

Beaver Valley Power Station

Unit 1/2

1/2-ODC-3.03

ODCM: Controls for RETS and REMP Programs

Document Owner
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1.0 PURPOSE

1.1 This procedure includes selected Definitions and Tables as delineated in Section 1 of the Technical Specifications and selected Applicability and Surveillance Requirement statements as delineated in T.S. 3.0.

1.1.1 Prior to issuance of this procedure, these items were located in Appendix C of the old ODCM, and were added to this procedure for reference purposes, even though they are currently described in the Technical Specifications.

1.2 This procedure contains the controls for the Radiological Effluent Technical Specification (RETS) that were transferred from the Technical Specifications per Unit 1/2 Amendments 1A-188/2A-70, and in accordance with Generic Letter 89-01 and NUREG-1301.^(3.2.10)

1.2.1 Prior to issuance of this procedure, these items were located in Appendix C of the old ODCM.

1.3 This procedure contains the reporting requirements for the Radioactive Effluent Release Report and the Annual Radiological Environmental Operating Report that were transferred from the Technical Specifications per Unit 1/2 Amendments 1A-188/2A-70 and in accordance with Generic Letter 89-01 and NUREG-1301.^(3.2.10)

1.3.1 Prior to issuance of this procedure, these items were located in Appendix E of the old ODCM.

1.4 This procedure contains the controls for Radiation Monitoring Instrumentation that were transferred from the Technical Specification per Unit 1/2 Amendments 246/124, and in accordance with NUREG-1431.^(3.2.11)

1.5 This procedure contains the controls for Liquid Holdup Tank Activity Limits and for Gas Decay/Storage Tank Activity Limits that were transferred from the Technical Specification per Unit 1/2 Amendment 250/130, and in accordance with NUREG-1431.^(3.1.6, 3.2.11)

1.6 This procedure provides the Radiological Effluent Controls and Reporting Requirements required for T.S. 5.5.1, T.S. 5.5.2, T.S. 5.5.8, T.S. 5.6.1, and T.S. 5.6.2.

2.0 SCOPE

2.1 This procedure is applicable to all station personnel that are qualified to perform activities as described and referenced in this procedure.

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3.0 REFERENCES AND COMMITMENTS

3.1 References

3.1.1 1/2-ODC-2.01, ODCM: Liquid Effluents

3.1.2 1/2-ODC-2.02, ODCM: Gaseous Effluents

3.1.3 1/2-ODC-3.02, ODCM: Bases for ODCM Controls

3.1.4 Unit 1/2 Technical Specification 6.8.6, including Amendments 188/70 (LAR 1A-175/2A-137) Implemented August 7, 1995.

3.1.5 Unit 1/2 Technical Specification 3.3.3.1, including Amendments 246/124 (LAR 1A-287/2A-159) Implemented April 11, 2002

3.1.6 Unit 1/2 Technical Specification 3.11.1.4, 3.11.2.5, 6.8.6 and 6.9.3, including Amendments 250/130 (LAR 1A-291/2A-163) Implemented August 7, 2002

3.1.7 1/2-ADM-1640, Control of the Offsite Dose Calculation Manual

3.1.8 1/2-ADM-0100, Procedure Writer's Guide

3.1.9 NOP-SS-3001, Procedure Review and Approval

3.1.10 CR 981489, ODCM Table 4.11-2 Row A (Waste Gas Storage Tank Discharge). CA-01, Revise Appendix C of the ODCM (Table 4.11-2) to add clarification as to where and when tritium samples are to be obtained for GWST discharges.

3.1.11 CR 981490, ODCM Table 4.11-2 Note e, and Related Chemistry Department Procedures. CA-01, Revise Appendix C of the ODCM (Table 4.11-2, note e) to specify the proper tritium sample point.

3.1.12 CR 993021, Apparent failure to test RM-1DA-100 trip function as required by ODCM. No ODCM changes are required for this CR.

3.1.13 CR 001682, ODCM Action 28 Guidance. CA-02, Revise Appendix C of the ODCM (Table 3.3-13, Action 28) to differentiate actions associated with Inoperable Process Flow Rate Monitors vs. Sample Flow Rate Monitors.

3.1.14 CR 02-05711, TS and ODCM changes not reflected in 1OM.54.3.L5 Surveillance Log. CA-01, Revise 1/2-ODC-3.03 to add a requirement for applicable station groups notification of pending ODCM changes.

3.1.15 CR 03-06123, Enhance Table 3.3-6 of 1/2-ODC-3.03 to Add More Preplanned Method of Monitoring. CA-01, Revise Table 3.3-6 and Table 4.3-3 to allow use of Eberline SPING Channel 5 as an additional 2nd PMM when the Unit 1 Mid or High Range Noble Gas Effluent Monitors are Inoperable.

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3.1.16 CR 03-06281, Gaseous Tritium Sampling Required by ODCM (1/2-ODC-3.03) Unclear for Chemistry. CA-01, Revise procedure Attachment K Table 4.11-2 for RP & Chemistry sampling of Gaseous Effluent Pathways to show which effluent pathways need sampled for compliance to ODCM Control 3.11.2.1 requirements.

3.1.17 CR 03-07487, Results of NQA Assessment of the Radiological Effluents Program. CA-01, Revise Calculation Package No. ERS-ATL-95-007 to clarify the term "Surface Water Supply" per guidance presented in NUREG-0800 SRP 15.7.3. CA-05, Revise 1/2-ODC3.03 Control 3.11.1.4 to update the activity limits for the outside storage tanks.

3.1.18 CR 03-07668, Benchmark Effluent & Environmental Programs VS Papers Presented at 13th REMP/RETS Workshop. CA-01, Evaluate procedure Attachment K Table 4.11-2 to reduce the amount of Effluent Samples obtained during a power transient.

3.1.19 CR 03-09288, LAR 1A-321 & 2A-193, Increased Flexibility in Mode Restraints. CA-19, Review LAR 1A-321/2A-193 to identify the affected Rad Effluent procedures, programs, manuals, and applicable plant modification documents that will need to be revised to support implementing the LAR.

3.1.20 CR 03-09959, RFA-Rad Protection Provide Clarification to ODCM 1/Day Air Tritium Sample. CA-01, Revise ODCM procedure 1/2-ODC-3.03 Attachment K (Table 4.11-2 note c & note e) to allow sampling of the appropriate building atmosphere.

3.1.21 CR 03-11726, Typographical Error Found in ODCM 3.11.2.5. CA-01, Revise ODCM procedure 1/2-ODC-3.03, Attachment O, Control 3.11.2.5 to correct a typographical error. Specifically, the final word in Action (a) needs changed from "nad" to "and".

3.1.22 CR 04-01643, Procedure Correction – Typographical Error in the ODCM. CA-01, Revise ODCM procedure 1/2-ODC-3.03, Attachment F, (Table 3.3-13 and 4.3-13) to correct a typographical error. Specifically, the Asset Number for the Vacuum Gauge used for measurement of sample flow (from the Alternate Sampling Device) needs changed from [PI-1GW-13] to [PI-1GW-135].

3.1.23 CR 04-02275, Discrepancies in Table 3.3-13 of the ODCM. CA-01, Revise ODCM procedure 1/2-ODC-3.03, Attachment F, (Table 3.3-13 and 4.3-13) to add clarification that the "Sampler Flow Rate Monitors are the devices used for "Particulate and Iodine Sampling".

3.1.24 Unit 1 Technical Specification Amendment No. 275 (LAR 1A-302) to License No. DPR-66. This amendment to the Unit 1 license was approved by the NRC on July 19, 2006.

3.1.25 Vendor Calculation Package No. 8700-UR(B)-223, Impact of Atmospheric Containment Conversion, Power Uprate, and Alternative Source Terms on the Alarm Setpoints for the Radiation Monitors at Unit 1.

3.1.26 Engineering Change Package No. ECP-04-0440, Extended Power Uprate.

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<p>3.1.27 CR 06-04908, Radiation Monitor Alarm Setpoint Discrepancies. CA-03; revise ODCM procedure 1/2-ODC-3.03 to update the alarm setpoints of [RM-1VS-110] and [RM-1GW-109] for incorporation of the Extended Power Uprate per Unit 1 TS Amendment No. 275.</p> <p>3.1.28 Calculation Package No. ERS-MPD-93-007, BVPS-1 Gaseous Radioactivity Monitor Emergency Action Levels.</p> <p>3.1.29 SAP Order 200197646-0110: Revise ODCM procedure 1/2ODC-3.03, 1/2-HPP-3.06.001, 1/2-ENV-05.01, Form 1/2-HPP-3.06.001.F05 and Form 1/2-ENV-05.01.F05 to incorporate revised outside liquid storage tank activity limits via Calculation Package No. ERS-ATL-95-007, R2.</p> <p>3.1.30 CR 06-04944: ODCM 3.03 Attachment E conflict between Applicability and Action Statement. CA-01; revise ODCM procedure 1/2-ODC-3.03, Attachment E to clarify Applicability for tank level indicating devices is during additions to the tank.</p> <p>3.1.31 CR 05-03306: Incorporated Improved Technical Specifications. This includes transfer of programmatic controls for BV-2 Noble Gas Effluent Steam Monitors [2MSS-RQ101A], [2MSS-RQ101B] and [2MSS-RQ101C] from the Technical Specifications to ODCM procedure 1/2-ODC-3.03 (Attachment D Tables 3.3-6 and 4.3-3). This was permitted via Unit 1/2 Technical Specification Amendments No. 278/161.</p> <p>3.1.32 Unit 1 and 2 Technical Specifications: ITS 5.5.1, Offsite Dose Calculation Manual</p> <p>3.1.33 Unit 1 and 2 Technical Specifications: ITS 5.5.2, Radioactive Effluent Controls Program</p> <p>3.1.34 Unit 1 and 2 Technical Specifications: ITS, 5.5.8, Explosive Gas and Storage Tank Radioactivity Monitoring Program</p> <p>3.1.35 Unit 1 and 2 Technical Specification: ITS 5.6.1, Annual Radiological Environmental Operating Report</p> <p>3.1.36 Unit 1 and 2 Technical Specifications: ITS 5.6.2, Radioactive Effluent Release Report</p> <p>3.1.37 SAP Order 200240681: Revise ODCM procedure 1/2-ODC-3.03 (Attachment E Table 3.3-12) to add an alternate Action when the primary Flow Rate Measurement Device [FT-1CW-101-1] is not OPERABLE. The alternate Action (25A) uses local measurements (as described in 1MSP-31.06-1) to determine a total dilution flow rate during liquid effluent releases.</p> <p>3.1.38 CR 07-12924 and SAP Order 200247228-0410: Revise ODCM procedure 1/2-ODC-3.03 (Attachment F Tables 3.3-13 and 4.3-13) to clarify the Functional Location of the Sampler Flow Rate Monitors for the BV-2 gaseous effluent release pathways. Specifically, the procedure was changed to refer to Functional Location [2HVS-FIT101-1] instead of [2HVS-FIT101], [2RMQ-FIT301-1] instead of [2RMQ-FIT301], [2HVL-FIT112-1] instead of [2HVL-FIT112], and [2RMQ-FIT303-1] instead of [2RMQ-FIT303].</p>			

