \frac{\text{concentration}(2)}{\text{limit level}(2)} + \dots > 1.0$$

When radionuclides other than those in table 3.16.1-2 are detected and are the result of plant effluents, this report shall be submitted if the calculated annual dose to an individual is equal to or greater than the annual limits of Specifications 3.15.1.2, 3.15.2.2, and 3.15.2.3 (Unit 1); and 3.11.1.2, 3.11.2.2, and 3.11.2.3 (Unit 2). This report is not required if the measured level of radioactivity was not the result of plant effluents; however, in such an event, the condition shall be described in the Annual Radiological Environmental Surveillance Report. The levels of naturally occurring radionuclides need not be reported.

- c. If adequate samples of milk, grass or leafy vegetation (during the growing season) from any of the sample locations required by table 3.16.1-1 can no longer be obtained or the availability is frequently or persistently wanting, efforts shall be made to find replacement locations. The cause of the unavailability and identification of the affected locations and the locations (if any) for obtaining replacement samples shall be submitted to the Commission in the next semi-annual radioactive effluent release report. The locations from which samples became unavailable may be deleted; however, any locations from which suitable replacement samples are available shall be added to the program.
- d. The requirements of Specification 6.9.1.13(b) do not apply.

a. The methodology and parameters used to estimate the potential annual dose to a MEMBER OF THE PUBLIC shall be indicated in this report.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.1 MONITORING PROGRAM (Continued)

DELETED

SURVEILLANCE REQUIREMENTS

4.16.1 The radiological environmental monitoring samples shall be collected, pursuant to table 3.16.1-1, from the locations given in the table and figure in the ODCM and shall be analyzed pursuant to the requirements of tables 3.16.1-1 and 4.16.1-1.

TABLE 3.16.1-1 (SHEET 1 OF 3)

## RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway and/or Sample	Approximate Number of Sample Locations <sup>(*)</sup>	Sampling and Collection Frequency	Type of Analysis and Frequency
1. Airborne			
a. Radioiodine and Particulates	5	Continuous operation of sampler with sample collection weekly.	Radiiodine canister. I-131 weekly.  Particulate sampler. Analyze for gross beta radioactivity not less than 24 hours following filter change and analyze for I-131 weekly. Perform gamma isotopic analysis on affected sample when gross beta activity is 10 times the yearly mean of control samples. Composite (by location) for gamma isotopic analysis quarterly.
2. Direct Radiation	35	Quarterly	Gamma dose quarterly.
3. Ingestion			
a. Milk	4 <sup>(**)</sup>	Bi-weekly	Gamma isotopic and I-131 analyses bi-weekly.
b. Fish <sup>(**)</sup> or Clams	2	Semi-annually	Gamma isotopic analysis on edible portions semi-annually.
c. Grass or Leafy Vegetation	3	Monthly during growing season.	Gamma isotopic analysis monthly. <sup>(**)</sup>
4. Waterborne			
a. Surface	2	Composite <sup>(**)</sup> sample collected monthly.	Gamma isotopic analysis monthly. Composite (by location) for tritium analysis quarterly.
b. Sediment	1	Yearly	Gamma isotopic analysis sample yearly.

DELETED

HATCH - UNIT 1

3.16-5

Amendment No. 110

TABLE 3.16.1-1 (SHEET 2 OF 3)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

Exposure Pathway  
and/or Sample

Approximate Number  
of Sample Locations<sup>(\*)</sup>

Sampling and  
Collection Frequency

Type of Analysis and Frequency

4. (continued)

c. Drinking Water<sup>(\*\*)(\*)</sup>

One sample of river water near the intake and one sample of finished water from each of one to three of nearest water supplies which could be affected by HNP discharge.

River water collected near the intake will be a composite sample; the finished water will be a grab sample. These samples will be collected monthly unless the calculated dose due to consumption of the water is greater than 1 mrem/year; then the collection will be bi-weekly. The collections may revert to monthly should the calculated doses become less than 1 mrem/year.

I-131 analysis on each sample when bi-weekly collections are required. Gross beta and gamma isotopic analyses on each sample; composite (by location) for tritium quarterly.

DELETED

TABLE 3.16.1-1 (SHEET 3 OF 3)

Table Notations

DELETED

- a. Sample locations are shown on figure and table in the ODCM.
- b. Up to three sampling locations within 5 miles and in different sectors will be used as available. In addition, one or more control locations beyond 10 miles will be used.
- c. Commercially or recreationally important fish may be sampled. Clams will be sampled if difficulties are encountered in obtaining sufficient fish samples.
- d. If gamma isotopic analysis is not sensitive enough to meet the Lower Limit of Detection, a separate analysis for I-131 may be performed.
- e. Composite samples shall be collected by collecting an aliquot at intervals not exceeding a few hours.
- f. If it is found that river water downstream of HNP is used for drinking, water samples will be collected and analyzed as specified herein.
- g. A survey shall be conducted annually at least 50 river miles downstream of HNP to identify those who use Altamaha River water for drinking.

TABLE 3.16.1-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS IN ENVIRONMENTAL SAMPLES

Analysis	Water (pCi/l)	Soil (pCi/m <sup>2</sup> )	Grass (pCi/kg, wet)	Milk (pCi/l)	Grass (pCi/kg, wet)
H-3	3 x 10 <sup>1</sup>				
Mn-54	1 x 10 <sup>2</sup>		3 x 10 <sup>4</sup>		
Fe-59	4 x 10 <sup>2</sup>		1 x 10 <sup>4</sup>		
Co-58	1 x 10 <sup>2</sup>		3 x 10 <sup>4</sup>		
Co-60	3 x 10 <sup>2</sup>		1 x 10 <sup>4</sup>		
Zn-65	3 x 10 <sup>2</sup>		2 x 10 <sup>4</sup>		
Zr-95	4 x 10 <sup>2</sup>				
Rb-95	6 x 10 <sup>2</sup>				
I-131	2 x 10 <sup>0</sup>	9 x 10 <sup>-1</sup>		3 x 10 <sup>0</sup>	1 x 10 <sup>2</sup>
Cs-134	3 x 10 <sup>1</sup>	1 x 10 <sup>1</sup>	1 x 10 <sup>2</sup>	6 x 10 <sup>1</sup>	1 x 10 <sup>2</sup>
Cs-137	5 x 10 <sup>1</sup>	2 x 10 <sup>1</sup>	2 x 10 <sup>2</sup>	7 x 10 <sup>1</sup>	2 x 10 <sup>2</sup>
Ba-140	2 x 10 <sup>2</sup>			3 x 10 <sup>2</sup>	
La-140	2 x 10 <sup>2</sup>			4 x 10 <sup>2</sup>	

DELETED

a. for drinking water samples, the reporting level is 2 x 10<sup>4</sup> pCi/l.



DELETED

TABLE H.16.1-1 (SHEET 1 OF 3)  
LOWER LIMIT OF DETECTION (a)

Analysis	Water [pCi/l]	Airborne Particulates or Gases [pCi/m <sup>3</sup> ]	Fish [pCi/kg, wet]	Milk [pCi/l]	Grass [pCi/kg, wet]	Sediment [pCi/kg, dry]
Cross Beta	4	$1 \times 10^{-2}$				
H-3	2000 <sup>(a)</sup>					
Mn-54	20		100			
Fe-55	30		300			
Co-58	20		100			
Co-60	20		100			
Zn-65	30		300			
Zr-95	30					
Mb-95	20					
I-131 <sup>(c)</sup>	1	$7 \times 10^{-2}$		1	60	200
Cs-134	20	$5 \times 10^{-2}$	100	20	60	200
Cs-137	20	$6 \times 10^{-2}$	200	20	80	200
Ba-140	60			60		
La-140	20			20		

DELETED

TABLE 4.16.1-1 (SHEET 1 OF 3)  
LOWER LIMIT OF POLLUTION (a)

Analysis	Water [pCi/l]	Airborne Particulates or Gases [pCi/m <sup>3</sup> ]	Fish [pCi/kg, wet]	Milk [pCi/l]	Grass [pCi/kg, wet]	Sediment [pCi/kg, dry]
Gross Beta	4	$1 \times 10^{-2}$				
H-3	2000 <sup>(a)</sup>					
Mn-54	20		100			
Fe-59	30		300			
Co-58	20		100			
Co-60	20		100			
Zn-65	30		300			
Zr-95	30					
Nb-95	20					
I-131 <sup>(a)</sup>	1	$7 \times 10^{-3}$		1	60	200
Cs-134	20	$5 \times 10^{-2}$	100	20	60	200
Cs-137	20	$6 \times 10^{-2}$	200	20	80	200
Ba-140	60			60		
La-140	20			20		

TABLE 4.16.1-1 (SHEET 2 OF 3)

LOWER LIMIT OF DETECTION

Table Notations

DELETED

- a. The Lower Limit of Detection (LLD) is the smallest concentration of radioactive material in a sample that will be detected with 95-percent probability with 5-percent probability of falsely concluding that a blank observation represents a "real" signal.

For a particular measurement system, which may include radiochemical separation:

$$LLD = \frac{4.66 s_b}{E \cdot V \cdot 2.22 \cdot Y \cdot \exp(-\lambda \Delta T)}$$

where:

- LLD = the "a priori" Lower Limit of Detection (defined as pCi per unit mass or volume)
- $s_b$  = the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute)
- E = the counting efficiency (as counts per disintegration)
- V = the sample size (in units of mass or volume)
- 2.22 = the number of disintegrations per minute per picocurie
- Y = the fractional radiochemical yield (when applicable)
- $\lambda$  = the radioactive decay constant for the particular radionuclide
- $\Delta T$  = the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).
- $\Delta T$  = the elapsed time between midpoint of sample collection period and time of counting (for plant effluents).

TABLE 4.16.1-1 (SHEET 3 OF 3)

LOWER LIMIT OF DETECTION

Table Notations (Continued)

DELETED

The value of  $s$  used in the calculation of the LLD for a detection system shall be based on the actual observed variance of the background counting rate or of the counting rate of the blank samples (as appropriate) rather than on an unverified theoretically predicted variance. Typical values of  $E$ ,  $V$ ,  $Y$ , and  $\Delta T$  should be used in the evaluation.