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<p>3.1.39 SAP Order 200247228-0450: Revise 1/2-ODC-3.03 Attachment E Table 3.3-12 and Attachment F, Tables 3.3-13 & 4.3-13 to provide added clarifications, as follows; (1) add the word "or" where it is missing from Attachment F, Table 3.3-13 & 4.3-13, (2) remove grab samples from the list of alternates in Table 3.3-13 and 4.3-13, because a grab sample is an "action", not an "alternate", (3) add notations in Table 3.3-12 and 3.3-13 to indicate that Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.9 Action b and 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days, and (4) remove surveillances for Preplanned Method of Monitoring (PMM) from Table 4.3-3, because surveillances only apply to instruments, not methods.</p> <p>3.1.40 SAP Order 200240681-0020 and 0040: Revise 1/2-ODC-3.03 Attachment E, Table 3.3-12, Table 4.3-12 and Action 25A to clarify the 1st and 2nd alternates to the flow rate measurement devices used for the cooling tower blowdown line.</p> <p>3.1.41 SAP Order 200197646-0300 and CR07-31083: Revise ODCM procedure 1/2-ODC-3.03 to add a definition for Channel Functional Test and revise the definition for Channel Operational Test to indicate that these definitions have the same requirements and, therefore, are considered equal.</p> <p>3.1.42 CR G203-2011-02332, Inability to meet ODCM requirements for REMP milk sampling in 2011 and CA G203-2011-02332-1, Make changes to the ODCM.</p> <p>3.1.43 Engineering Change Package 10-0150: Replacement of BV1 Effluent Monitoring System Components</p> <p>3.1.44 Engineering Change Package No. 16-0026: Pump/Motor Assembly Replacement</p> <p>3.1.45 SAP Notification 601054826: Revise reference on 1/2-HPP-4.02.009.F01</p> <p>3.1.46 CR-2017-04211, Lack of isokinetic sampling for ODCM requirements</p> <p>3.1.47 CR-2018-02456, Rad. Effluents Inspection Preliminary Licensee Identified Green Non-cited Violation</p> <p>3.1.48 Engineering Change Package No. 17-0378: Retirement of Radiation Monitors at Beaver Valley Unit #1</p> <p>3.1.49 ATA-2019-3863, 1/2-ODC-3.03 Attachment D Channel Operational Testing Requirements</p> <p>3.1.50 Engineering Change Package No. ECP-13-0829: Install Blank-Off Flanges on the Inlet and Outlet of Unit 2 Condensate Polishing System</p>			

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3.2 Commitments

3.2.1 10 CFR Part 20, Standards for Protection Against Radiation

3.2.2 10 CFR Part 50, Domestic Licensing of Production and Utilization Facilities

3.2.3 40 CFR Part 141

3.2.4 40 CFR Part 190, Environmental Radiation Protection Standards For Nuclear Power Operations.

3.2.5 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

3.2.6 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

3.2.7 Regulatory Guide 1.113, Estimating Aquatic Dispersion Of Effluents From Accidental And Routine Reactor Releases For The Purpose Of Implementing Appendix I, April 1977

3.2.8 NUREG-0133, Preparation of Radiological Effluent Technical Specifications for Nuclear Power Plants, October 1978

3.2.9 NUREG-0737, Clarification of TMI Action Plan Requirements, October 1980

3.2.10 NUREG-1301, Offsite Dose Calculation Manual Guidance; Standard Radiological Effluent Controls For Pressurized Water Reactors (Generic Letter 89-01, Supplement No. 1)

3.2.11 NUREG-1431, Standard Technical Specifications - Westinghouse Plants Specifications

3.2.12 NUREG-0800, Standard Review Plan, Postulated Radioactive Releases Due to Liquid-Containing Tank Failures, July 1981

3.2.13 Licensee Response to NRC Unresolved Item 50-334/83-30-05. The Radiation Monitor Particle Distribution Evaluation showed that the Licensee must continue to use correction factors to determine particulate activity in samples obtained from the effluent release pathways.

3.2.14 10 CFR 72.104 Criteria for Radioactive Materials in Effluents and Direct Radiation from an ISFSI or MRS.

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4.0 RECORDS AND FORMS

4.1 Records

4.1.1 Any calculation supporting ODCM changes shall be documented, as appropriate, by a retrievable document (e.g.; letter or calculation package) with an appropriate RTL number.

4.2 Forms

4.2.1 None

5.0 PRECAUTIONS AND LIMITATIONS

5.1 The numbering of each specific ODCM Control, ODCM Surveillance Requirement and ODCM Table contained in this procedure does not appear to be sequential. This is intentional, as all ODCM Control, ODCM Surveillance Requirement and ODCM Table numbers remained the same when they were transferred from the Technical Specifications. This was done in an effort to minimize the amount of plant procedure changes and to eliminate any confusion associated with numbering changes.

5.2 The numbering of each specific ODCM Report contained in this procedure does not appear to be sequential. This is intentional, as all ODCM Report numbers remained the same when they were transferred from the Technical Specifications. This was done in an effort to minimize the amount of plant procedure changes and to eliminate any confusion associated with numbering changes.

6.0 ACCEPTANCE CRITERIA

6.1 Any change to this procedure shall contain sufficient justification that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, 10 CFR 72.104 and Appendix I to 10 CFR 50, and not adversely impact the accuracy or reliability of effluent dose or setpoint calculation.^(3.2.10)

6.1.1 All changes to this procedure shall be prepared in accordance with 1/2-ADM-0100^(3.1.8) and 1/2-ADM-1640.^(3.1.7)

6.1.2 Pending changes to this procedure shall be provided to applicable station groups. For example, IF Control 3.11.1.1 is being changed, THEN the proposed changes shall be provided to the applicable station groups (i.e.; owner of the procedures), identified in the MATRIX of ODCM procedure 1/2-ODC-1.01. This will allow the station groups to revise any affected procedures concurrent with the ODCM change.^(3.1.14)

6.1.3 All changes to this procedure shall be reviewed and approved in accordance with NOP-SS-3001^(3.1.9) and 1/2-ADM-1640.^(3.1.7)

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7.0 PREREQUISITES

7.1 The user of this procedure shall be familiar with ODCM structure and content.

8.0 PROCEDURE

8.1 See ATTACHMENT A for a Table of Operational Modes and a Table of Frequency Notation.

8.2 See ATTACHMENT B for a list of defined terms used throughout the ODCM.

8.3 See ATTACHMENT C thru ATTACHMENT S for a complete description of all ODCM Controls.

8.4 See ATTACHMENT T for a description of the Annual Report required by the REMP Controls.

8.5 See ATTACHMENT U for a description of the Annual Report required by the RETS Controls.

- END -

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ATTACHMENT A

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ODCM CONTROLS: OPERATIONAL MODES AND FREQUENCY NOTATION

TABLE 1.1

MODES

MODE	TITLE	REACTIVITY CONDITION (k_{eff})	% RATED THERMAL POWER ^(a)	AVERAGE REACTOR COOLANT TEMPERATURE (°F)
1	Power Operation	≥ 0.99	> 5	NA
2	Startup	≥ 0.99	≤ 5	NA
3	Hot Standby	< 0.99	NA	≥ 350
4	Hot Shutdown ^(b)	< 0.99	NA	$350 > T_{avg} > 200$
5	Cold Shutdown ^(b)	< 0.99	NA	≤ 200
6	Refueling ^(c)	NA	NA	NA

(a) Excluding decay heat.

(b) All reactor vessel head closure bolts fully tensioned.

(c) One or more reactor vessel head closure bolts less than fully tensioned.

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ODCM CONTROLS: OPERATIONAL MODES AND FREQUENCY NOTATION

TABLE 1.2

FREQUENCY NOTATION

<u>NOTATION</u>	<u>FREQUENCY</u>
S	At least once per 12 hours
D	At least once per 24 hours
W	At least once per 7 days
M	At least once per 31 days
Q	At least once per 92 days
SA	At least once per 184 days
R	At least once per 18 months
S/U	Prior to each reactor startup
P	Completed prior to each release
N.A.	Not applicable

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ATTACHMENT B
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ODCM CONTROLS: DEFINITIONS

The defined terms of this section appear in capitalized type and are applicable throughout these CONTROLS.

ACTION shall be those additional requirements specified as corollary statements to each principal CONTROL and shall be part of the CONTROLS.

CHANNEL CALIBRATION shall be the adjustment, as necessary, of the channel output such that it responds with the necessary range and accuracy to known values of the parameter which the channel monitors. The CHANNEL CALIBRATION shall encompass the entire channel including the sensor and alarm and/or trip functions, and shall include the CHANNEL OPERATIONAL TEST. The CHANNEL CALIBRATION may be performed by any series of sequential, overlapping, or total channel steps such that the entire channel is calibrated.

CHANNEL CHECK shall be the qualitative assessment of channel behavior during operation by observation. This determination shall include, where possible, comparison of the channel indication and/or status with other indications and/or status derived from independent instrument channels measuring the same parameter.

CHANNEL FUNCTIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions. **SINCE** these requirements are the same as those shown for CHANNEL OPERATIONAL TEST, **THEN** these definitions are considered equivalent.

CHANNEL OPERATIONAL TEST shall be the injection of a simulated signal into the channel as close to the primary sensor as practicable to verify OPERABILITY including alarm and/or trip functions. **SINCE** these requirements are the same as those shown for CHANNEL FUNCTIONAL TEST, **THEN** these definitions are considered equivalent.

FREQUENCY NOTATION specified for the performance of Surveillance Requirements shall correspond to the intervals defined in Table 1.2.

GASEOUS RADWASTE TREATMENT SYSTEM is any 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 the environment.

MEMBER(S) OF THE PUBLIC (10 CFR 20 and/or 10 CFR 50) means any individual except when that individual is receiving an occupational dose. **This definition is used to show compliance to ODCM CONTROL 3.11.1.1, 3.11.1.4, 3.11.2.1 and 3.11.2.5 that are based on 10 CFR Part 20. This definition is also used to show compliance to ODCM Controls 3.11.1.2, 3.11.1.3, 3.11.2.2, 3.11.2.3 and 3.11.2.4 that are based on 10 CFR Part 50.**

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ODCM CONTROLS: DEFINITIONS

MEMBER(S) OF THE PUBLIC (40 CFR 190) means any individual that can receive a radiation dose in the general **environment**, whether he may or may not also be exposed to radiation in an occupation associated with a nuclear fuel cycle. However, an individual is not considered a MEMBER OF THE PUBLIC during any period in which he is engaged in carrying out any operation which is part of the nuclear fuel cycle. **This definition is used to show compliance to an ODCM CONTROL 3.11.4.1 that is based on 40 CFR Part 190.**

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 (which is considered to include the onsite Independent Spent Fuel Storage Installation (ISFSI)), in the calculation of gaseous and liquid effluent monitoring Alarm/Trip Setpoints, and in the conduct of the Environmental Radiological Monitoring Program. The ODCM shall also contain (1) the Radioactive Effluent Controls and Radiological Environmental Monitoring Programs required by T.S. 5.5.2 and (2) descriptions of the information that should be included in the Radiological Environmental Operating and Annual Radioactive Effluent Release Reports that are also required by T.S. 5.6.1 and T.S. 5.6.2.