- b. This does not mean that only the radionuclides in table 4.16.1-1 are to be detected and reported. Other measurable and identifiable peaks, together with the above nuclides, shall be identified and reported. Only manmade radionuclides need be reported.
- c. LLD for drinking water samples. If no drinking water pathway exists, the LLD for gamma isotopic analysis may be used.
- d. If no drinking water pathway exists, a value of 3000 pCi/l may be used.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.2 LAND USE SURVEY

*This specification transferred to the OPGM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.16.2 A land use survey shall be conducted to identify the location of the nearest MILK ANIMAL and the nearest permanent residence in each of the 16 meteorological sectors within a distance of 5 miles and the locations of all MILK ANIMALS within a distance of 3 miles.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With a land use survey identifying a location(s) yielding a calculated thyroid dose or dose commitment greater than the values currently being calculated in Specification 4.15.2.3, submit the new location(s) to the Commission in the next semi-annual effluent release report.
- b. With a land use survey identifying a location(s) yielding a calculated thyroid dose or dose commitment (via the same exposure pathway) 20 percent greater than at a location from which samples are currently being obtained, add the new location(s) to the program within 30 days if samples are available. The sampling location having the lower calculated thyroid dose may then be deleted from the program.
- c. The provisions of Specification 6.9.1.13(b) are not applicable.

SURVEILLANCE REQUIREMENTS

4.16.2 The land use survey shall be conducted once per 12 months by door-to-door survey, by visual survey from automobile or aircraft, by consulting local agriculture authorities, or by a combination of these methods as feasible using the information to provide a good survey. Results of the annual survey, as well as any changes in sampling locations, shall be discussed in the Annual Radiological Environmental Surveillance Report.

RADIOLOGICAL ENVIRONMENTAL MONITORING

3/4.16.3 INTERLABORATORY COMPARISON PROGRAM

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.16.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program that has been approved by the Nuclear Regulatory Commission. Analyses need to be performed only where the type analysis and sample are the same as that required in table 3.16.1-1.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With analyses not being performed as required above, report the corrective actions taken (to prevent a recurrence) in the Annual Radiological Environmental Surveillance Report.
- b. The provisions of Specification 6.9.1.13(b) are not applicable.

SURVEILLANCE REQUIREMENTS

4.16.3 A summary of results obtained as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Surveillance Report.

3/4.16 RADIOLOGICAL ENVIRONMENTAL MONITORING

BASES

3/4.16.1 MONITORING PROGRAM

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The radiological monitoring program required by this specification provides measurements of radiation and radioactive materials in those exposure pathways and for those radionuclides leading to the highest potential radiation exposures of individuals, resulting from the station operation. This monitoring program thereby supplements the radiological effluent monitoring program by measuring concentrations of radioactive materials and levels of radiation that may then be compared with those expected on the basis of the effluent measurements and modeling of the environmental exposure pathways.

DELETED

3/4.16.2 LAND USE SURVEY

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to ensure that changes in the use of UNRESTRICTED AREAS are identified and that modifications to the monitoring program are made, if required, by the results of this survey. This survey satisfies the requirements of Section IV.B.3 of Appendix I to 10 CFR Part 50.

DELETED

3/4.16.3 INTERLABORATORY COMPARISON PROGRAM

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The requirement for participation in an interlaboratory Comparison Program is provided to ensure that independent checks on the precision and accuracy of the measurements of radioactive material in environmental sample matrices are performed as part of a quality assurance program for environmental monitoring to demonstrate that the results are reasonably valid.

DELETED

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 RESPONSIBILITY

6.1.0 The General Manager-Nuclear Plant shall provide direct executive oversight over all aspects of Plant Hatch.

6.1.1 The Assistant General Manager-Plant Operations (AGM-PO) shall be responsible for overall unit operation, except for the Radiological & Environmental Monitoring Program as described below and for delegation in writing of the succession of this responsibility during his absence. Certain plant support functions shall be the responsibility of the Assistant General Manager-Plant Support (AGM-PS).

6.1.2 The General Manager-Nuclear Plant or his designee shall be responsible for the Radiological Environmental Monitoring Program as described in ~~the Specification 3/4.16 of Unit 2~~ and for the writing of the Annual Radiological Environmental Surveillance Report.

6.1.3 Each of the above-mentioned individuals is responsible for the accuracy of the procedures needed to implement his responsibilities.

### 6.2 ORGANIZATION

#### 6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Plant Hatch Unit 2 updated FSAR.
- b. The AGM-PO shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. The Vice President-Nuclear shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the plant to ensure nuclear safety.

Specification 6.19



ADMINISTRATIVE CONTROLS

ANNUAL REPORTS (Continued)

6.9.1.5. Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility and other personnel, including contractors, receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,\* e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- b. Documentation of all challenges to safety/relief valves.
- c. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.6.F.1. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine activity was reduced to less than limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.
- d. Any other unit unique reports required on an annual basis.

ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT<sup>(a)</sup>

Insert 3

6.9.1.6 Routine radiological environmental surveillance reports covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted prior to May 1 of each year. A single report may fulfill this requirement for both units.

6.9.1.7 The Annual Radiological Environmental Surveillance Report shall include summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the reporting period, including (as appropriate) a comparison with the preoperational studies, operational controls, previous environmental surveillance reports, and an assessment of any observed impacts of the plant operation on the environment. The reports shall also include the

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections common to all units at the station.

\*This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.

Insert 3

6.9.1.6 The Annual Radiological Environmental Surveillance Report covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the ODCM and Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

ADMINISTRATIVE CONTROLS

results of the land use surveys required by Specification 3.16.2. of Unit 1 Technical Specifications and the results of licensee participation in the interlaboratory comparison program required by Specification 3.16.3. of Unit 1 Technical Specifications.

The Annual Radiological Environmental Surveillance Report shall include summarized and tabulated results in the format of table 6.9.7.7-1 of all radiological environmental samples taken during the report period, with the exception of naturally occurring radionuclides which need not be reported. In the event that some results are not available for inclusion with the report, the report shall be submitted, noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as practicable in a supplementary report.

The reports shall also include the following:

- a. Summary description of the radiological environmental monitoring program.
- b. Map of all sampling locations as keyed to a table indicating distances and directions from main stack.
- c. Results of the licensee participation in the Interlaboratory Comparison Program.

DELETED

SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT (a)

Insert 4

6.9.1.8 Routine radioactive effluent release reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year.

Any changes to the ODCM shall be submitted with the next semi-annual report in which the change(s) was made effective. In addition, a report of any major changes to the radioactive waste treatment systems shall be submitted with the monthly operating report for the period in which the evaluation was reviewed and accepted by the Plant Review Board.

- a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections that are common to all units at the station; however, the submittal shall specify the releases of radioactive material from each unit.

Insert 4

6.9.1.8 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

HATCH - UNIT 1

6-15b

Amendment No. 710, 449

TABLE 6.9.1.7-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name of Facility Edwin I. Hatch Nuclear Plant Docket No. 50-321, 50-366

Location of Facility Appling County, Georgia Reporting Period \_\_\_\_\_

<u>Medium or Pathway Sampled (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection<sup>(a)</sup></u>	<u>All Indicator Locations Mean Range</u>	<u>Location of Highest Annual Mean</u>		<u>Control Locations Mean Range</u>	<u>Number of REPORTABLE EVENTS</u>
				<u>Name, Distance, and Direction</u>	<u>Mean Range<sup>(b)</sup></u>		

DELETED

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a. Lower Limit of Detection is defined in table notation a. of table 4.16.1-1, Specification 4.16.1. of Unit 1.  
b. Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses.

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ADMINISTRATIVE CONTROLS

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6.9.1.9. The Radioactive Effluent Release Report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit 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 Appendix B thereof.

The Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall include an annual summary of meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing of wind speed, wind direction, atmospheric stability and precipitation (if measured) on magnetic tape or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. This same report shall include an assessment of the radiation doses from liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (figure 3.15-1) during the reporting period if circumstances have changed such that the potential doses are significantly greater than expected at onsite locations as discussed in the ODCM. All assumptions used in making these assessments, i.e., specific activity, exposure time, and location, shall be concluded in these reports. Historical annual average meteorological conditions or meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents, as determined by sampling frequency and measurement, shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the ODCM.

The Radioactive Effluents Release Report shall include the following information for each type of solid waste shipped offsite during the report period:

- a. Container volume.
- b. Total curie quantity (specify whether determined by measurement or estimate).
- c. Principal radionuclides (specify whether determined by measurement or estimate).
- d. Type of waste, e.g., spent resin, compacted dry waste, evaporator bottoms.

ADMINISTRATIVE CONTROLS

- e. Type of container, e.g., LSA, type A, type B, large quantity.
- f. Solidification agent, e.g., cement.

DELETED

The Radioactive Effluent Release Report shall include (on a quarterly basis) unplanned releases from the site to unrestricted areas of radioactive materials in gaseous and liquid effluents that were in excess of 1 Ci, excluding dissolved and entrained gases and tritium for liquid effluents, or those in excess of 150 Ci of noble gases or 0.02 Ci of radioiodines for gaseous releases.

The Radioactive Effluent Release Report shall include any changes to the PROCESS CONTROL PROGRAM and to the OFFSITE DOSE CALCULATION MANUAL made during the reporting period.

MONTHLY OPERATING REPORT

6.9.1.10. Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office of Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

- 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
  - (1) Operation with a Limiting Control Rod Pattern (for Rod Withdrawal Error, RWE) per Specification 3.3.F,
  - (2) The Average Planar Linear Heat Generation Rate (APLHGR) for Specification 3.11.A,
  - (3) The Linear Heat Generation Rate (LHGR) for Specification 3.11.B, and
  - (4) The Minimum Critical Power Ratio (MCPR) for Specifications 3.3.F and 3.11.C and Surveillance Requirement 4.11.C.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents:
  - (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).
  - (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment No. 157 to Facility Operating License DPR-57," dated September 12, 1988.
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements theret, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

## ADMINISTRATIVE CONTROLS

### RECORD RETENTION (Continued)

- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified in Table 5.0.6-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required by the QA Manual.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PRB and the SRB.
- l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.15.
- m. Records of analyses required by the Radiological Environmental Monitoring Program.
- n. Records of the service lives of all safety-related hydraulic and mechanical snubbers including the date at which the service life commences and associated installation and maintenance records.

### 6.11. RADIATION PROTECTION PROGRAM

Insert 5

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

### 6.12. HIGH RADIATION AREA

6.12.1. In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit\*. Any individual or group of individuals permitted

\*Health Physics personnel, or personnel escorted by Health Physics personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.



Insert 5

- o. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

ADMINISTRATIVE CONTROLS

6.16. POST-ACCIDENT SAMPLING AND ANALYSIS

A program shall be established, implemented, and maintained to ensure the capability to obtain and analyze samples of reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere under accident conditions.

The program shall include the following:

- (1) Training of personnel,
- (2) Procedures for sampling and analysis, and
- (3) Provisions for maintenance of sampling and analysis equipment.

6.17. OFFSITE DOSE CALCULATION MANUAL

6.17.1. Licensee-initiated changes to the ODCM shall:

Insert 6

a. Be submitted to the Commission in the semi-annual effluent release report for the period in which the change(s) was made effective. This submittal shall contain:

1. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information. Information submitted should consist of a package of those ODCM pages to be changed, with each page numbered and provided with an approval and date box, together with appropriate analyses or evaluations justifying the change(s);
2. A determination that the change will not reduce the accuracy or reliability of dose calculations or setpoint determinations; and
3. Documentation that the change has been reviewed and found acceptable by the PRB.

b. Become effective upon review and acceptance by the PRB.

Insert 7

Insert 6

- a. Be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.
- c. Be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to 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 (e.g. month/year) the change was implemented.

Insert 7

6.18 RADIOACTIVE EFFLUENTS CONTROL PROGRAM

A program shall be established, implemented, and maintained conforming with 10 CFR 50.36a for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1,

Insert 7 (Continued)

- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be established, implemented, and maintained to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in the use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

Insert 7 (Continued)

6.20 PROCESS CONTROL PROGRAM (PCP)

A program shall be established, implemented, and maintained to contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.

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1.0 DEFINITIONS (Continued)

SOURCE CHECK

A SOURCE CHECK shall be the qualitative assessment of channel response when the channel sensor is exposed to a source of increased radioactivity.

PROCESS CONTROL PROGRAM

Insert 1

The PROCESS CONTROL PROGRAM shall contain the current formula, sampling, analysis, tests, and determinations to be made to ensure that the processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 10 CFR 71, Federal and State regulations, and other requirements governing the disposal of radioactive wastes.

SOLIDIFICATION

*This definition transferred to the PCP per NRC Generic Letter 89-01*

SOLIDIFICATION shall be the conversion of wet radioactive wastes into a form that meets shipping and burial ground requirements.

DELETED

OFFSITE DOSE CALCULATION MANUAL (ODCM)

Insert 2

An ODCM shall be a manual containing the methodology and parameters to be used in the calculation of offsite doses due to radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring instrumentation alarm/setpoints, and in the conducting of environmental radiological monitoring.

GASEOUS RADWASTE TREATMENT SYSTEM

*This definition transferred to the ODCM per NRC Generic Letter 89-01*

The GASEOUS RADWASTE TREATMENT SYSTEM is the offgas holdup system designed and installed to reduce radioactive gaseous effluents by collecting primary coolant system offgases from the primary system and providing for delay or holdup for the purpose of reducing the total radioactivity prior to release to UNRESTRICTED AREAS.

DELETED

Insert 1

*BE IMPLEMENTED BY PROCEDURES WHICH*

The PROCESS CONTROL PROGRAM (PCP) shall contain the current formulas, sampling, analyses, test, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Insert 2

The OFFSITE DOSE CALCULATION MANUAL (ODCM) shall contain the methodology and parameters used in the calculation of offsite doses resulting from radioactive gaseous and liquid effluents, in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Radiological Environmental Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls required by Technical Specification 6.18 and Radiological Environmental Monitoring Programs required by Technical Specification 6.19 and (2) descriptions of the information that should be included in the Annual Radiological Environmental Surveillance Report required by Technical Specification 6.9.1.6 and the Radioactive Effluent Release Report required by Technical Specification 6.9.1.8.

*Semiannual*

INSTRUMENTATION

RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
LIMITING CONDITION FOR OPERATION

3.3.6.9 The radioactive liquid effluent monitoring instrumentation channels shown in table 3.3.6.9-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.1.1 are not exceeded. The alarm/trip setpoints of these channels shall be determined in accordance with the OFFSITE DOSE CALCULATION MANUAL (ODCM).

APPLICABILITY

As shown in table 3.3.6.9-1.

DELETED

ACTION

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, without delay suspend the release of radioactive liquid effluents monitored by the affected channel, declare the channel inoperable, or change to a conservative value.
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.3.6.9-1, take the ACTION shown in table 3.3.6.9-1.
- c. The provisions of Specifications 3.0.3, 3.0.4, and 6.9.1.13(b) are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.6.9 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.3.6.9-1.

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TABLE 3.3.B.9-1 (SHEET 1 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. Gross Radioactivity Monitors Providing Automatic Termination of Release			
Liquid Radwaste Effluent Line	2	(a)	100
2. Gross Radioactivity Monitors not Providing Automatic Termination of Release			
Service Water System Effluent Line	1	(b)	101
3. Flowrate Measurement Devices**			
Liquid Radwaste Effluent Line	1	(a)	102
Discharge Canal	1	(a) (b)	102
4. Service Water System to Closed Cooling Water System Differential Pressure	1	At all times	103

DELETED

\*\*Pump curves may be utilized to estimate flow; in such cases, ACTION statement 102 is not required.

(a) Whenever the radwaste discharge valves are not locked closed.

(b) Whenever the service water system pressure is below the closed cooling water system pressure or  $\Delta P$  indication is not available.

TABLE 3.3.6.9-1 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Table Notations

DELETED

ACTION 100 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may be continued, provided that prior to initiating a release:

- a. At least two independent samples are analyzed in accordance with Specification 4.11.1.1.1.
- b. At least two technically qualified individuals independently verify the release rate calculations and discharge valving.

Otherwise, suspended release of radioactive effluents via this pathway. If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 101 - With the numbers of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided that once per shift grab samples are collected and analyzed for gross radioactivity (beta or gamma) at a Lower Limit of Detection of at least  $10^{-7}$   $\mu\text{Ci/ml}$ . If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 102 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided the flowrate is estimated at least once per 4 hours during actual releases. If the channel remains inoperable for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 103 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, assure that the service water system effluent system monitor is OPERABLE.

TABLE 4.3.6.9-1 (SHEET 1 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

<u>Instrument</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL FUNCTIONAL TEST</u>
1. Gross Gamma Radioactivity Monitors Pro- viding Alarm and Automatic Isolation				
Liquid Rad- waste Efflu- ent Line	D*	P(2)	R	Q(2)
2. Gross Gamma Radioactivity Monitors Pro- viding Alarm but not Provid- ing Automatic Isolation				
Service Water System Efflu- ent Lin	D*	M	R	Q(2)
3. Flowrate Measure- ment Devices				
Liquid Rad- waste Efflu- ent Line	D(2)*	NA	R	Q
Discharge Canal	D(2)*	NA	R	Q
4. Service Water System to Closed Cooling Water System Differential Pressure	D	NA	R	NA

DELETED

TABLE 4.3.6.9-1 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT MONITORING  
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Table Notations

DELETED

\*During releases via this pathway.

- (1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that automatic isolation of this pathway and control room alarm annunciation occurs if any of the following conditions exist:
  - a. Instrument indicates measured levels above the alarm/trip setpoint.
  - b. Instrument indicates an isolation on high alarm.
  - c. Instrument controls are not set in operate mode.
- (2) CHANNEL CHECK shall consist of verifying indication of flow during periods of release. CHANNEL CHECK shall be made at least once daily on any day on which continuous, periodic, or batch releases are made.
- (3) The SOURCE CHECK prior to release shall consist of verifying that the instrument is reading onscale.
- (4) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:
  - a. Instrument indicates measured levels above the alarm setpoint.
  - b. Instrument indicates a downscale failure.
  - c. Instrument controls not set in operate mode.



INSTRUMENTATION

EXPLOSIVE GAS MONITORING

RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

LIMITING CONDITION FOR OPERATION

3.3.6.10 The ~~radioactive gaseous effluent~~ <sup>explosive gas</sup> monitoring instrumentation channels shown in table 3.3.6.10-1 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of Specification 3.11.2.1(a) are not exceeded. ~~The alarm/trip setpoints of these channels shall be determined in accordance with the ODCM.~~

3.11.2.6

APPLICABILITY

As shown in table 3.3.6.10-1.

ACTION

- a. With ~~a radioactive gaseous effluent~~ <sup>an explosive gas</sup> monitoring instrumentation channel alarm/trip setpoint less conservative than a value that will ensure that the limits of 3.11.2.1(a) are met, without delay restore the setpoint to a value that will ensure that the limits of Specification 3.11.2.1(a) are met or declare the channel inoperable <sup>and take the ACTION shown in table 3.3.6.10-1.</sup>
- b. With the number of channels OPERABLE less than the minimum channels required by table 3.3.6.10-1, take the ACTION shown in table 3.3.6.10-1.
- c. The provisions of Specifications 3.0.3, <sup>and</sup> 3.0.4, and 6.0.1.13(b) are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.6.10 Each ~~radioactive gaseous effluent~~ <sup>explosive gas</sup> monitoring instrumentation channel shall be demonstrated OPERABLE by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL FUNCTIONAL TEST operations at the frequencies shown in table 4.3.6.10-1.

Restore the inoperable instrumentation to OPERABLE status within 30 days and, if unsuccessful, prepare and submit a Special Report to the Commission pursuant to Specification 6.9.2 to explain why this inoperability was not corrected in a timely manner.

HATCH - UNIT 2

3/4 3-60g

Amendment No. 49

EXPLOSIVE GAS

TABLE 3.3.6.10-1 SHEET 1 OF 1

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

<u>Instrument</u>	<u>Minimum Channels OPERABLE</u>	<u>Applicability</u>	<u>Parameter</u>	<u>ACTION</u>
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring System				
Hydrogen Monitor	(1)	**	% Hydrogen	106
2. Reactor Building Vent Stack Monitoring System				
a. Noble Gas Activity Monitor	(1)	*	Radioactivity Rate Measurement +	105
b. Iodine Sampler Cartridge	(1)	*	Verify Presence of Cartridge	107
c. Particulate Sampler Filter	(1)	*	Verify Presence of Filter	107
d. Effluent System Flowrate Measurement Device	(1)	*	System Flowrate Measurement	104
e. Sampler Flowrate Measurement Device	(1)	*	Sampler Flowrate Measurement	104
3. Main Stack Monitoring System				
a. Noble Gas Activity Monitor	(1)	*	Radioactivity Rate Measurement +	105
b. Iodine Sampler Cartridge	(1)	*	Verify Presence of Cartridge	107
c. Particulate Sampler Filter	(1)	*	Verify Presence of Filter	107
d. Effluent System Flowrate Measuring Devices	(1)	*	System Flowrate Measurement	104
e. Sampler Flowrate Measuring Device	(1)	*	Sampler Flowrate Measurement	104
4. Condenser Offgas Pretreatment Monitor				
Noble Gas Activity Monitor	(1)	***	Radioactivity Rate Measurement	108

DELETED

EXPLOSIVE GAS

TABLE 3.3.6.10-1 (SHEET 2 OF 2)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Table Notations

~~Monitor must be capable of responding to a Lower Limit of Detection of  $1 \times 10^{-3}$   $\mu\text{Ci}/\text{ml}$ . (Not Used)~~

~~During releases via this pathway. (Not Used)~~

\*\*During main condenser offgas treatment system operation.