OPERABLE/OPERABILITY A system, subsystem, train, component, or device shall be OPERABLE or have OPERABILITY when it is capable of performing its specified function(s). Implicit in this definition shall be the assumption that all necessary attendant instrumentation, controls, normal and emergency electric power sources, cooling or seal water, lubrication or other auxiliary equipment that are required for the system, subsystem, train, component, or device to perform its function(s) are also capable of performing their related safety function(s).

MODE shall correspond to any one inclusive combination of core reactivity condition, power level, and average reactor coolant temperature specified in ATTACHMENT A Table 1.1.

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

RATED THERMAL POWER shall be a total reactor core heat transfer rate to the reactor coolant of 2900 MWt.

REPORTABLE EVENT shall be any of those conditions specified in Section 50.73 to 10 CFR Part 50.

SHUTDOWN means reactor power change to 0% power.

SITE BOUNDARY shall be that line beyond which the land is neither owned, nor leased, nor otherwise controlled by the licensee. The Figure for Liquid Effluent Site Boundary is contained in 1/2-ODC-2.01. The Figure for Gaseous Effluent Site Boundary is contained in 1/2-ODC-2.02.

STARTUP means reactor power change from 0% power.

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

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ATTACHMENT B
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ODCM CONTROLS: DEFINITIONS

THERMAL POWER shall be the total reactor core heat transfer rate to the reactor coolant.

UNRESTRICTED AREA means any area access to which is neither limited nor controlled by the licensee.

VENTILATION EXHAUST TREATMENT SYSTEM is any system designed and installed to reduce gaseous radioiodine or radioactive material in particulate form in effluents by passing ventilation or vent exhaust gases through charcoal absorbers and/or HEPA filters for the purpose of removing iodines or particulates from the gaseous exhaust stream prior to the release to the environment (such a system is not considered to have any effect on noble gas effluents). Engineered Safety Feature (ESF) atmospheric cleanup systems are not considered to be VENTILATION EXHAUST TREATMENT SYSTEM components.

VENTING is the controlled process of discharging air or gas from a confinement to maintain temperature, pressure, humidity, concentration or other operating conditions, in such a manner that replacement air or gas is not provided or required during VENTING. Vent, used in system names, does not imply a VENTING process.

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ODCM CONTROLS: APPLICABILITY AND SURVEILLANCE REQUIREMENTS

CONTROLS: APPLICABILITY

-
- 3.0.1 ODCM CONTROLS shall be met during the MODES or other conditions specified in the Applicability; except as provided in ODCM CONTROL 3.0.2
- 3.0.2 Upon discovery of a failure to meet the ODCM CONTROL, the associated ODCM ACTION requirements shall be met, except as provided in ODCM CONTROL 3.0.5. If the ODCM CONTROL is met or no longer applicable prior to expiration of the specified time intervals, completion of the ODCM ACTION requirements is not required unless otherwise stated.
- 3.0.3 When an ODCM CONTROL is not met and the associated ODCM ACTIONS are not met, an associated ACTION is not provided, or if directed by the associated ACTIONS, the unit shall be placed in a MODE or other specified condition in which the ODCM CONTROL is not applicable. Action shall be initiated within 1 hour to place the unit, as applicable, in:
1. MODE 3 within 7 hours,
 2. MODE 4 within 13 hours, and
 3. MODE 5 within 37 hours.
- Where corrective measures are completed that permit operation in accordance with the ODCM CONTROL or ACTIONS, completion of the actions required by ODCM CONTROL 3.0.3 is not required.
- Exceptions to these requirements are stated in the individual ODCM CONTROLS.
- 3.0.4 When an ODCM CONTROL is not met, entry into a MODE or specified condition in the Applicability shall only be made:
- a. When the associated ODCM ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time, or
 - b. After performance of a risk assessment addressing inoperable systems and components, consideration of the results, determination of the acceptability of entering the MODE or other specified condition in the Applicability, and establishment of risk management actions, if appropriate; exceptions to this ODCM CONTROL are stated in the individual ODCM CONTROLS, or
 - c. When an allowance is stated in the individual value, parameter, or other ODCM CONTROL.

This ODCM CONTROL shall not prevent changes in MODES or other specified conditions in the Applicability that are required to comply with ODCM ACTIONS or that are part of a shutdown of the unit.

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ODCM CONTROLS: APPLICABILITY AND SURVEILLANCE REQUIREMENTS

- 3.0.5 Equipment removed from service or declared inoperable to comply with ODCM ACTIONS may be returned to service under administrative control solely to perform testing required to demonstrate its OPERABILITY or the OPERABILITY of other equipment. This is an exception to ODCM CONTROL 3.0.1 for the system returned to service under administrative control to perform the testing required to demonstrate OPERABILITY.

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ODCM CONTROLS: APPLICABILITY AND SURVEILLANCE REQUIREMENTS

CONTROLS: SURVEILLANCE REQUIREMENTS

4.0.1 Surveillance Requirements shall be met during the MODES or other conditions specified for individual ODCM CONTROLS unless otherwise stated in the ODCM Surveillance Requirement. Failure to meet an ODCM Surveillance, whether such failure is experienced during the performance of the Surveillance or between performance of the Surveillance, shall be failure to meet the ODCM CONTROL. Failure to perform a Surveillance within the specified Frequency, shall be failure to meet the ODCM CONTROL except as provided in ODCM Surveillance Requirement 4.0.3. Surveillances do not have to be performed on inoperable equipment or variables outside specified limits.

4.0.2 The specified Frequency for each ODCM Surveillance Requirement is met if the Surveillance is performed within ± 1.25 times the interval specified in the Frequency, as measured from the previous performance or as measured from the time a specified condition of the Frequency is met.

For Frequencies specified as "once," the above interval extension does not apply.

If a Completion Time requires periodic performance or "once per..." basis, the above Frequency extension applies to each performance after the initial performance.

Exceptions to this Specification are stated in the individual Specifications.

4.0.3 If it is discovered that an ODCM Surveillance was not performed within its specified Frequency, then compliance with the requirement to declare the ODCM CONTROL not met may be delayed, from the time of discovery, up to 24 hours or up to the limit of the specified surveillance interval, whichever is greater. This delay period is permitted to allow performance of the ODCM Surveillance. A risk evaluation shall be performed for any ODCM Surveillance delayed greater than 24 hours and the risk impact shall be managed.

If the ODCM Surveillance is not performed within the delay period, the ODCM CONTROL must immediately be declared not met, and the applicable ODCM ACTION(s) must be entered.

When the ODCM Surveillance is performed within the delay period and the ODCM Surveillance is not met, the ODCM CONTROL must immediately be declared not met, and the applicable ODCM ACTION(s) must be entered.

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ODCM CONTROLS: APPLICABILITY AND SURVEILLANCE REQUIREMENTS

- 4.0.4 Entry into a MODE or other specified condition in the Applicability of a ODCM CONTROL shall only be made when the ODCM Surveillances have been met within their allowed surveillance interval, except as provided by ODCM Surveillance Requirement 4.0.3. When an ODCM CONTROL is not met due to Surveillances not having been met, entry into a MODE or other specified condition in the Applicability shall only be made in accordance with ODCM CONTROL 3.0.4. This provision shall not prevent entry into MODES or other specified conditions in the Applicability, that are required to comply with ODCM ACTION requirements or that are part of a shutdown of the unit.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

CONTROLS: RADIATION MONITORING (HIGH RANGE INSTRUMENTATION)

3.3.3.1 The radiation monitoring instrumentation channels shown in Table 3.3-6 shall be OPERABLE with their alarm/trip setpoints within the specified limits.

APPLICABILITY: As shown in Table 3.3-6.

ACTION:

- a. With a radiation monitoring channel alarm/trip setpoint exceeding the value shown in ODCM Control 3.3.3.1, Table 3.3-6, adjust the setpoint to within the limit within 4 hours or declare the channel inoperable.
- b. With one or more radiation monitoring channels inoperable, take the ACTION shown in ODCM Control 3.3.3.1, Table 3.3-6.
- c. The provisions of ODCM Control 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.1 Each radiation monitoring instrumentation channel shall be demonstrated OPERABLE by the performance of the CHANNEL CHECK, CHANNEL CALIBRATION and CHANNEL OPERATIONAL TEST operations during the modes and at the frequencies shown in ODCM Control 3.3.3.1, Table 4.3-3.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 3.3-6

BV-1 RADIATION MONITORING INSTRUMENTATION

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>SETPOINT</u> ⁽¹⁾ (b)	<u>NOMINAL MEASUREMENT RANGE</u>	<u>ACTION</u>
1. Noble Gas Effluent Monitors – PINGS⁽³⁾					
a. Reactor Building/SLCRS (CV-1; Also called Elevated Release)					
<u>High Range Noble Gas</u>	(1)	1, 2, 3, & 4			35
Pri: (RM-1VS-110 HRNG Rel)			≤ 1.56E+7	1E-4 to 1E+5 uCi/cc ⁽²⁾	
1st PMM: (RM-1VS-110 LRNG Rel)			uCi/s		
2nd PMM: (RM-1VS-107B)					
3rd PMM: Grab Sampling every 12 hours					
b. Auxiliary Building Ventilation System (VV-1; Also called Ventilation Vent)					
<u>High Range Noble Gas</u>	(1)	1, 2, 3, & 4			35
Pri: (RM-1VS-109 HRNG Rel)			≤ 1.18E+7 uCi/s	1E-4 to 1E+5 uCi/cc ⁽²⁾	
1st PMM: (RM-1VS-109 LRNG Rel)					
2nd PMM: (RM-1VS-101B)					
3rd PMM: Grab Sampling every 12 hours					
c. Gaseous Waste/Process Vent System (PV-1/2)					
<u>High Range Noble Gas</u>	(1)	1, 2, 3, & 4			35
Pri: (RM-1GW-109 HRNG Rel)			≤ 7.84E+9 uCi/s	1E-4 to 1E+5 uCi/cc ⁽²⁾	
1st PMM: (RM-1GW-109 LRNG Rel)					
2nd PMM: (RM-1GW-108B)					
3rd PMM: Grab Sampling every 12 hours					

^(a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

^(b) Setpoints are calculated in calculation package ERS-MPD-93-007.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 3.3-6 (Continued)

BV-1 RADIATION MONITORING INSTRUMENTATION

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>SETPOINT</u> ⁽¹⁾	<u>NOMINAL MEASUREMENT RANGE</u>	<u>ACTION</u>
2. Noble Gas Effluent Steam Monitors					
a. Atmospheric Steam Dump Valve and Code Safety Relief Valve Discharge					
Pri: (RM-1MS-100A) PMM: (Form 1/2-ENV-05.05.F07)	(1)	1, 2, 3, & 4	≤ 50 cpm	1E-1 to 1E+3 uCi/cc	35
Pri: (RM-1MS-100B) PMM: (Form 1/2-ENV-05.05.F07)	(1)	1, 2, 3, & 4	≤ 50 cpm	1E-1 to 1E+3 uCi/cc	35
Pri: (RM-1MS-100C) PMM: (Form 1/2-ENV-05.05.F07)	(1)	1, 2, 3, & 4	≤ 50 cpm	1E-1 to 1E+3 uCi/cc	35
b. Auxiliary Feedwater Pump Turbine Exhaust					
Pri: (RM-1MS-101) PMM: (Form 1/2-ENV-05.05.F07)	(1)	1, 2, 3, & 4	≤ 170 cpm	1E-1 to 1E+3 uCi/cc	35

- (a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 3.3-6 (Continued)

BV-2 RADIATION MONITORING INSTRUMENTATION

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABLE MODES</u>	<u>SETPOINT ⁽¹⁾</u>	<u>NOMINAL MEASUREMENT RANGE</u>	<u>ACTION</u>
1. Noble Gas Effluent Monitors					
a. SLCRS Filtered Pathway (CV-2; Also called Elevated Release)					
<u>Midrange Noble Gas (Xe-133)</u>					
Pri: (2HVS-RQ109C)	(1)	1, 2, 3, & 4	NA	1E-4 to 1E+2 µCi/cc	35
1st PMM: (2HVS-RQ109D)					
2nd PMM: (2HVS-RQ109B)					
3rd PMM: Grab Sampling every 12 hours					
<u>High Range Noble Gas (Xe-133)</u>					
Pri: (2HVS-RQ109D)	(1)	1, 2, 3, & 4	NA	1E-1 to 1E+5 µCi/cc	35
1st PMM: (2HVS-RQ109C)					
2nd PMM: (2HVS-RQ109B)					
3rd PMM: Grab Sampling every 12 hours					
2. Noble Gas Effluent Steam Monitors					
a. Main Steam Discharge (Kr-88)					
Pri: (2MSS-RQ101A)	1/SG	1, 2, 3, & 4	≤ 3.9E-2 µCi/cc	1E-2 to 1E+3 µCi/cc	35
PMM: (Form 1/2-ENV-05.05.F07)					
Pri: (2MSS-RQ101B)	1/SG	1, 2, 3, & 4	≤ 3.9E-2 µCi/cc	1E-2 to 1E+3 µCi/cc	35
PMM: (Form 1/2-ENV-05.05.F07)					
Pri: (2MSS-RQ101C)	1/SG	1, 2, 3, & 4	≤ 3.9E-2 µCi/cc	1E-2 to 1E+3 µCi/cc	35
PMM: (Form 1/2-ENV-05.05.F07)					

^(a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 3.3-6 (Continued)

TABLE NOTATIONS

- (1) Above background
- (2) Nominal range for High.
- (3) Other PING channels are not applicable to this ODCM Control.

ACTION STATEMENTS

ACTION 35 With the number of OPERABLE channels less than required by the Minimum Channels OPERABLE requirement, either restore the inoperable Channel(s) to OPERABLE status within 72 hours, or:

- a) Initiate the preplanned alternate method of monitoring the appropriate parameter(s), and
- b) Return the channel to OPERABLE status within 30 days, or generate a condition report and explain in the next Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 4.3-3 (Continued)

BV-1 RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Noble Gas Effluent Monitors - PINGS				
a. Reactor Building/SLCRS (CV-1; Also called Elevated Release)				
<u>High Range Noble Gas</u>	S	R	Q	1, 2, 3, & 4
Pri: (RM-1VS-110 HRNG Rel)				
1st PMM: (RM-1VS-110 LRNG Rel)				
2nd PMM: (RM-1VS-107B)				
3rd PMM: Grab Sampling every 12 hours				
b. Auxiliary Building Ventilation System (VV-1; Also called Ventilation Vent)				
<u>High Range Noble Gas</u>	S	R	Q	1, 2, 3, & 4
Pri: (RM-1VS-109 HRNG Rel)				
1st PMM: (RM-1VS-109 LRNG Rel)				
2nd PMM: (RM-1VS-101B)				
3rd PMM: Grab Sampling every 12 hours				
c. Gaseous Waste Process Vent System (PV-1,2)				
<u>High Range Noble Gas</u>	S	R	Q	1, 2, 3, & 4
Pri: RM-1GW-109 HRNG Rel)				
1st PMM: (RM-1GW-109 LRNG Rel)				
2nd PMM: (RM-1GW-108B)				
3rd PMM: Grab Sampling every 12 hours				

- (a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 4.3-3 (Continued)

BV-1 RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
2. Noble Gas Effluent Steam Monitors				
a. Atmospheric Steam Dump Valve and Code Safety Relief Valve Discharge				
Pri: (RM-1MS-100A) PMM: (Form 1/2-ENV.05.05.F07)	S	R	Q	1, 2, 3, & 4
Pri: (RM-1MS-100B) PMM: (Form 1/2-ENV.05.05.F07)	S	R	Q	1, 2, 3, & 4
Pri: (RM-1MS-100C) PMM: (Form 1/2-ENV.05.05.F07)	S	R	Q	1, 2, 3, & 4
b. Auxiliary Feedwater Pump Turbine Exhaust				
Pri: (RM-1MS-101) PMM: (Form 1/2-ENV.05.05.F07)	S	R	Q	1, 2, 3, & 4

- ^(a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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ODCM CONTROLS: RADIATION MONITORING INSTRUMENTATION

TABLE 4.3-3 (Continued)

BV-2 RADIATION MONITORING INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments, PMM = Preplanned Method of Monitoring^(a)

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>	<u>MODES IN WHICH SURVEILLANCE REQUIRED</u>
1. Noble Gas Effluent Monitors				
a. SLCRS Unfiltered Pathway (CV-2; Also called Elevated Release)				
<u>Mid Range Noble Gas</u>	S	R	Q	1, 2, 3, & 4
Pri: (2HVS-RQ109C)				
1st PMM: (2HVS-RQ109D)				
2nd PMM: (2HVS-RQ109B)				
3rd PMM: Grab Sampling every 12 hours				
<u>High Range Noble Gas</u>	S	R	Q	1, 2, 3, & 4
Pri: (2HVS-RQ109D)				
1st PMM: (2HVS-RQ109C)				
2nd PMM: (2HVS-RQ109B)				
3rd PMM: Grab Sampling every 12 hours				
2. Noble Gas Effluent Steam Monitors				
a. Main Steam Discharge (Kr-88)				
Pri: (2MSS-RQ101A)	S	R	Q	1, 2, 3, & 4
PMM: (Form 1/2-ENV.05.05.F07)				
Pri: (2MSS-RQ101B)	S	R	Q	1, 2, 3, & 4
PMM: (Form 1/2-ENV.05.05.F07)				
Pri: (2MSS-RQ101C)	S	R	Q	1, 2, 3, & 4
PMM: (Form 1/2-ENV.05.05.F07)				

^(a) Instruments or actions shown as PMM are the preplanned methods to be used when the primary instrument is inoperable. SINCE the PMM instruments shown are not considered comparable alternate monitoring channels, THEN the ODCM Surveillance Requirements do not apply to the PMM. Therefore, the reporting requirement of Action 35b would still apply when inoperability of the primary instrument exceeds 30 days.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

CONTROLS: RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

3.3.3.9 In accordance with T.S. 5.5.2.a, the radioactive liquid effluent monitoring instrumentation channels shown in ODCM Control 3.3.3.9, Table 3.3-12 shall be OPERABLE with their alarm/trip setpoints set to ensure that the limits of ODCM CONTROL 3.11.1.1 are not exceeded. The alarm/trip setpoints of the radiation monitoring channels shall be determined in accordance with 1/2-ODC-2.01.

Applicability - During Releases Through the Flow Path:

- a. For all Gross Activity (e.g.; Beta or Gamma) Radioactivity Monitors
- b. For all Flow Rate Measurement Devices

Applicability - During Liquid Additions to the Tank:

- a. For all Tank Level Indicating Devices

Action:

- a. With a radioactive liquid effluent monitoring instrumentation channel alarm/trip setpoint less conservative than required by the above specification, immediately suspend the release of radioactive liquid effluents monitored by the affected channel or correct the alarm/trip setpoint.
- b. With one or more radioactive liquid effluent monitoring instrumentation channels inoperable, take the ACTION shown in ODCM Control 3.3.3.9, Table 3.3-12 or conservatively reduce the alarm setpoint. Exert a best effort to return the channel to operable status within 30 days, and if unsuccessful, generate a Condition Report and explain in the next Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner. ^(a)
- c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.9 Each radioactive liquid effluent monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL OPERATIONAL TEST operations at the frequencies shown in ODCM Control 3.3.3.9, Table 4.3-12.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.9 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 33-12

BV-1 RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Gross Activity Monitors Providing Automatic Termination Of Release		
a. Liquid Waste Effluents Monitor Pri: [RM-1LW-104]	(1)	23
b. Liquid Waste Contaminated Drain Monitor Pri: [RM-1LW-116]	(1)	23
c. Auxiliary Feed Pump Bay Drain Monitor Pri: [RM-1DA-100]	(1)	24
2. Gross Activity Monitors Not Providing Termination Of Release		
a. Component Cooling-Recirculation Spray Heat Exchangers River Water Monitor Pri: [RM-1RW-100]	(1)	24
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Line Pri: [FR-1LW-104] for [RM-1LW-104]	(1)	25
b. Liquid Waste Contaminated Drain Line Pri: [FR-1LW-103] for [RM-1LW-116]	(1)	25
c. Cooling Tower Blowdown Line Pri: [FT-1CW-101-1], or 1st Alt: [FT-1CW-101] and [2CWS-FT101], or 2nd Alt: Perform 1MSP-31.06-I	(1)	25A
4. Tank Level Indicating Devices (for tanks outside plant building)		
a. Primary Water Storage Tank Pri: [LI-1PG-115A] for [1BR-TK-6A]	(1)	26
b. Primary Water Storage Tank Pri: [LI-1PG-115B] for [1BR-TK-6B]	(1)	26
c. Steam Generator Drain Tank Pri: [LI-1LW-110] for [1LW-TK-7A]	(1)	26
d. Steam Generator Drain Tank Pri: [LI-1LW-111] for [1LW-TK-7B]	(1)	26

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.9 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 3.3-12 (continued)

BV-2 RADIOACTIVE LIQUID EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>ACTION</u>
1. Gross Radioactivity Monitor Providing Alarm, <u>And</u> Automatic Termination Of Release		
a. Liquid Waste Process Effluent Monitor Pri: [2SGC-RQ100]	(1)	23
2. Gross Radioactivity Monitors Providing Alarm, <u>But Not</u> Providing Termination Of Release		
a. None Required		
3. Flow Rate Measurement Devices		
a. Liquid Radwaste Effluent Pri: [2SGC-FS100]	(1)	25
b. Cooling Tower Blowdown Line Pri: [FT-1CW-101-1], or 1st Alt: [FT-1CW-101] and [2CWS-FT101], or 2nd Alt: Perform 1MSP-31.06-I	(1)	25A
4. Tank Level Indicating Devices (for tanks outside plant buildings)		
a. None Required		

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.9 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 3.3-12 (continued)

ACTION STATEMENTS

Action 23 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases may be initiated (or resumed) provided that prior to release:

1. At least two independent samples are analyzed in accordance with ODCM SURVEILLANCE REQUIREMENT 4.11.1.1.1, and at least two technically qualified members of the Facility Staff independently verify the release rate calculations⁽¹⁾ and discharge valving, or
2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

Otherwise, suspend release of radioactive effluents via this pathway.