~~During operation of the main condenser air ejector. (Not Used)~~

ACTION 104A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided the flowrate is estimated at least once per 4 hours.

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

(Not Used)

DELETED

ACTION 105A - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue, provided grab samples are taken daily and analyzed daily for gross activity. With the number of Main Stack Monitoring System channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, without delay suspend drywell purge.

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

DELETED

ACTION 106 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, operation of the main condenser offgas treatment system may continue provided: (a) gas samples are collected once per 4 hours and analyzed within the ensuing 4 hours, or (b) using a temporary hydrogen analyzer installed in the offgas system line downstream of the recombiner, hydrogen concentration readings are taken and logged every 4 hours.

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

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TABLE 3.3.6.10-1 (SHEET 3 OF 3)

RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Table Notations (Continued)

DELETED

ACTION 107 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent release via this pathway may continue, provided samples are continuously collected with auxiliary sampling equipment for periods on the order of 7 days and analyzed within 48 hours after the end of the sampling period.

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

ACTION 108 - With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, releases to the environment may continue for up to 72 hours provided that:

- a. The offgas system is not bypassed, and
- b. The offgas post-treatment monitor (2D11-K615) or the main stack monitor (D11-K600) is OPERABLE;

Otherwise, be in at least OPERATIONAL CONDITION 2 within 12 hours.

If the number of channels OPERABLE remains less than required by the Minimum Channels OPERABLE requirement for over 30 days, an explanation of the circumstances shall be included in the next semi-annual effluent release report.

TABLE 4.3.6.TD-1 (SHEET 1 OF 2)

EXPLOSIVE GAS

~~A RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS~~

Instrument	CHANNEL CHECK	SOURCE CHECK	CHANNEL CALIBRATION	CHANNEL FUNCTIONAL TEST
1. Main Condenser Offgas Treatment System Explosive Gas Monitoring Hydrogen Monitor	D**	NA	Q(2)	M
2. Reactor Building Vent Stack Monitoring System	DELETED			
a. Noble Gas Activity Monitor	D*	M	R	Q(1)
b. Iodine Sampler Cartridge	W*(3)	NA	NA	NA
c. Particulate Sampler Filter	W*(3)	NA	NA	NA
d. Effluent System Flowrate Measuring Device	D*	NA	R	Q
e. Sampler Flowrate Measuring Device	D*	NA	R	Q
3. Main Stack Monitoring System	DELETED			
a. Noble Gas Activity Monitor	D*	M	R	Q(1)
b. Iodine Sampler Cartridge	W*(3)	NA	NA	NA
c. Particulate Sampler	W*(3)	NA	NA	NA
d. Flowrate Monitor	D*	NA	R	Q
e. Sampler Flowrate Monitor	D*	NA	R	Q
4. Condenser Offgas Pretreatment Monitor Noble Gas Activity Monitor	D***	M	R	Q(1)

TABLE 4.3.6.10-1 (SHEET 2 OF 2)  
~~A RADIOACTIVE GASEOUS EFFLUENT MONITORING~~  
EXPLOSIVE GAS  
INSTRUMENTATION SURVEILLANCE REQUIREMENT

Table Notations

~~\*During releases via this pathway. (Not Used)~~

\*\*During main condenser offgas treatment system operation.

~~\*\*\*During operation of the main condenser air ejector. (Not Used)~~  
(Not Used)

(1) The CHANNEL FUNCTIONAL TEST shall also demonstrate that control room alarm annunciation occurs if any of the following conditions exist:

- a. Instrument indicates measured levels above the alarm/trip setpoint.
- b. Circuit failure occurs.
- c. Instrument indicates a downscale failure.

DELETED

(2) The CHANNEL CALIBRATION shall include the use of standard gas samples containing a nominal:

- a. One volume-percent hydrogen, balance nitrogen
- b. Four volume-percent hydrogen, balance nitrogen.

(3) ~~The CHANNEL CHECK shall consist of verifying the presence of a filter element and sampler flow at the weekly filter changeout.~~  
(Not Used)

DELETED

3/4.11 RADIOACTIVE EFFLUENTS

3/4.11.1 LIQUID EFFLUENTS

CONCENTRATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.1.1 The concentration of radioactive material released at any time from the site to UNRESTRICTED AREAS (figure 3.11-1) shall be limited to the concentrations specified in 10 CFR Part 20, 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  $2 \times 10^{-4}$   $\mu\text{Ci/ml}$  total activity.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the concentration of radioactive material released from the site to UNRESTRICTED AREAS exceeding the above limits, without delay restore concentration within the above limits and provide notification to the Commission by including a discussion of the causes and corrective actions taken per Specification 6.9.1.6.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid effluents shall be sampled and analyzed according to the sampling and analysis program of table 4.11.1-1.

4.11.1.1.2 The result of radioactive analysis shall be used in accordance with the methods of the ODCM to assure that the concentrations at the point of release are maintained within the limits of Specification 3.11.1.1.

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TABLE 4.11.1-1 (SHEET 1 OF 2)  
RADIOACTIVE LIQUID EFFLUENT SAMPLING AND ANALYSIS PROGRAM

Liquid Release Type	Sampling Frequency <sup>(a)</sup>	Minimum Analysis Frequency	Minimum Type of Activity Analysis	Lower Limit of Detection <sup>(b)</sup> (µCi/ml)
Batch Waste Release Tanks	P Each Batch	P Each Batch	Principal Gamma Emitters <sup>(c)</sup>	$5 \times 10^{-10}$
	P One Batch/M	M	I-131	$1 \times 10^{-9}$
	P Each Batch	M Composite <sup>(c)</sup>	Dissolved and Entrained Gases H-3	$1 \times 10^{-9}$
	P Each Batch	Q Composite <sup>(c)</sup>	Gross Alpha Sr-89 Sr-90 Fe-55	$1 \times 10^{-7}$ $5 \times 10^{-6}$ $2 \times 10^{-6}$



TABLE 4.11.1-1 (SHEET 2 OF 2)

RADIOACTIVE LIQUID EFFLUENT SAMPLING AND ANALYSIS PROGRAM

Table Notations

DELETED

- a. The Lower Limit of Detection is defined in table notation (a) of table 4.16.1-1 of Unit 1, Specification 4.16.1.
- b. For certain radionuclides with low-gamma yield or low energies or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the Lower Limit of Detection. Under these circumstances, the Lower Limit of Detection may be increased inversely proportional to the magnitude of the gamma yield (i.e.,  $5 \times 10^{-7} I$ , where:  $I$  = photon abundance expressed as a decimal fraction), but in no case shall the Lower Limit of Detection, as calculated in this manner for a specific radionuclide, be greater than 10 percent of the Maximum Permissible Concentration value specified in 10 CFR 20, Appendix B, Table II (column 2).
- c. 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 that is representative of the liquids released.
- d. A batch release is the discharge of liquid wastes of a discrete volume. Prior to sampling for analyses, each batch shall be isolated and then thoroughly mixed by a method described in the ODCM to assure representative sampling.
- e. The principal gamma emitters for which the Lower Limit of Detection specification will apply are exclusively the following radionuclides: Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144. This list does not mean that only these nuclides are to be detected and reported. Other measurable and identifiable peaks together with the above nuclides, shall also be identified and reported.

RADIOACTIVE EFFLUENTS

DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.1.2 The dose or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released, from each reactor unit, from the site (figure 3.11-1) shall be limited to:

**DELETED**

- a. During any calendar quarter to less than or equal to 1.5 mrem to the total body and to less than or equal to 5 mrem to any organ
- b. During any calendar year to less than or equal to 3 mrem to the total body and to less than or equal to 10 mrem to any organ.

APPLICABILITY

At all times.

ACTION

- a. With the calculated dose from the release of radioactive materials in liquid effluents exceeding any of the above limits, in lieu of any other report required by Specification 6.9.1, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions to be taken to reduce the releases of radioactive materials in liquid effluents to ensure that subsequent releases will be in compliance with the above limits. (This report shall also include: (a) the results of radiological analyses of the drinking water source and (b) the radiological impact on finished drinking water supplies with regard to the requirements of 40 CFR 141, Safe Drinking Water Act.)
- b. The requirements of Specifications 3.0.3 and 3.0.4 do not apply.

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RADIOACTIVE EFFLUENTS

DOSE

SURVEILLANCE REQUIREMENTS

DELETED

4.11.1.2 Dose Calculations - Cumulative dose contributions from liquid effluents shall be determined monthly in accordance with the ODCM.

## RADIOACTIVE EFFLUENTS

### LIQUID WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

### LIMITING CONDITION FOR OPERATION

3.11.1.3 The liquid radwaste treatment system as described in the ODCM shall be used to reduce the radioactive materials in liquid wastes prior to their discharge when the projected doses due to the liquid effluent per unit from the site (figure 3.11-1) when projected for the calendar quarter would exceed 0.18 mrem to the total body or 0.62 mrem to any organ.

### APPLICABILITY

At all times.

DELETED

### ACTION

- a. With radioactive liquid waste being discharged without treatment and in excess of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that includes the following information:
  1. Identification of the inoperable equipment or subsystems and the reason for inoperability
  2. Action(s) taken to restore the inoperable equipment to OPERABLE status
  3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

### SURVEILLANCE REQUIREMENTS

4 11.1.3.1 Doses due to liquid releases shall be projected monthly, in accordance with the ODCM, during periods in which discharge of untreated liquid effluents containing radioactive materials to UNRESTRICTED AREAS occurs or is expected to occur.