Action 24 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:

1. That at least once per 12 hours grab samples are analyzed for gross radioactivity (beta or gamma) at a Lower Limit of Detection (LLD) of at least 1E-7 uCi/mL, or
2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

⁽¹⁾ Since the computer software used for discharge permit generation automatically performs the release rate calculations, then the independent signatures on the discharge permit for "preparer" and "reviewer" satisfy the requirement for "...two technically qualified members of the Facility Staff independently verify the release rate calculations..."

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

Table 3.3-12 (continued)

ACTION STATEMENTS

- Action 25 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:
1. The flow rate is estimated at least once per 4 hours during actual releases. (Pump curves may be used to estimate flow), or
 2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.
- Action 25A With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue by using the method required for the 1st Alternate, or by using the instruments required by the 2nd Alternate, as follows:
1. 1st Alternate: Initiate monitoring with the comparable alternate monitoring channel, which includes both [FT-1CW-101] and [2CWS-FT101]. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement, or
 2. 2nd Alternate: The dilution flow rate is calculated at least once per 4 hours during actual releases using the methods described in procedure 1MSP-31.06-I⁽¹⁾.
- Action 26 With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, liquid additions to this tank may continue provided:
1. The tank liquid level is estimated during all liquid additions to the tank, or
 2. Initiate monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

⁽¹⁾ **NOTE:** This MSP requires local water height measurements to calculate the total cooling tower blowdown flow rate. As a guide, the combined flow rate result of this procedure should be similar to the ODCM design value 22,800 gpm (i.e., BV-1 flow rate = 15,000 gpm, + BV-2 flow rate = 7,800 gpm) which assumes operation of a BV-1 Turbine Plant RW Pump, a BV-1 Rx Plant RW Pump, a BV-2 SWS Pump, and normal evaporation via the cooling tower plume.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 4.3-12

BV-1 RADIOACTIVE LIQUID EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments, Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
1. Gross Beta or Gamma Radioactivity Monitors Providing Alarm And Automatic Termination Of Release				
a. Liquid Radwaste Effluent Line Pri: (RM-1LW-104)	D	P ⁽⁵⁾	R ⁽³⁾	Q ⁽¹⁾
b. Liquid Waste Contaminated Drain Line Pri: (RM-1LW-116)	D	P ⁽⁵⁾	R ⁽³⁾	Q ⁽¹⁾
c. Auxiliary Feed Pump Bay Drain Monitor Pri: (RM-1DA-100)	D	D	R ⁽³⁾	Q ⁽¹⁾
2. Gross Beta Or Gamma Radioactivity Monitors Providing Alarm But Not Providing Automatic Termination Of Release				
a. Component Cooling - Recirculation Spray Heat Exchangers River Water Monitor Pri: (RM-1RW-100)	D	M ⁽⁵⁾	R ⁽³⁾	Q ⁽²⁾
3. Flow Rate Monitors				
a. Liquid Radwaste Effluent Lines Pri: (FR-1LW-104) for (RM-1LW-104)	D ⁽⁴⁾	NA	R	Q
b. Liquid Waste Contaminated Drain Line Pri: (FR-1LW-103) for (RM-1LW-116)	D ⁽⁴⁾	NA	R	Q
c. Cooling Tower Blowdown Line Pri: [FT-1CW-101-1], or 1st Alt: [FT-1CW-101] and [2CWS-FT101]	D ⁽⁴⁾	NA	R	Q

NOTE: SINCE the 2nd Alternate to the Cooling Tower Blowdown Line is a procedure, (i.e., 1MSP-31.06-I), THEN Surveillance Requirements do not apply to the 2nd Alternate.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 4.3-12 (continued)

**BV-1 RADIOACTIVE LIQUID EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

Pri = Primary Instruments, Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
4. Tank Level Indicating Devices (for tanks outside plant buildings)				
a. Primary Water Storage Tank Pri: (LI-1PG-115A) for (1BR-TK-6A)	D*	NA	R	Q
b. Primary Water Storage Tank Pri: (LI-1PG-115B) for (1BR-TK-6B)	D*	NA	R	Q
c. Steam Generator Drain Tank Pri: (LI-1LW-110) for (1LW-TK-7A)	D*	NA	R	Q
d. Steam Generator Drain Tank Pri: (LI-1LW-111) for (1LW-TK-7B)	D*	NA	R	Q

*During liquid additions to the tank.

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TABLE 4.3-12 (continued)

BV-2 RADIOACTIVE LIQUID EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments, Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
1. Gross Radioactivity Monitor Providing Alarm And Automatic Termination Of Release				
a. Liquid Waste Process Effluent Pri: (2SGC-RQ100)	D	P ⁽⁵⁾	R ⁽⁷⁾⁽³⁾	Q ⁽⁶⁾
2. Flow Rate Measurement Devices				
a. Liquid Radwaste Effluent Pri: (2SGC-FS100)	D ⁽⁴⁾	NA	R	Q
b. Cooling Tower Blowdown Line Pri: [FT-1CW-101-1], or 1st Alt: [FT-1CW-101] and [2CWS-FT101]	D ⁽⁴⁾	NA	R	Q
<u>NOTE:</u> SINCE the 2nd Alternate to the Cooling Tower Blowdown Line is a procedure, (i.e., 1MSP-31.06-I), THEN Surveillance Requirements do not apply to the 2nd Alternate.				
3. Tank Level Indicating Devices (for tanks outside plant buildings)				
a. None Required				

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 4.3-12 (continued)

TABLE NOTATION

- (1) The CHANNEL OPERATIONAL TEST shall also demonstrate that automatic isolation of this pathway and Control Room Alarm Annunciation occurs if any of the following conditions exist:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Downscale failure.
 3. Instrument controls not set in operate mode.
- (2) The CHANNEL OPERATIONAL TEST shall also demonstrate that Control Room Alarm Annunciation occurs if any of the following conditions exist:
 1. Instrument indicates measured levels above the alarm/trip setpoint.
 2. Downscale failure.
 3. Instrument controls are not set in operate mode.
- (3) The initial CHANNEL CALIBRATION for radioactivity measurement instrumentation shall be performed using one or more of the reference standards certified by the National Institute of Standards and Technology (NIST) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NIST. These standards should permit calibrating the system over its intended range of energy and rate capabilities. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration should be used, at intervals of at least once per 18 months. This can normally be accomplished during refueling outages. (Existing plants may substitute previously established calibration procedures for this requirement).
- (4) 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.
- (5) A SOURCE CHECK may be performed utilizing the installed means or flashing the detector with a portable source to obtain an upscale increase in the existing count rate to verify channel response.

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ODCM CONTROLS: RETS INSTRUMENTATION FOR LIQUID EFFLUENTS

TABLE 4.3-12 (continued)

TABLE NOTATION

(6) The CHANNEL CALIBRATION shall also demonstrate that automatic isolation of this pathway and Control Room Alarm Annunciation occurs if the instrument indicates measured levels above the alarm/trip setpoint.

(7) The CHANNEL CALIBRATION shall also demonstrate that Control Room Alarm Annunciation occurs if either of the following conditions exist:

1. Downscale failure.
2. Instrument controls are not set in operate mode.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

CONTROLS: RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

3.3.3.10 In accordance with T.S. 5.5.2.a, the radioactive gaseous effluent monitoring instrumentation channels shown in ODCM Control 3.3.3.10, Table 3.3-13 shall be operable with their alarm/trip setpoints set to ensure that the limits of ODCM CONTROL 3.11.2.1 are not exceeded. The alarm/trip setpoints of the radiation monitoring channels shall be determined in accordance with 1/2-ODC-2.02.

Applicability: During releases through the flow path.

Action:

- a. With a radioactive gaseous process or effluent monitoring instrumentation channel alarm/trip setpoint less conservative than a value which will ensure that the limits of ODCM CONTROL 3.11.2.1 are met, immediately suspend the release of radioactive gaseous effluents monitored by the affected channel or correct the alarm/trip setpoint.
- b. With one or more radioactive gaseous effluent monitoring instrumentation channels inoperable, take the ACTION shown in ODCM Control 3.3.3.10, Table 3.3-13 or conservatively reduce the alarm setpoint. Exert a best effort to return the channel to operable status within 30 days, and if unsuccessful, generate a Condition Report and explain in the next Radioactive Effluent Release Report why the inoperability was not corrected in a timely manner. ^(a)
- c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.3.3.10 Each radioactive gaseous effluent monitoring instrumentation channel shall be demonstrated operable by performance of the CHANNEL CHECK, SOURCE CHECK, CHANNEL CALIBRATION, and CHANNEL OPERATIONAL TEST operations at the frequencies shown in ODCM Control 3.3.3.10, Table 4.3-13.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 3.3-13

BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. Gaseous Waste/Process Vent System (PV-1/2)			
a. Noble Gas Activity Monitor Pri: [RM-1GW-108B], or <u>Alt For Continuous Release:</u> [RM-1GW-109 LRNG Rel] may only be used as the comparable alternate monitoring channel for continuous releases via this pathway. <u>Alt For Batch Releases:</u> [NONE, see Action 27]; For information, [RM-1GW-109 LRNG Rel] SHALL NOT be used as the comparable alternate monitoring channel for batch releases of the BV-1 GWDTs or the BV-2 GWSTs. Specifically, <u>SINCE</u> this channel does not perform the same automatic isolation function as the primary channel, <u>THEN</u> ACTION 27 shall be followed for batch releases of the BV-1 GWDTs or the BV-2 GWSTs via this pathway.	(1)	*	27,29,30A,30B
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [RM-1GW-109], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1GW-108] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment	(1)	*	32
c. System Effluent Flow Rate Measuring Device Pri: [FR-1GW-108], or Alt: [RM-1GW-109 LR STK FL]	(1)	*	28A
d. Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 1.b) Pri: [ABPM-1GW-109-PISFlow], or 1st Alt: Rotameter for [RM-1GW-108] 2nd Alt: Calibrated Flow Instrument	(1)	*	28B

* During Releases via this pathway.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

^(b) May be used as a sampled flow path provided flow is verified. Radiation monitor operability is not required.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 3.3-13 (continued)

BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

<u>INSTRUMENT</u>		<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
2. Auxiliary Building Ventilation System (VV-1; Also called Ventilation Vent)				
a.	Noble Gas Activity Monitor Pri: [RM-1VS-109 LRNG Rel], or Alt: [RM-1VS-101B]	(1)	*	29,30A
b.	Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [RM-1VS-109], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1VS-101] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment	(1)	*	32
c.	System Effluent Flow Rate Measuring Device Pri: [FR-1VS-101] or Alt: [RM-1VS-109 LR STK FL]	(1)	*	28A
d.	Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 2.b) Pri: [ABPM-1VS-109-PISFlow], or 1st Alt: [FT-1RM-101] & [FI-1RM-101] 2nd Alt: Calibrated Flow Instrument	(1)	*	28B
3. Reactor Building/SLCRS (CV-1; Also called Elevated Release)				
a.	Noble Gas Activity Monitor Pri: [RM-1VS-110 LRNG Rel], or Alt: [RM-1VS-107B]	(1)	*	29,30A
b.	Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [RM-1VS-110], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1VS-107] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment	(1)	*	32
c.	System Effluent Flow Rate Measuring Device Pri: [FR-1VS-112] ^(b) or Alt: [RM-1VS-110 LR STK FL]	(1)	*	28A
d.	Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 3.b) Pri: [ABPM-1VS-110-PISFlow], or 1st Alt: Rotameter for [RM-1VS-107] 2nd Alt: Calibrated Flow Instrument	(1)	*	28B

* During Releases via this pathway.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

^(b) May be used as a sampled flow path provided flow is verified. Radiation monitor operability is not required.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 3.3-13 (continued)

BV-2 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
1. SLCRS Unfiltered Pathway (VV-2; Also called Ventilation Vent)			
a. Noble Gas Activity Monitor Pri: [2HVS-RQ101B]	(1)	*	29, 30B
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2HVS-RQ101], or Alt: Continuous collection with portable sampling equipment	(1)	*	32
c. Process Flow Rate Monitor Pri: Monitor Item 29 for [2HVS-VP101]	(1)	*	28A
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 1.b) Pri: [2HVS-FIT101-1], or Alt: Calibrated Flow Instrument	(1)	*	28B
2. SLCRS Filtered Pathway (CV-2; Also called Elevated Release)			
a. Noble Gas Activity Monitor Pri: [2HVS-RQ109B]	(1)	*	29, 30B
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2HVS-RQ109] High Flow Path, or Alt: Continuous collection with portable sampling equipment	(1)	*	32
c. Process Flow Rate Monitor Pri: Monitor Item 29 for [2HVS-FR22], or 1st Alt: [2HVS-FI22A and FI22C], or 2nd Alt: [2HVS-FI22B and FI22D]	(1)	*	28A
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 2.b) Pri: Monitor Item 28 & 72 for [2HVS-DAU109B], or Alt: Calibrated Flow Instrument	(1)	*	28B
3. Decontamination Building Vent (DV-2)			
a. Noble Gas Activity Monitor Pri: [2RMQ-RQ301B]	(1)	*	29
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2RMQ-RQ301], or Alt: Continuous collection with portable sampling equipment	(1)	*	32
c. Process Flow Rate Monitor	None	None	None
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 3.b) Pri: [2RMQ-FIT301-1], or Alt: Calibrated Flow Instrument	(1)	*	28B

^(a) * During Releases via this pathway.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 3.3-13 (continued)

BV-2 RADIOACTIVE GASEOUS EFFLUENT MONITORING INSTRUMENTATION

Pri = Primary Instruments Alt = Alternate Instruments ^(a)

	<u>INSTRUMENT</u>	<u>MINIMUM CHANNELS OPERABLE</u>	<u>APPLICABILITY</u>	<u>ACTION</u>
4. DELETED				
5. Waste Gas Storage Vault Vent (WV-2)				
a.	Noble Gas Activity Monitor Pri: [2RMQ-RQ303B]	(1)	*	29
b.	Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2RMQ-RQ303], or Alt: Continuous collection with portable sampling equipment	(1)	*	32
c.	Process Flow Rate Monitor	None	None	None
d.	Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 5.b) Pri: [2RMQ-FIT303-1], or Alt: Calibrated Flow Instrument	(1)	*	28B

* During Releases via this pathway.

^(a) Condition Report generation and reporting in the Radioactive Effluent Release Report (per Control 3.3.3.10 Action b) do not apply when using an alternate to satisfy inoperability of the primary instrument beyond 30 days.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 3.3-13 (continued)

ACTION STATEMENTS

Action 27 APPLICABLE FOR BATCH RELEASES OF BV-1 GASEOUS WASTE DECAY TANKS OR BV-2 GASEOUS WASTE STORAGE TANKS

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, the contents of the Unit 1 Gaseous Waste Decay Tanks (GWDT's) or the Unit 2 Gaseous Waste Storage Tanks (GWST's) may be released to the environment provided that prior to initiating (or resuming) the release:

1. At least two independent samples of the tank's content are analyzed and at least two technically qualified members of the Facility Staff independently verify the release rate calculations and discharge valve lineup, or
2. Initiate continuous monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM Control requirement.

Otherwise, suspend releases of radioactive effluents via this pathway.

Action 28A APPLICABLE FOR BV-1 SYSTEM EFFLUENT FLOW RATE MEASURING DEVICES OR BV-2 PROCESS FLOWRATE MONITORS

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:

1. The system/process flow rate is estimated at least once per 4 hours (or assumed to be at the ODCM design value ⁽¹⁾), or
2. Initiate continuous monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM Control requirement.

⁽¹⁾ In lieu of estimating the system/process flow rate at least once per 4 hours, the system/process flow rate can be assumed to be at the following ODCM design values:

- 1,450 cfm = BV-1 Gaseous Waste/Process Vent System (PV-1,2)
- 62,000 cfm = BV-1 Auxiliary Building Ventilation System (VV-1)
- 49,300 cfm = BV-1 Reactor Building/SLCRS (CV-1)
- 23,700 cfm = BV-2 SLCRS Unfiltered Pathway (VV-2)
- 59,000 cfm = BV-2 SLCRS Filtered Pathway (CV-2)

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TABLE 3.3-13 (continued)

ACTION STATEMENTS

Action 28B APPLICABLE FOR BV-1 SAMPLER FLOW RATE MEASURING DEVICES OR BV-2 SAMPLER FLOWRATE MONITORS

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:

1. The sampler flow rate is estimated at least once per 4 hours, or
2. Initiate continuous monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM Control requirement.

Action 29 APPLICABLE FOR CONTINUOUS RELEASES

With the number of channels OPERABLE less than required by the Minimum Channels OPERABLE requirement, effluent releases via this pathway may continue provided:

1. Grab samples (or local monitor readings)⁽¹⁾ are taken at least once per 12 hours. If grab samples are taken, these samples are to be analyzed for gross activity within 24 hours, or
2. Initiate continuous monitoring with the comparable alternate monitoring channel. ODCM Surveillance requirements applicable to the inoperable channel shall apply to the comparable alternate monitoring channel when used to satisfy this ODCM CONTROL requirement.

⁽¹⁾ For BV-2, there are situations where the local monitor (e.g.; the RM-80) is capable of performing the intended monitoring function, but the communications are lost to the Control Room. In this case, the local monitor can be read at least once per 12 hours in-lieu of obtaining grab samples at least once per 12 hours.

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TABLE 3.3-13 (continued)
ACTION STATEMENTS

Action 30A APPLICABLE FOR THE INITIAL BATCH PURGE OF THE BV-1 REACTOR CONTAINMENT

With the number of channels OPERABLE less than required by minimum Channels OPERABLE requirement, immediately suspend PURGING of Reactor Containment via this pathway if both RM-1VS-104A and B are not OPERABLE with the purge/exhaust system in service. The following should also be noted:

1. As stated, this Action is applicable for INOPERABLE monitors only when performing the initial batch purge of the reactor containment atmosphere (i.e.; immediately after reactor containment atmosphere equalization).
2. Since all other releases of reactor containment atmosphere (i.e.; after the initial batch purge) are considered continuous releases, then this Action is not applicable. Therefore, Action 29 is applicable for INOPERABLE monitors when performing a continuous release of the reactor containment atmosphere.

Action 30B APPLICABLE FOR THE INITIAL BATCH PURGE OF THE BV-2 REACTOR CONTAINMENT

With the number of channels OPERABLE less than required by Minimum Channels OPERABLE requirement, immediately suspend PURGING of Reactor Containment via this pathway if both 2HVR-RQ104A and 104B are not OPERABLE with the purge/exhaust system in service. The following should also be noted:

1. As stated, this Action is applicable for INOPERABLE monitors only when performing the initial batch purge of the reactor containment atmosphere (i.e.; immediately after reactor containment atmosphere equalization).
2. Since all other releases of reactor containment atmosphere (i.e.; after the initial batch purge) are considered continuous releases, then this Action is not applicable. Therefore, Action 29 is applicable for INOPERABLE monitors when performing a continuous release of the reactor containment atmosphere.

Action 32 APPLICABLE FOR CONTINUOUS RELEASES

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 as required in ODCM Control 3.11.2.1, Table 4.11-2, or sampled and analyzed once every 12 hours.

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TABLE 4.3-13

**BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

Pri = Primary Instruments Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
1. Gaseous Waste/Process Vent System (PV-1/2)				
a. Noble Gas Activity Monitor Pri: [RM-1GW-108B], or Alt For Continuous Release: [RM-1GW-109 LRNG Rel] This channel may only be used as the comparable alternate monitoring channel for continuous releases via this pathway. Alt For Batch Releases: [NONE, See Action 27]; For information, [RM-1GW-109 LRNG Rel] SHALL NOT be used as the comparable alternate monitoring channel for batch releases of the BV-1 GWDTs or the BV-2 GWSTs. Specifically, <u>SINCE</u> this channel does not perform the same automatic isolation function as the primary channel, <u>THEN</u> ACTION 27 shall be followed for batch releases of the BV-1 GWDTs or the BV-2 GWSTs via this pathway	P	P ⁽⁴⁾	R ⁽³⁾	Q ⁽¹⁾
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [RM-1GW-109], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1GW-108] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment	W	NA	NA	NA
c. System Effluent Flow Rate Measuring Device Pri: [FR-1GW-108], or Alt: [RM-1GW-109 LR STK FL]	P	NA	R	Q
d. Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 1.b) Pri: [ABPM-1GW-109-PISFlow], or 1st Alt: Rotameter for [RM-1GW-108] 2nd Alt: Calibrated Flow Instrument	D*	NA	R	Q

* During Releases via this pathway.

^(b) May be used as a sampled flow path provided flow is verified. Radiation monitor operability is not required.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 4.3-13

**BV-1 RADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS**

Pri = Primary Instruments Alt = Alternate Instruments

2. Auxiliary Building Ventilation System (VV-1; Also called Ventilation Vent)

a. Noble Gas Activity Monitor	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾	Q ⁽²⁾
Pri: [RM-1VS-109 LRNG Rel], or Alt: [RM-1VS-101B]				
b. Particulate and Iodine Sampler	W	NA	NA	NA
Pri: Filter Paper & Charcoal Cartridge for [RM-1VS-109], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1VS-101] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment				
c. System Effluent Flow Rate Measurement Device	D	NA	R	Q
Pri: [FR-1VS-101], or Alt: [RM-1VS-109 LR STK FL]				
d. Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 2.b)	D	NA	R	Q
Pri: [ABPM-1VS-109-PISFlow], or 1st Alt: [FT-1RM-101] & [FI-1RM-101] 2nd Alt: Calibrated Flow Instrument				

3. Reactor Building/SLCRS (CV-1; Also called Elevated Release)

a. Noble Gas Activity Monitor	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾	Q ⁽²⁾
Pri: [RM-1VS-110 LRNG Rel], or Alt: [RM-1VS-107B]				
b. Particulate and Iodine Sampler	W	NA	NA	NA
Pri: Filter Paper & Charcoal Cartridge for [RM-1VS-110], or 1st Alt: Filter Paper & Charcoal Cartridge for [RM-1VS-107] ^(b) , or 2nd Alt: Continuous collection with portable sampling equipment				
c. System Effluent Flow Rate Measuring Device	D	NA	R	Q
Pri: [FR-1VS-112] ^(b) , or Alt: [RM-1VS-110 LR STK FL]				
d. Sampler Flow Rate Measuring Device Used for Particulate and Iodine Sample Collection (see 3.b)	D	NA	R	Q
Pri: [ABPM-1VS-110-PISFlow], or 1st Alt: Rotameter for [RM-1VS-107] 2nd Alt: Calibrated Flow Instrument				