RADIOACTIVE EFFLUENTS

3/4.11.2 GASEOUS EFFLUENTS

DOSE RATE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.2.1 The dose rate at any time in the UNRESTRICTED AREAS (figure 3.11-1) due to radioactive materials released in gaseous effluents from the site shall be limited to the following values:

**DELETED**

- a. The dose rate limit for noble gases shall be  $\leq 500$  mrem/year to the total body and  $\leq 3000$  mrem/year to the skin
- b. The dose rate limit for I-131, I-133, tritium, and for all radioactive materials in particulate form and radionuclides other than noble gases with half-lives greater than 8 days shall be  $\leq 1500$  mrem/year to any organ.

APPLICABILITY

At all times.

ACTION

With the dose rate(s) exceeding the above limits, without delay decrease the release rate to comply with the limit(s) given in Specification 3.11.2.1.

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures described in the ODCM.

4.11.2.1.2 The dose rate due to radioactive materials other than noble gases in gaseous effluents shall be determined to be within the above limits in accordance with the methods and procedures described in the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in table 4.11.2-1.

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TABLE H.11-2-1 (SHEET 1 OF 3)  
 RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Gaseous Release Type	Sampling Frequency	Analysis Frequency	Type of Activity Analysis	Lower Limit of (mCi/mil) Detection <sup>(**)</sup>
A. Environmental Release Points 1. Main Stack 2. Reactor Building Vent	M <sup>(c)</sup> Grab Sample	M <sup>(c)</sup>	Principal Gamma Emitters <sup>(**)</sup>	1 x 10 <sup>-10</sup>
	Continuous <sup>(**)</sup>	W <sup>(c)</sup> Charcoal Sample	N-3	1 x 10 <sup>-6</sup>
B. All Release Types (as listed in A above)	Continuous <sup>(**)</sup>	W <sup>(c)</sup> Particulate Sample	I-131 I-133	1 x 10 <sup>-12</sup> 1 x 10 <sup>-15</sup>
	Continuous <sup>(**)</sup>	W <sup>(c)</sup> Particulate Sample	Principal Gamma Emitters <sup>(**)</sup> (I-131, Others)	1 x 10 <sup>-11</sup>
	Continuous <sup>(**)</sup>	M Composite Particulate Sample	Gross Alpha	1 x 10 <sup>-11</sup>
	Continuous <sup>(**)</sup>	Q Composite Particulate Sample	Sr-89, Sr-90	1 x 10 <sup>-11</sup>

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TABLE 4.11.2-1 (SHEET 2 OF 3)

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Table Notations

DELETED

- a. Lower Limit of Detection is defined in table notation (a) of table 4.16.1-1 of Unit 1, Specification 4.16.1.
- b. For certain radionuclides with low-gamma yield or low energies, or for certain radionuclide mixtures, it may not be possible to measure radionuclides in concentrations near the Lower Limit of Detection. Under these circumstances, the Lower Limit of Detection may be increased inversely proportional to the magnitude of the gamma yield (i.e.,  $1 \times 10^{-4}/I$ , where  $I$  = photon abundance expressed as a decimal fraction), but in no case shall the Lower Limit of Detection, as calculated in this manner for a specific radionuclide, be greater than 10 percent of the Maximum Permissible Concentration value specified in 10 CFR 20, Appendix B, Table II (column 1).
- c. Sampling and analyses for principal gamma emitters shall also be performed following shutdown, startup, or a THERMAL POWER change exceeding 15 percent of the RATED THERMAL POWER within a 1-hour period if analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant and the Main Stack Noble Gas Activity Monitor reading have increased more than a factor of 3.
- d. Sampling shall be performed weekly, and analyses shall be completed within 48 hours after changing (or after removal from sampler). Sampling shall also be performed once per 24 hours for 7 days following each shutdown, startup, or THERMAL POWER change exceeding 15-percent RATED THERMAL POWER in 1 hour and analyses completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding Lower Limits of Detection may be increased by a factor of 10. The more frequent sampling and analysis requirement applies only if analysis shows that the DOSE EQUIVALENT I-131 concentration in the primary coolant and the Main Stack Noble Gas Activity Monitor Reading have increased more than a factor of 3.
- e. The ratio of the sample flowrate to the sampled stream flowrate shall be known for the time period covered by each dose or dose rate calculation made in accordance with Specifications 3.11.2.1, 3.11.2.2, and 3.11.2.3.
- f. The principal gamma emitters for which the Lower Limit of Detection specification will apply are exclusively the following radionuclides: Kr-87, Kr-88, Xe-133, Xe-133m, Xe-135, and Xe-138 for gaseous emissions; and Mn-54, Fe-59, Co-58, Co-60, Zn-65, Mo-99, Cs-134, Cs-137, Ce-141, and Ce-144 for particulate emissions. This list does not mean that only these nuclides are to be detected and reported. Other measurable and identifiable peaks, together with the above nuclides, shall be identified and reported. Nuclides below

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TABLE 4.11.2-1 (SHEET 3 OF 3)

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

Table Notations (Continued)

DELETED

only these nuclides are to be detected and reported. Other measurable and identifiable peaks, together with the above nuclides, shall also be identified and reported. Nuclides below the Lower Limit of Detection for the analyses should not be reported as being present at the Lower Limit of Detection level for that nuclide. When unusual circumstances result in Lower Limit(s) of Detection higher than required, the reasons shall be documented in the semi-annual effluent release report.



RADIOACTIVE EFFLUENTS

DOSE, NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.2.2 The air dose in UNRESTRICTED AREAS (figure 3.11-1) due to noble gases released in gaseous effluents from each reactor unit shall be limited to the following:

- a. During any calendar quarter, to  $\leq 5$  mrad for gamma radiation and  $\leq 10$  mrad for beta radiation
- b. During any calendar year, to  $\leq 10$  mrad for gamma radiation and  $\leq 20$  mrad for beta radiation.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated air dose from radioactive noble gases in gaseous effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report identifying the cause(s) for exceeding the limit(s) and defining the corrective actions taken to reduce the releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.2.
- b. The requirements of Specifications 3.0.3 and 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.11.2.2 Dose Calculations - Cumulative air dose contributions in UNRESTRICTED AREAS due to noble gases for the total time period shall be determined in accordance with the ODCM monthly.

RADIOACTIVE EFFLUENTS

DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM, AND RADIONUCLIDES OTHER THAN NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.2.3 The dose to any organ of a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to UNRESTRICTED AREAS (figure 3.11-1) from each reactor unit shall be limited to the following:

- a. During any calendar quarter to  $\leq 7.5$  mrem to any organ.
- b. During any calendar year to  $\leq 15$  mrem to any organ.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated dose from the release of I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report identifying the cause(s) for exceeding the limit(s) and defining the corrective actions taken to reduce releases and the proposed corrective actions to be taken to assure that subsequent releases will be in compliance with Specification 3.11.2.3.
- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3 Dose Calculations - Cumulative organ dose contributions to a MEMBER OF THE PUBLIC from I-131, I-133, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released to UNRESTRICTED AREAS from each reactor unit for the current calendar quarter and the current calendar year shall be determined in accordance with the ODCM monthly.

RADIOACTIVE EFFLUENTS

GASEOUS RADWASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.2.4 The GASEOUS RADWASTE TREATMENT SYSTEM as described in the ODCM shall be in operation.

APPLICABILITY

DELETED

Whenever the main condenser air ejector system is in operation.

ACTION

- a. With the GASEOUS RADWASTE TREATMENT SYSTEM inoperable for more than 7 days, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report which includes the following information:
1. Identification of the inoperable equipment or subsystems and the reason for inoperability.
  2. Action(s) taken to restore the inoperable equipment to OPERABLE status.
  3. Summary description of action(s) taken to prevent a recurrence.
- b. The requirements of Specifications 3.0.3 and 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.11.2.4 GASEOUS RADWASTE TREATMENT SYSTEM operability shall be demonstrated by administrative controls which assure that the offgas treatment system is not bypassed.

RADIOACTIVE EFFLUENTS

3/4.11.2.5 TOTAL DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
LIMITING CONDITION FOR OPERATION

3.11.2.5 The annual (calendar year) dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources shall be limited to less than or equal to 25 mrem to the total body or any organ, except the thyroid, which shall be limited to less than or equal to 75 mrem.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents exceeding twice the limits of Specifications 3.11.1.2(a), 3.11.1.2(b), 3.11.2.2(a), 3.11.2.2(b), 3.11.2.3(a), or 3.11.2.3(b), calculations shall be made including direct radiation contributions from the reactor units and from outside storage tanks to determine whether the above limits of Specification 3.11.4 have been exceeded. If such is the case, in lieu of a Licensee Event Report, prepare and submit to the Commission within 30 days, pursuant to Specification 6.9.2, a Special Report that defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and include the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR Part 20.405c, shall include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources, including all effluent pathways and direct radiation, for the calendar year that includes the release(s) covered by this report. It shall also describe levels of radiation and concentrations of radioactive material involved and the cause of the exposure levels or concentrations. If the estimated dose(s) exceeds the above limits, and if the release condition resulting in violation of 40 CFR Part 190 has not already been corrected, the Special Report shall include a request for a variance in accordance with the provisions of 40 CFR Part 190. Submittal of the report is considered a timely request, and a variance is granted until staff action on the request is complete.

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RADIOACTIVE EFFLUENTS

3/4.11.2.5 TOTAL DOSE (Continued)

LIMITING CONDITION FOR OPERATION

- b. The provisions of Specifications 3.0.3 and 3.0.4 are not applicable.

SURVEILLANCE REQUIREMENTS

DELETED

4.11.2.5.1 Cumulative dose contributions from liquid and gaseous effluents shall be determined in accordance with Specifications 4.11.1.2, 4.11.2.2, and 4.11.2.3 and in accordance with the methodology and parameters described in the ODCM.

4.11.2.5.2 Cumulative dose contributions from direct radiation from the reactor units and from radioactive waste storage tanks shall be determined in accordance with the methodology and parameters described in the ODCM. This requirement is applicable only under conditions set forth in Specification 3.11.2.5(a).

## RADIOACTIVE EFFLUENTS

### MAIN CONDENSER

#### LIMITING CONDITION FOR OPERATION

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3.11.2.7 The gross gamma radioactivity rate of the noble gases Xe-133, Xe-135, Xe-138, Kr-85m, Kr-87, and Kr-88 measured at the main condenser evacuation system pretreatment monitor station shall be limited to  $\leq 240,000$   $\mu\text{Ci}/\text{second}$ .