*** During purging of Reactor Containment via this pathway.

^(b) May be used as a sampled flow path provided flow is verified. Radiation monitor operability is not required.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 4.3-13 (continued)

BV-2 RADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
1. SLCRS Unfiltered Pathway (VV-2; Also called Ventilation Vent)				
a. Noble Gas Activity Monitor Pri: [2HVS-RQ101B]	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾⁽⁶⁾	Q ⁽⁵⁾
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2HVS-RQ101], or Alt: Continuous collection with portable sampling equipment	W	NA	NA	NA
c. Process Flow Rate Monitor Pri: (Monitor Item 29 for [2HVS-VP101])	D	NA	R	Q
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 1.b) Pri: [2HVS-FIT101-1], or Alt: Calibrated Flow Instrument	D	NA	R	Q
2. SLCRS Filtered Pathway (CV-2; Also called Elevated Release)				
a. Noble Gas Activity Monitor Pri: [2HVS-RQ109B]	D	M ⁽⁴⁾ , P ⁽⁴⁾ ***	R ⁽³⁾⁽⁶⁾	Q ⁽⁵⁾
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2HVS-RQ109] High Flow Path, or Alt: Continuous collection with portable sampling equipment	W	NA	NA	NA
c. Process Flow Rate Monitor Pri: Monitor Item 29 for [2HVS-FR22], or 1st Alt: [2HVS-FI22A and FI22C], or 2nd Alt: [2HVS-FI22B and FI22D]	D	NA	R	Q
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 2.b) Pri: Monitor Items 28 and 72 for [2HVS-DAU109B], or Alt: Calibrated Flow Instrument	D	NA	R	Q
3. Decontamination Building Vent (DV-2)				
a. Noble Gas Activity Monitor Pri: [2RMQ-RQ301B]	D	M ⁽⁴⁾	R ⁽³⁾⁽⁶⁾	Q ⁽⁵⁾
b. Particulate and Iodine Sampler Pri: Filter Paper & Charcoal Cartridge for [2RMQ-RQ301], or Alt: Continuous collection with portable sampling equipment	W	NA	NA	NA
c. Process Flow Rate Monitor	NA	NA	NA	NA
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 3.b) Pri: [2RMQ-FIT301-1], or Alt: Calibrated Flow Instrument	D	NA	R	Q

*** During purging of Reactor Containment via this pathway.

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 4.3-13 (continued)

BV-2 RADIOACTIVE GASEOUS EFFLUENT MONITORING
INSTRUMENTATION SURVEILLANCE REQUIREMENTS

Pri = Primary Instruments Alt = Alternate Instruments

<u>INSTRUMENT</u>	<u>CHANNEL CHECK</u>	<u>SOURCE CHECK</u>	<u>CHANNEL CALIBRATION</u>	<u>CHANNEL OPERATIONAL TEST</u>
4. DELETED				
5. Waste Gas Storage Vault Vent (WV-2)				
a. Noble Gas Activity Monitor Pri: [2RMQ-RQ303B]	D	M ⁽⁴⁾	R ⁽³⁾⁽⁶⁾	Q ⁽⁵⁾
b. Particulate and Iodine Samples Pri: Filter Paper & Charcoal Cartridge for [2RMQ-RQ303], or Alt: Continuous collection with portable sampling equipment	W	NA	NA	NA
c. Process Flow Rate Monitor	NA	NA	NA	NA
d. Sampler Flow Rate Monitor Used for Particulate and Iodine Sample Collection (see 5.b) Pri: [2RMQ-FIT303-1], or Alt: Calibrated Flow Instrument	D	NA	R	Q

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ODCM CONTROLS: RETS INSTRUMENT FOR GASEOUS RELEASES

TABLE 4.3-13 (continued)

TABLE NOTATION

- (1) The CHANNEL OPERATIONAL 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. Downscale failure.
 - c. Instrument controls not set in operate mode.
- (2) The CHANNEL OPERATIONAL 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. Downscale failure.
 - c. Instrument controls not set in operate mode.
- (3) The initial CHANNEL CALIBRATION for radioactivity measurement instrumentation shall be performed using one or more of the reference standards certified by National Institute of Standards and Technology (NIST) or using standards that have been obtained from suppliers that participate in measurement assurance activities with NIST. These standards should permit calibrating the system over its intended range of energy and rate capabilities. For subsequent CHANNEL CALIBRATION, sources that have been related to the initial calibration should be used, at intervals of at least once per 18 months. This can normally be accomplished during refueling outages.
- (4) A SOURCE CHECK may be performed utilizing the installed means or flashing the detector with a portable source to obtain an upscale increase in the existing count rate to verify channel response.
- (5) The CHANNEL OPERATIONAL TEST shall also demonstrate that Control Room Alarm Annunciation occurs if the instrument indicates measured levels above the alarm/trip setpoint.
- (6) The CHANNEL CALIBRATION shall also demonstrate that Control Room Alarm Annunciation occurs if either of the following conditions exist:
 1. Downscale failure.
 2. Instrument controls are not set in operate mode.

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ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION

CONTROLS: LIQUID EFFLUENT CONCENTRATION

3.11.1.1 In accordance with T.S. 5.5.2.b and T.S. 5.5.2.c, the concentration of radioactive material released at any time from the site (see 1/2-ODC-2.01, Figure 5-1) shall be limited to 10 times the EC's specified in 10 CFR Part 20, Appendix B (20.1001-20.2402), Table 2, Column 2 for radionuclides other than dissolved or entrained noble gases. This is referred to as the ODCM Effluent Concentration Limit (OEC). For dissolved or entrained noble gases, the concentration shall be limited to 2E-4 uCi/mL total activity.

Applicability: At all times.

Action:

a. With the concentration of radioactive material released from the site to unrestricted areas exceeding the above limits; immediately restore the concentration within the above limits, and

b. Submit a Special Report to the Commission within 30 days in accordance with 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1).

c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.1.1 Radioactive liquid wastes shall be sampled and analyzed according to the sampling and analysis program of ODCM Control 3.11.1.1, Table 4.11-1*.

4.11.1.1.2 The results of radioactive analysis shall be used in accordance with 1/2-ODC-2.01 to assure that the concentration at the point of release are maintained within the limits of ODCM CONTROL 3.11.1.1.

4.11.1.1.3 When BV-1 primary to secondary leakage exceeds 0.1 gpm (144 gpd), samples of the Turbine Building Sump shall be obtained every 8 hours to ensure that the Turbine Building Sump concentration does not exceed 1 OEC. Once it is determined that an OEC is reached, the Turbine Building Sump shall be routed to the Chemical Waste Sump.

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ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION

TABLE 4.11-1

RADIOACTIVE LIQUID WASTE SAMPLING AND ANALYSIS PROGRAM

LIQUID RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) (uCi/mL) ^(a)
A. Batch Waste Release Tanks^(d)	P Each Batch^(h)	P Each Batch^(h)	Principal Gamma Emitters^(f)	5E-7
			I-131	1E-6
	P One Batch/M^(h)	M	Dissolved and Entrained Gases (Gamma Emitters)	1E-5
	P Each Batch^(h)	M Composite^(b)	H-3	1E-5
			Gross Alpha	1E-7
	P Each Batch^(h)	Q Composite^(b)	Sr-89, Sr-90	5E-8
			Fe-55	1E-6
B. Continuous Releases^{(e)(g)}	Grab Sample^(g)	W Composite^(c)	Principal Gamma Emitters^(f)	5E-7
			I-131	1E-6
	Grab Sample^(g)	M	Dissolved and Entrained Gases (Gamma Emitters)	1E-5
			H-3	1E-5
	Grab Sample^(g)	M Composite^(c)	Gross Alpha	1E-7
			Sr-89, Sr-90	5E-8
	Grab Sample^(g)	Q Composite^(c)	Fe-55	1E-6

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ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION

TABLE 4.11-1 (continued)

TABLE NOTATION

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

For a particular measurement system (which may include radiochemical separation):

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

where:

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume);

S_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute);

E is the counting efficiency (as counts per transformation);

V is the sample size (in units of mass or volume);

2.22 is the number of transformations per minute per picocurie;

Y is the fractional radiochemical yield (when applicable);

λ is the radioactive decay constant for the particular radionuclide;

ΔT is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of S_b 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 ΔT should be used in the calculations.

The LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a a posteriori (after the fact) limit for a particular measurement.

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ODCM CONTROLS: LIQUID EFFLUENT CONCENTRATION

TABLE 4.11-1 (continued)

TABLE NOTATION

- (b) A composite sample is one in which the quantity of liquid sampled is proportional to the quantity of liquid waste discharged and in which the method of sampling employed results in a specimen which is representative of the liquids released.
- (c) To be representative of the quantities and concentrations of radioactive materials in liquid effluents, samples shall be collected continuously in proportion to the rate of flow of the effluent stream. Prior to analyses, all samples taken for the composite shall be thoroughly mixed in order for the composite sample to be representative of the effluent release.
- (d) A batch release exists when the discharge of liquid wastes is from a discrete volume. Prior to sampling for analyses, each batch shall be isolated, and then thoroughly mixed to assure representative sampling.
- (e) A continuous release exists when the discharge of liquid wastes is from a non-discrete volume; e.g., from a volume of a system having an input flow during the continuous release. Releases from the Turbine Building Drains and the AFW Pump Bay Drain System and Chemical Waste Sump are considered continuous when the primary to secondary leak rate exceeds 0.1 gpm (142 gpd).
- (f) The principal gamma emitters for which the LLD 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 peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should be reported as "less than" the nuclide's LLD, and should not be reported as being present at the LLD level for that nuclide. The "less than" values should not be used in the required dose calculations. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Radioactive Effluent Release Report.
- (g) When radioactivity is identified in the secondary system, a RWDA-L should be prepared on a monthly basis to account for the radioactivity that will eventually be discharged to the Ohio River.
- (h) Whenever the BV-2 Recirculation Drain Pump(s) are discharging to catch basin 16, sampling will be performed by means of a grab sample taken every 4 hours during pump operation.

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ODCM CONTROLS: LIQUID EFFLUENT DOSE

CONTROLS: LIQUID EFFLUENT DOSE

- 3.11.1.2 In accordance with T.S.5.5.2.d and T.S. 5.5.2.c, the dose or dose commitment to MEMBER(S) OF THE PUBLIC from radioactive materials in liquid effluents released from the reactor unit (see 1/2-ODC-2.01 Figure 5-1), which is considered to include the onsite ISFSI, shall be limited:
- 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, and
 - 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:

- With the calculated dose from the release of radioactive materials in liquid effluents, which is considered to include the onsite ISFSI, exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), 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, and the proposed corrective actions to be taken to assure the subsequent releases will be within the above limits. (This Special 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)*.
- The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.11.1.2.1 Dose Calculations. Cumulative dose contributions from liquid effluents, which is considered to include the onsite ISFSI, shall be determined in accordance with 1/2-ODC-2.01 at least once per 31 days.