#### APPLICABILITY

At all times.

#### ACTION

With the gross gamma radioactivity rate of the aforementioned six noble gases at the pretreatment monitor exceeding  $240,000$   $\mu\text{Ci}/\text{second}$ , restore the gross radioactivity rate to within its limit within 72 hours or be in at least OPERATIONAL CONDITION 2 within the next 12 hours.

#### SURVEILLANCE REQUIREMENTS

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4.11.2.7.1 The radioactivity rate of the aforementioned six noble gases near the outlet of the main condenser air ejector shall be continuously monitored in accordance with ~~Specification 4.2.6.10.~~ *the ODCM.*

4.11.2.7.2 The gross radioactivity (beta and/or gamma) rate of the six aforementioned noble gases from the main condenser air ejector shall be determined to be within the above limit at the following frequencies by performing an isotopic analysis of a representative sample of gases taken at the pretreatment monitoring station:

- a. Monthly when plant is operating.
- b. Within 4 hours following an evacuation system pretreatment increase of greater than 50 percent, as indicated by the condenser monitor, after factoring out increases due to changes in THERMAL POWER level, in the nominal steady-state fission gas release from the primary coolant.

RADIOACTIVE EFFLUENTS

3/4.11.3 SOLID RADIOACTIVE WASTE

*This specification transferred to the PCP per NRC Generic Letter 89-01*

LIMITING CONDITION FOR OPERATION

3.11.3.1 The solid radwaste system shall be used in accordance with the PROCESS CONTROL PROGRAM to provide for the SOLIDIFICATION of wet solid wastes and for the SOLIDIFICATION and packaging of other radioactive wastes, as required, to ensure the meeting of the requirements of 10 CFR Part 20 and of 10 CFR Part 71 prior to shipment of radioactive wastes from the site.

APPLICABILITY

At all times.

DELETED

ACTION

- a. With the requirements of 10 CFR Part 20 and 10 CFR Part 71 not satisfied, suspend shipments of defective containers of solid radioactive wastes from the site.
- b. The requirements of Specifications 3.0.3 and 3.0.4 do not apply.

SURVEILLANCE REQUIREMENTS

4.11.3.1.1 The PROCESS CONTROL PROGRAM shall be used to verify the SOLIDIFICATION of wastes prior to shipment.

3/4.12 RADIOLOGICAL ENVIRONMENTAL MONITORING

*This specification transferred to the ODCM per NRC Generic Letter 89-01*  
*See specification section 3/4.16 for HXP-Unit 1.*

DELETED



## INSTRUMENTATION

### BASES

#### MONITOR: ~ INSTRUMENTATION (Continued)

##### FIRE DETECTION INSTRUMENTATION (Continued)

In the event that a portion of the fire detection instrumentation is inoperable, increasing the frequency of fire patrols in the affected areas is required to provide detection capability until the inoperable instrumentation is restored to OPERABILITY.

DELETED

##### 3/4.3.6.9 RADIOACTIVE LIQUID EFFLUENT INSTRUMENTATION

The radioactive liquid effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in liquid effluents during actual or potential releases of liquid effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with the methods in the OFFSITE DOSE CALCULATION MANUAL (ODCM) to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.

DELETED

##### EXPLOSIVE GAS

##### 3/4.3.6.10 RADIOACTIVE GASEOUS EFFLUENT INSTRUMENTATION

~~The radioactive gaseous effluent instrumentation is provided to monitor and control, as applicable, the releases of radioactive materials in gaseous effluents during actual or potential releases of gaseous effluents. The alarm/trip setpoints for these instruments shall be calculated in accordance with the methods in the ODCM to ensure that the alarm/trip will occur prior to exceeding the limits of 10 CFR Part 20. The monitoring instrumentation includes provisions for monitoring (and controlling) the concentrations of potentially explosive gas mixtures in the main condenser offgas treatment system. The OPERABILITY and use of this instrumentation is consistent with the requirements of General Design Criteria 60, 63, and 64 of Appendix A to 10 CFR Part 50.~~

on

##### 3/4.3.7 TURBINE OVERSPEED PROTECTION SYSTEM

This specification is provided to ensure that the turbine overspeed protection system instrumentation and the turbine speed control valves are OPERABLE and will protect the turbine from excessive overspeed. Protection from turbine excessive overspeed is required since excessive overspeed of the turbine could generate potentially damaging missiles which could impact and damage safety-related components, equipment or structures.

## RADIOACTIVE EFFLUENTS

### BASES

#### 3/4.11.1 LIQUID EFFLUENTS

##### 3/4.11.1.1 CONCENTRATION

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to ensure that the concentration of radioactive materials released in liquid waste effluents from the site to UNRESTRICTED AREAS will be less than the concentration levels specified in 10 CFR Part 20, Appendix B, Table II. This limitation provides additional assurance that the levels of radioactive materials in bodies of water outside the site will not result in exposures within the Section II.A design objectives of Appendix I, 10 CFR Part 50, to an individual; and the limits of 10 CFR Part 20.106(e) to the population. The concentration limit for noble gases is based upon the assumption that Xe-135 is the controlling radioisotope, and its Maximum Permissible Concentration in air (submersion) was converted to an equivalent concentration in water using the methods described in International Commission on Radiological Protection (ICRP) Publication 2.

DELETED

##### 3/4.11.1.2 DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.A, III.A, and IV.A of Appendix I, 10 CFR Part 50. The Limiting Condition for Operation (LCO) implements the guides set forth in Section II.A of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I to assure that the releases of radioactive material in liquid effluents will be kept "as low as is reasonably achievable" (ALARA). The dose calculations in the ODCM implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I be shown by calculational procedure based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The equations specified in the ODCM for calculating the doses due to the actual release rates of radioactive materials in liquid effluents will be consistent with the methodology provided in Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, October 1977. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.113.

DELETED

This specification applies to the release of liquid effluents from each reactor at the site. For units with shared radwaste

## RADIOACTIVE EFFLUENTS

### BASES

treatment systems, the liquid effluents from the shared systems are proportioned among the units sharing that system.

DELETED

#### 3/4.11.1.3 LIQUID WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

The OPERABILITY of the liquid radwaste treatment system ensures that this system will be available for use whenever liquid effluents require treatment prior to release to UNRESTRICTED AREAS. The requirements that the appropriate portions of this system be used when specified provides assurance that the releases of radioactive materials in liquid effluents will be kept ALARA. This specification implements the requirements of 10 CFR Part 50.36(a), General Design Criterion 60 of Appendix A to 10 CFR Part 50; and design objective Section II.D of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the liquid radwaste treatment system were specified as a suitable fraction of the guide set forth in Section II.A of Appendix I, 10 CFR Part 50, for liquid effluents.

DELETED

#### 3/4.11.1.4 LIQUID HOLDUP TANKS

Restricting the quantity of radioactive material contained in the specified tanks provides assurance that in the event of an uncontrolled release of the tanks' contents, the resulting concentrations would be less than the limits of 10 CFR Part 20, Appendix A, Table II (column 2) at the nearest surface water supply in an UNRESTRICTED AREA.

#### 3/4.11.2 GASEOUS EFFLUENTS

##### 3/4.11.2.1 DOSE RATE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to ensure that at all times the dose rate at the exclusion area boundary from gaseous effluents from all onsite units will be within the annual dose limits of 10 CFR Part 20 for UNRESTRICTED AREAS. The annual dose limits are the doses associated with the concentrations of 10 CFR Part 20, Appendix B, Table II. These limits provide reasonable assurance that radioactive material discharged in gaseous effluents will not result in the exposure of an individual in an UNRESTRICTED AREA, either within or outside the exclusion area boundary, to annual average concentrations exceeding the limits specified in Appendix B, Table II of 10 CFR Part 20 (10 CFR Part 20.106(b)). For individuals who may at times be within the exclusion area boundary, the occupancy of the individual will be sufficiently low to compensate for any increase in the atmospheric diffusion factor above that for the exclusion area

DELETED

## RADIOACTIVE EFFLUENTS

### BASES

boundary. The specified release rate limits restrict, at all times, the corresponding gamma and beta dose rate above background to an individual at or beyond the exclusion area boundary to  $\leq 500$  mrem/year to the total body or to  $\leq 3000$  mrem/year to the skin. These release rate limits also restrict, at all times, the corresponding thyroid dose rate above background to a child via the inhalation pathway to less than or equal to 1500 mrem/year.

DELETED

This specification applies to the release of gaseous effluents from all reactors at the site. For units with shared radwaste treatment systems, the gaseous effluents from the shared system are proportioned among the units sharing that system.

### 3/4.11.2.2 DOSE, NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.B, III.A, and IV.A of Appendix I, 10 CFR Part 50. The LCD implements the guides set forth in Section II.B of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I, assuring that the releases of radioactive material in gaseous effluents will be kept ALARA. The Surveillance Requirements implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I is to be shown by calculational procedures based on models and data such that the actual exposure of an individual through the appropriate pathways is unlikely to be substantially underestimated. The dose calculations established in the OFFSITE DOSE CALCULATION MANUAL (ODCM) for calculating the doses due to the actual release rates of radioactive noble gases in gaseous effluents will be consistent with the methodology provided in Regulatory Guide 1.109, Calculation of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision 1, October 1977; and Regulatory Guide 1.111, Methods for Estimating Atmosphere Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, Revision 1, July 1977. The ODCM equations provided for determining the air doses at the exclusion area boundary will be based upon the historical average atmospheric conditions. NUREG-0133 provides methods for dose calculations consistent with Regulatory Guides 1.109 and 1.111.

DELETED

## RADIOACTIVE EFFLUENTS

### BASES

#### 3/4.11.2.3 DOSE, RADIOIODINES, RADIOACTIVE MATERIAL IN PARTICULATE FORM AND RADIONUCLIDES OTHER THAN NOBLE GASES

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

This specification is provided to implement the requirements of Sections II.C, III.A, and IV.A of Appendix I, 10 CFR Part 50. The LCO implements the guides set forth in Section II.C of Appendix I. The ACTION statements provide the required operating flexibility and at the same time implement the guides set forth in Section IV.A of Appendix I, assuring that the releases of radioactive materials in gaseous effluents will be kept ALARA. The ODCM calculational methods specified in the surveillance requirements implement the requirements in Section III.A of Appendix I, which state that conformance with the guides of Appendix I be shown by calculational procedures based on models and data such that the actual exposure of an individual through appropriate pathways is unlikely to be substantially underestimated. The ODCM calculational method approved by the NRC for calculating the doses due to the actual release rates of the subject materials are required to be consistent with the methodology provided in Regulatory Guide 1.109, Calculating of Annual Doses to Man from Routine Releases of Reactor Effluents for the Purpose of Evaluating Compliance with 10 CFR Part 50, Appendix I, Revision I, October 1977; Regulatory Guide 1.111, Methods for Estimating Atmospheric Transport and Dispersion of Gaseous Effluents in Routine Releases from Light-Water-Cooled Reactors, Revision 1, July 1977. These equations also provide for determining the actual doses based upon the historical average atmospheric conditions. The release rate specifications for radioiodines, radioactive and material in particulate form, and radionuclides other than noble gases are dependent upon the existing radionuclide pathways to man in the UNRESTRICTED AEA. The pathways examined in the development of these calculations are:

- a. Individual inhalation of airborne radionuclides.
- b. Deposition of radionuclides onto green, leafy vegetation with subsequent consumption by man.
- c. Deposition onto grassy areas where MILK ANIMALS and meat-producing animals graze with consumption of the milk and the meat by man.
- d. Deposition on the ground with subsequent exposure of man.

DELETED

## RADIOACTIVE EFFLUENTS

### BASES

#### 3/4.11.2.4 GASEOUS WASTE TREATMENT

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

~~The OPERABILITY of the GASEOUS RADWASTE TREATMENT SYSTEM ensures that the system will be available for use wherever gaseous effluents require treatment prior to release to UNRESTRICTED AREAS. The requirement that the appropriate portions of this system be used when specified provides reasonable assurance that the releases of radioactive materials in gaseous effluents will be kept ALARA. This specification implements the requirements of 10 CFR Part 50.36(a), General Design Criterion 60 of Appendix A to 10 CFR Part 50; and design objective Section IID of Appendix I to 10 CFR Part 50. The specified limits governing the use of appropriate portions of the system were specified as a suitable fraction of the guide set forth in Sections II.B and II.C of Appendix I, 10 CFR Part 50, for gaseous effluents.~~

DELETED

#### 3/4.11.2.5 DOSE

*This specification transferred to the ODCM per NRC Generic Letter 89-01*

~~This specification is provided to meet the reporting requirements of 40 CFR 190.~~

DELETED

#### 3/4.11.2.6 EXPLOSIVE GAS MIXTURE

This specification is provided to ensure that the concentration of potentially explosive gas mixtures contained in the waste gas treatment system is maintained below the flammability limit of hydrogen. (Automatic control features are included in the system to prevent the hydrogen and oxygen concentrations from reaching these flammability limits. These automatic control features include isolation of the source of hydrogen, automatic diversion to recombiners or injection of dilutants to reduce the concentration below the flammability limit.) Maintaining the concentration of hydrogen below its flammability limit provides assurance that the releases of radioactive materials will be controlled in conformance with the requirements of General Design Criterion 60 of Appendix A to 10 CFR Part 50.

#### 3/4.11.2.7 MAIN CONDENSER

Restricting the gross radioactivity rate of noble gases from the main condenser provides reasonable assurance that the total-body exposure to an individual at the exclusion area boundary will not exceed a small fraction of the limits of 10 CFR Part 100 in

## RADIOACTIVE EFFLUENTS

### BASES

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the event this effluent is inadvertently discharged without treatment directly to the environment. This specification implements the requirements of General Design Criteria 60 and 64 of Appendix A to 10 CFR Part 50.

#### 3/4-11.3 SOLID RADIOACTIVE WASTE

*This specification transferred to the PCP per NRC Generic Letter 89-01*

The OPERABILITY of the solid radwaste system ensures that the system will be available for use whenever solid radwastes require processing and packaging prior to offsite shipping. This specification implements the requirements of 10 CFR Part 50.36(a) and General Design Criterion 60 of Appendix A to 10 CFR Part 50. The process parameters included in establishing the PROCESS CONTROL PROGRAM may include, but are not limited to, waste type, waste pH, waste/liquid/solidification agent/catalyst ratios, waste oil content, waste principal chemical constituents, and mixing and curing times.

DELETED

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 RESPONSIBILITY

6.1.0 The General Manager-Nuclear Plant shall provide direct executive oversight over all aspects of Plant Hatch.

6.1.1 The Assistant General Manager-Plant Operations (AGM-PO) shall be responsible for overall unit operation, except for the Radiological Environmental Monitoring Program as described below and for delegation in writing of the succession of this responsibility during his absence. Certain plant support functions shall be the responsibility of the Assistant General Manager-Plant Support (AGM-PS).

6.1.2 The General Manager-Nuclear Plant or his designee shall be responsible for the Radiological Environmental Monitoring Program as described in ~~the Specification 3/4.16 of Unit 1~~ and for the writing of the Annual Radiological Environmental Surveillance Report.

6.1.3 Each of the above-mentioned individuals is responsible for the accuracy of the procedures needed to implement his responsibilities.

### 6.2 ORGANIZATION

#### 6.2.1 OFFSITE AND ONSITE ORGANIZATIONS

Onsite and offsite organizations shall be established for unit operation and corporate management, respectively. The onsite and offsite organizations shall include the positions for activities affecting the safety of the nuclear power plant.

- a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organization charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the Plant Hatch Unit 2 updated FSAR.
- b. The AGM-PO shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. The Vice President-Nuclear shall have corporate responsibility for overall plant nuclear safety and shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining and providing technical support to the plant to ensure nuclear safety.

Specification 6.19



ANNUAL REPORTS (Continued)

6.9.1.5 Reports required on an annual basis shall include:

- a. A tabulation on an annual basis of the number of station, utility and other personnel, including contractors, receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,<sup>2</sup> e.g., reactor operations and surveillance inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- b. Documentation of all challenges to safety/relief valves.
- c. The results of specific activity analysis in which the primary coolant exceeded the limits of Specification 3.4.5. The following information shall be included: (1) Reactor power history starting 48 hours prior to the first sample in which the limit was exceeded; (2) Results of the last isotopic analysis for radioiodine performed prior to exceeding the limit, results of analysis while limit was exceeded and results of one analysis after the radioiodine was reduced to less than the limit. Each result should include date and time of sampling and the radioiodine concentrations; (3) Cleanup system flow history starting 48 hours prior to the first sample in which the limit was exceeded; (4) Graph of the I-131 concentration and one other radioiodine isotope concentration in microcuries per gram as a function of time for the duration of the specific activity above the steady-state level; and (5) The time duration when the specific activity of the primary coolant exceeded the radioiodine limit.
- d. Any other unit unique reports required on an annual basis.

ANNUAL RADIOLOGICAL ENVIRONMENTAL SURVEILLANCE REPORT (a)

Insert 3

6.9.1.6 Routine radiological environmental surveillance reports covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted prior to May 1 of each year. A single report may fulfill this requirement for both units.

6.9.1.7 The Annual Radiological Environmental Surveillance Report shall include summaries, interpretations, and statistical evaluation of the

a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections common to all units at the station.

<sup>2</sup>This tabulation supplements the requirements of 20.407 of 10 CFR Part 20.

Insert 3

6.9.1.6 The Annual Radiological Environmental Surveillance Report covering the radiological environmental surveillance activities related to the plant during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analyses of trends of the results of the Radiological Environmental Monitoring Program for the reporting period. The material provided shall be consistent with the objectives outlined in the ODCM and Sections IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR Part 50.

## ADMINISTRATIVE CONTROLS

results of the radiological environmental surveillance activities for the reporting period, including (as appropriate) a comparison with the preoperational studies, operation controls, previous environmental surveillance reports, and an assessment of any observed impacts of the plant operation on the environment. The reports shall also include the results of the land use surveys required by Specification 3.16.2 of Unit 1 Technical Specifications and the results of licensee participation in the interlaboratory comparison program required by Specification 3.16.3 of Unit 1 Technical Specifications.

The Annual Radiological Environmental Surveillance Report shall include summarized and tabulated results in the format of table 6.9.1.7-1 of all radiological environmental samples taken during the report period, with the exception of naturally occurring radionuclides which need not be reported. In the event that some results are not available for inclusion with the report, the report shall be submitted, noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as practicable in a supplementary report.

The reports shall also include the following:

- a. Summary description of the radiological environmental monitoring program.
- b. Map of all sampling locations as keyed to a table indicating distances and directions from main stack.
- c. Results of the licensee participation in the Interlaboratory Comparison Program.

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### SEMI-ANNUAL RADIOACTIVE EFFLUENT RELEASE REPORT<sup>(a)</sup>

Insert 4

6.9.1.8 Routine radioactive effluent release reports covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year.

Any changes to the ODCM shall be submitted with the next semi-annual report in which the change(s) was made effective. In addition, a report of any major changes to the radioactive waste treatment systems shall be submitted with the monthly operating report for the period in which the evaluation was reviewed and accepted by the Plant Review Board.

- a. A single submittal may be made for a multiple-unit station. The submittal should combine those sections that are common to all units at the station; however, the submittal shall specify the releases of radioactive material from each unit.

Insert 4

6.9.1.8 The Semiannual Radioactive Effluent Release Report covering the operation of the unit during the previous 6 months of operation shall be submitted within 60 days after January 1 and July 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be (1) consistent with the objectives outlined in the ODCM and PCP and (2) in conformance with 10 CFR 50.36a and Section IV.B.1 of Appendix I to 10 CFR Part 50.

TABLE 6.9.1.7-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARYName of Facility Edwi. Atch. Nuclear Plant Docket No. 50-321, 50-366Location of Facility Appling County, Georgia Reporting Period \_\_\_\_\_

<u>Medium of Pathway Sample (Unit of Measurement)</u>	<u>Type and Total Number of Analyses Performed</u>	<u>Lower Limit of Detection<sup>(a)</sup></u>	<u>All Indicator Locations Mean Range</u>	<u>Location of Highest Annual Mean</u>		<u>Control Locations Mean Range</u>	<u>Number of REPORTABLE EVENTS</u>
				<u>Name</u>	<u>Distance, and Direction</u>		
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a. Lower Limit of Detection is defined in table notation a. of table 4.16.1-1, Specification 4.16.1 of 1.

b. Mean and range based upon detectable measurements only. Fraction of detectable measurements at specified locations is indicated in parentheses.

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6.9.1.9 The Radioactive Effluent Release Report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit 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 Appendix B thereof.

The Radioactive Effluent Release Report to be submitted 60 days after January 1 of each year shall include an annual summary of meteorological data collected over the previous year. This annual summary may be either in the form of an hour-by-hour listing of wind speed, wind direction atmospheric stability and precipitation (if measured) on magnetic tape or in the form of joint frequency distributions of wind speed, wind direction, and atmospheric stability. This same report shall include an assessment of the radiation doses due to the radioactive liquid and gaseous effluents released from the unit or station during the previous calendar year. This same report shall include an assessment of the radiation doses from liquid and gaseous effluents to MEMBERS OF THE PUBLIC due to their activities inside the SITE BOUNDARY (figure 3.15-1) during the reporting period if circumstances have changed such that the potential doses are significantly greater than expected at onsite locations as discussed in the UDCM. All assumptions used in making these assessments, i.e., specific activity, exposure time, and location, shall be concluded in these reports. Historical annual average meteorological conditions or meteorological conditions concurrent with the time of release of radioactive materials in gaseous effluents, as determined by sampling frequency and measurement, shall be used for determining the gaseous pathway doses. The assessment of radiation doses shall be performed in accordance with the ODCM.

The Radioactive Effluents Release Report shall include the following information for each type of solid waste shipped offsite during the report period:

- a. Container volume
- b. Total curie quantity (specify whether determined by measurement or estimate)
- c. Principal radionuclides (specify whether determined by measurement or estimate)
- d. Type of waste, e.g., spent resin, compacted dry waste, evaporator bottoms

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- e. Type of container, e.g., LSA, type A, type B, large quantity
- f. Solidification agent, e.g., cement.

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The Radioactive Effluent Release Report shall include (on a quarterly basis) unplanned releases from the site to unrestricted areas of radioactive materials in gaseous and liquid effluents that were in excess of 1 Ci, excluding dissolved and entrained gases and tritium for liquid effluents, or those in excess of 150 Ci of noble gases or 0.02 Ci of radiiodines for gaseous releases.

The Radioactive Effluent Release Report shall include any changes to the PROCESS CONTROL PROGRAM and to the OFFSITE DOSE CALCULATION MANUAL made during the reporting period.

MONTHLY OPERATING REPORT

6.9.1.10 Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the Director, Office of Management and Program Analysis, U. S. Nuclear Regulatory Commission, Washington, D. C. 20555, with a copy to the Regional Office Inspection and Enforcement no later than the 15th of each month following the calendar month covered by the report.

CORE OPERATING LIMITS REPORT

- 6.9.1.11.a. Core operating limits shall be established and documented in the CORE OPERATING LIMITS REPORT before each reload cycle or any remaining part of a reload cycle for the following:
  - (1) Control Rod Program Controls - Rod Block Monitor for Specification 3.1.4.3,
  - (2) The Average Planar Linear Heat Generation Rate for Specification 3.2.1 and Surveillance Requirement 4.2.1,
  - (3) The Minimum Critical Power Ratio for Specifications 3.1.4.3 and 3.2.3 and Surveillance Requirement 4.2.3, and
  - (4) The Linear Heat Generation Rate for Specification 3.2.4 and Surveillance Requirement 4.2.4.
- b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC in the following documents:
  - (1) NEDE-24011-P-A, "General Electric Standard Application for Reactor Fuel," (applicable amendment specified in the CORE OPERATING LIMITS REPORT).
  - (2) "Safety Evaluation by the Office of Nuclear Reactor Regulation Supporting Amendment Nos. 151 and 89 to Facility Operating Licenses DPR-57 and NPF-5," dated January 22, 1988.
- c. The core operating limits shall be determined so that all applicable limits (e.g., fuel thermal-mechanical limits, core thermal-hydraulic limits, ECCS limits, nuclear limits such as shutdown margin, and transient and accident analysis limits) of the safety analysis are met.
- d. The CORE OPERATING LIMITS REPORT, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Regional Administrator and Resident Inspector.

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### RECORD RETENTION (Continued)

- c. Records of radiation exposure for all individuals entering radiation control areas.
- d. Records of gaseous and liquid radioactive material released to the environs.
- e. Records of transient or operational cycles for those unit components identified in Table 5.7.1-1.
- f. Records of reactor tests and experiments.
- g. Records of training and qualification for current members of the unit staff.
- h. Records of in-service inspections performed pursuant to these Technical Specifications.
- i. Records of Quality Assurance activities required by the QA Manual.
- j. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.
- k. Records of meetings of the PRB and the SRB.
- l. Records for Environmental Qualification which are covered under the provisions of paragraph 6.15.
- m. Records of analyses required by the Radiological Environmental Monitoring Program.
- n. Records of the service lives of all safety-related hydraulic and mechanical snubbers, including the date at which the service life commences and associated installation and maintenance records.

#### 6.11 RADIATION PROTECTION PROGRAM

Insert 5

Procedures for personnel radiation protection shall be prepared consistent with the requirements of 10 CFR Part 20 and shall be approved, maintained and adhered to for all operations involving personnel radiation exposure.

#### 6.12 HIGH RADIATION AREA

6.12.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20, each high radiation area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit\*. Any individual or group of individuals permitted

\*Health Physics personnel, or personnel escorted by Health Physics personnel in accordance with approved emergency procedures, shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.



Insert 5

- o. Records of reviews performed for changes made to the OFFSITE DOSE CALCULATION MANUAL and the PROCESS CONTROL PROGRAM.

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6.15 POST-ACCIDENT SAMPLING AND ANALYSIS

A program shall be established, implemented, and maintained to ensure the capability to obtain and analyze samples of reactor coolant, radioactive iodines and particulates in plant gaseous effluents, and containment atmosphere under accident conditions.

The program shall include the following:

- (1) Training of personnel,
- (2) Procedures for sampling and analysis, and
- (3) Provisions for maintenance of sampling and analysis equipment.

6.17 OFFSITE DOSE CALCULATION MANUAL

6.17.1 Licensee-initiated changes to the ODCM shall:

Insert 6

a. Be submitted to the Commission in the semi-annual effluent release report for the period in which the change(s) was made effective. This submittal shall contain:

1. Sufficiently detailed information to totally support the rationale for the change without benefit of additional or supplemental information. Information submitted should consist of a package of those ODCM pages to be changed, with each page numbered and provided with an approval and date box, together with appropriate analyses or evaluations justifying the change(s);
2. A determination that the change will not reduce the accuracy or reliability of dose calculations or set point determinations; and
3. Documentation that the change has been reviewed and found acceptable by the PRB.

b. Become effective upon review and acceptance by the PRB.

Insert 7

Insert 6

- a. Be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.106, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.
- c. Be submitted to the Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Semiannual Radioactive Effluent Release Report for the period of the report in which any change to 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 (e.g. month/year) the change was implemented.

Insert 7

6.18 RADIOACTIVE EFFLUENTS CONTROL PROGRAM

A program shall be established, implemented, and maintained conforming with 10 CFR 50.31 for the control of radioactive effluents and for maintaining the doses to MEMBERS OF THE PUBLIC from radioactive effluents as low as reasonably achievable. The program (1) shall be contained in the ODCM, (2) shall be implemented by operating procedures, and (3) shall include remedial actions to be taken whenever the program limits are exceeded. The program shall include the following elements:

- 1) Limitations on the operability of radioactive liquid and gaseous monitoring instrumentation including surveillance tests and setpoint determination in accordance with the methodology in the ODCM,
- 2) Limitations on the concentrations of radioactive material released in liquid effluents to UNRESTRICTED AREAS conforming to 10 CFR Part 20, Appendix B, Table II, Column 2,
- 3) Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.106 and with the methodology and parameters in the ODCM,
- 4) Limitations on the annual and quarterly doses or dose commitment to a MEMBER OF THE PUBLIC from radioactive materials in liquid effluents released from each unit to UNRESTRICTED AREAS conforming to Appendix I to 10 CFR Part 50,
- 5) Determination of cumulative and projected dose contributions from radioactive effluents for the current calendar quarter and current calendar year in accordance with the methodology and parameters in the ODCM at least every 31 days,
- 6) Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity when the projected doses in a 31-day period would exceed 2 percent of the guidelines for the annual dose or dose commitment conforming to Appendix I to 10 CFR Part 50,
- 7) Limitations on the dose rate resulting from radioactive material released in gaseous effluents to areas beyond the SITE BOUNDARY conforming to the doses associated with 10 CFR Part 20, Appendix B, Table II, Column 1,

Insert 7 (Continued)

- 8) Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50,
- 9) Limitations on the annual and quarterly doses to a MEMBER OF THE PUBLIC from Iodine-131, Iodine-135, tritium, and all radionuclides in particulate form with half-lives greater than 8 days in gaseous effluents released from each unit to areas beyond the SITE BOUNDARY conforming to Appendix I to 10 CFR Part 50, and
- 10) Limitations on the annual dose or dose commitment to any MEMBER OF THE PUBLIC due to releases of radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

6.19 RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be established, implemented, and maintained to monitor the radiation and radionuclides in the environs of the plant. The program shall provide (1) representative measurements of radioactivity in the highest potential exposure pathways, and (2) verification of the accuracy of the effluent monitoring program and modeling of environmental exposure pathways. The program shall (1) be contained in the ODCM, (2) conform to the guidance of Appendix I to 10 CFR Part 50, and (3) include the following:

- 1) Monitoring, sampling, analysis, and reporting of radiation and radionuclides in the environment in accordance with the methodology and parameters in the ODCM,
- 2) A Land Use Census to ensure that changes in use of areas at and beyond the SITE BOUNDARY are identified and that modifications to the monitoring program are made if required by the results of this census, and
- 3) Participation in an Interlaboratory Comparison Program to ensure that independent checks on the precision and accuracy of the measurements of radioactive materials in environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

Insert 7 (Continued)

6.20 PROCESS CONTROL PROGRAM (PCP)

A program shall be established, implemented, and maintained to contain the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR Parts 20, 61, and 71, State regulations, burial ground requirements, and other requirements governing the disposal of solid radioactive waste.

Changes to the PCP:

- a. Shall be documented and records of reviews performed shall be retained as required by Technical Specification 6.10.2.o. This documentation shall contain:
  - 1) Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
  - 2) A determination that the change will maintain the overall conformance of the solidified waste product to existing requirements of Federal, State, or other applicable regulations.
- b. Shall become effective after review and acceptance by the PRB and the approval of the General Manager-Nuclear Plant.