* Applicable only if drinking water supply is taken from the receiving water body within three miles of the plant discharge (three miles downstream only).

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ODCM CONTROLS: LIQUID RADWASTE TREATMENT SYSTEM

CONTROLS: LIQUID RADWASTE TREATMENT SYSTEM

3.11.1.3 In accordance with T.S.5.5.2.f, the Liquid Radwaste Treatment System shall be used to reduce the radioactive materials in each liquid waste batch prior to its discharge when the projected doses due to liquid effluent releases from the reactor unit (see 1/2-ODC-2.01 Figure 5-1) when averaged over 31 days would exceed 0.06 mrem to the total body or 0.2 mrem to any organ.

Applicability: At all times.

Action:

- a. With liquid waste being discharged without treatment and exceeding the limits specified, prepare and submit to the Commission within 30 days pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1) 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 operational status, and
 - 3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.3.1 Doses due to liquid releases shall be projected at least once per 31 days, in accordance with 1/2-ODC-2.01.

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ODCM CONTROLS: LIQUID HOLDUP TANKS

CONTROLS: LIQUID HOLDUP TANKS

3.11.1.4 In accordance with T.S.5.5.8, the quantity of radioactive material contained in each of the following tanks shall be limited to the values listed below, excluding tritium and dissolved or entrained noble gases.

- a. ≤ 18 Curies: 1BR-TK-6A (Unit 1 Primary Water Storage Tank)
- b. ≤ 18 Curies: 1BR-TK-6B (Unit 1 Primary Water Storage Tank)
- c. ≤ 7 Curies: 1LW-TK-7A (Unit 1 Steam Generator Drain Tank)
- d. ≤ 7 Curies: 1LW-TK-7B (Unit 1 Steam Generator Drain Tank)
- e. ≤ 6 Curies: 1QS-TK-1 (Unit 1 Refueling Water Storage Tank-RWST)
- f. ≤ 62 Curies: 2QSS-TK21 (Unit 2 Refueling Water Storage Tank-RWST)
- g. ≤ 10 Curies: Unit 1 and 2 miscellaneous temporary outside radioactive liquid storage tanks.

APPLICABILITY: At all times.

ACTION:

- a. With the quantity of radioactive material in the tank exceeding the limit, perform calculations to determine compliance to the limits of 10 CFR Part 20, Appendix B, Table 2, Column 2. These calculations shall be performed at the nearest potable water supply, and the nearest surface water supply in the unrestricted area (i.e.; at the entrance to the Midland Water Treatment Facility). IF the limits of 10 CFR Part 20 are determined to be exceeded, THEN immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limits set forth in 10 CFR Part 20, and
- b. Submit a Special Report in accordance with 10 CFR 50.4 (b) (1) within 30 days and include a schedule and a description of activities planned and/or taken to reduce the contents to within the limits set forth in 10 CFR Part 20.
- c. The provisions ODCM Control 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.1.4.1 The quantity of radioactive material contained in each of the above listed tanks (except the Unit 1 and 2 RWST's) shall be determined to be within the above limit by analyzing a representative sample of the tank's contents at least once per 7 days when radioactive materials are being added to the tank.

4.11.1.4.2 SINCE additions of radioactive material to the Unit 1 and 2 RWST's are normally made at the end of a refueling outage (i.e.; drain down of the reactor cavity back to the RWST), THEN compliance to this limit shall be performed as follows:

The quantity of radioactive material contained in the Unit 1 and 2 RWST's shall be determined to be within the above limit by analyzing a representative sample of the tank's contents within 7 days after transfer of reactor cavity water to the respective Unit's RWST.

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ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

CONTROLS: GASEOUS EFFLUENT DOSE RATE

3.11.2.1 In accordance with T.S.5.5.2.c and T.S. 5.5.2.g, the dose rate in the unrestricted areas (see 1/2-ODC-2.02 Figure 5-1) due to radioactive materials released in gaseous effluents, which is considered to include the onsite ISFSI, from the site shall be limited to the following values:

- a. The dose rate limit for noble gases shall be ≤ 500 mrem/yr to the total body and ≤ 3000 mrem/yr to the skin*, and
- b. The dose rate limit, inhalation pathway only, for I-131, tritium and all radionuclides in particulate form (excluding C-14) with half-lives greater than eight days shall be ≤ 1500 mrem/yr to any organ.

Applicability: At all times.

Action:

- a. With the dose rate(s) exceeding the above limits, immediately decrease the release rate to comply with the above limits(s), and
- b. Submit a Special Report to the Commission within 30 days pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1).
- c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.1.1 The dose rate due to noble gaseous effluents, which is considered to include the onsite ISFSI, shall be determined to be within the above limits in accordance with 1/2-ODC-2.02.

4.11.2.1.2 The dose rate, inhalation pathway only, for I-131, tritium and all radionuclides in particulate form (excluding C-14) with half-lives greater than eight days in gaseous effluents, which is considered to include the onsite ISFSI, shall be determined to be within the above limits in accordance with the methods and procedures of the ODCM by obtaining representative samples and performing analyses in accordance with the sampling and analysis program specified in ODCM Control 3.11.2.1, Table 4.11-2.

*During containment purge the dose rate may be averaged over 960 minutes.

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ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

TABLE 4.11-2

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

GASEOUS RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) (uCi/mL) ^(a)
A. Waste Gas Storage Tank	P Each Tank Grab Sample	P Each Tank	Principal Gamma Emitters ^(g)	1E-4
	Each Tank* Grab Sample	Each Tank*	H-3*	1E-6
B. Containment Purge	P Each Purge ^(b) Grab Sample	P Each Purge ^(b)	Principal Gamma Emitters ^(g)	1E-4
			H-3	1E-6
C. Ventilation Systems ^(h) VV-1 (U1 PAB/Ventilation Vent) CV-1 (U1 Rx Cont/SLCRS Vent) PV-1/2 (U1/2 GW/Process Vent) VV-2 (U2 SLCRS Unfiltered Path) CV-2 (U2 SLCRS Filtered Path) DV-2 (U2 Decon Bldg Vent) WV-2 (U2 Waste Gas Vault Vent)	M ^{(b)(c)(e)} Grab Sample	M ^(b)	Principal Gamma Emitters ^(g)	1E-4
			H-3	1E-6

* The H-3 concentration shall be estimated prior to release and followed up with an H-3 grab sample from the Ventilation System during release.

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ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

TABLE 4.11-2 (continued)

RADIOACTIVE GASEOUS WASTE SAMPLING AND ANALYSIS PROGRAM

GASEOUS RELEASE TYPE	SAMPLING FREQUENCY	MINIMUM ANALYSIS FREQUENCY	TYPE OF ACTIVITY ANALYSIS	LOWER LIMIT OF DETECTION (LLD) (uCi/mL) ^(a)
D. All Ventilation Systems Listed Above (in C.) Which Produce Continuous Release	Continuous ^(f)	W ^(d) Charcoal Sample	I-131	1E-12
			I-133	1E-10
	Continuous ^(f)	W ^(d) Particulate Sample	Principal Gamma Emitters ^(g) (I-131, Others)	1E-11
	Continuous ^(f)	M Composite Particulate Sample	Gross Alpha	1E-11
	Continuous ^(f)	Q Composite Particulate Sample	Sr-89, Sr-90	1E-11
	Continuous ^(f)	Noble Gas Monitor	Noble Gases Gross Beta and Gamma	1E-6

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ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

TABLE 4.11-2 (continued)

TABLE NOTATION

- (a) The Lower Limit of Detection (LLD) is defined in Table Notation (a) of ODCM Control 3.11.1.1, Table 4.11-1 for ODCM Surveillance Requirement 4.11.1.1.

- (b) Samples (grab particulate, iodine & noble gas) and analysis shall also be performed following SHUTDOWN, STARTUP, or a THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1 hour period. This requirement does not apply if (1) analysis shows that the Dose Equivalent I-131 concentration in the primary coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

Clarification: All samples shall be obtained within 24 hours of reaching the intended steady state power level, and analyzed within 48 hours of reaching the intended steady state power level.

Applicability: Unit 1 Ventilation Systems (VV-1, CV-1 and/or PV-1/2), or Unit 2 Ventilation Systems (VV-2, CV-2 and/or PV-1/2), as appropriate. Specifically, sample the ventilation release path(s) that show a factor of 3 increase on the noble gas effluent monitor. (3.1.16) (3.1.18)

- (c) Tritium grab samples shall be taken at least once per 24 hours (from the appropriate ventilation release path of the refueling canal area) when the containment refueling canal is flooded. Sampling may be terminated after completion of vessel defueling. Sampling shall resume upon commencement of vessel refueling.

Applicability - (MODE 6): Unit 1 Ventilation System (VV-1 or CV-1), or Unit 2 Ventilation System (VV-2 or CV-2), that is aligned to the Reactor Containment Building atmosphere. In lieu of sampling the ventilation release path, samples may be obtained from the Reactor Containment Building atmosphere. (3.1.11) (3.1.19)

- (d) **Part 1:** Samples (continuous particulate & iodine) shall be changed at least once per 7 days and analyses shall be completed within 48 hours after changing, or after removal from sampler.

Applicability for Part 1: Unit 1 and Unit 2 Ventilation Systems (VV-1, CV-1, PV-1/2, VV-2, CV-2, DV-2 & WV-2).

Part 2: Samples (continuous particulate & iodine) shall also be changed at least once per 24 hours for at least 7 days following each SHUTDOWN, STARTUP, or THERMAL POWER change exceeding 15% of RATED THERMAL POWER within a 1 hour period and analyses shall be completed within 48 hours of changing. When samples collected for 24 hours are analyzed, the corresponding LLDs may be increased by a factor of 10. This requirement does not apply if: (1) analysis shows that the DOSE EQUIVALENT I-131 concentration in the reactor coolant has not increased more than a factor of 3; and (2) the noble gas monitor shows that effluent activity has not increased more than a factor of 3.

Clarification: All samples shall be changed within 24 hours of reaching the intended steady state power level, and analyzed within 48 hours of reaching the intended steady state power level.

Applicability for Part 2: Unit 1 Ventilation Systems (VV-1, CV-1 and/or PV-1/2), or Unit 2 Ventilation Systems (VV-2, CV-2 and/or PV-1/2), as appropriate. Specifically, change out the continuous particulate, iodine samples for the ventilation release path(s) that show a factor of 3 increase on the noble gas effluent monitor. (3.1.16) (3.1.18)

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ODCM CONTROLS: GASEOUS EFFLUENT DOSE RATE

- (e) Tritium grab samples shall be taken at least once per 7 days (from the appropriate ventilation release path of the spent fuel pool area) whenever spent fuel is in the spent fuel pool.

Applicability: Unit 1 Ventilation System (CV-1), or Unit 2 Ventilation System (CV-2) that is aligned to the Fuel Handling Building atmosphere. In lieu of sampling the ventilation release path, samples may be obtained from the Fuel Handling Building atmosphere. (3.1.11) (3.1.19)

- (f) The average ratio of the sample flow rate to the sampled stream flow rate shall be known for the time period covered by each dose or dose rate calculation made in accordance with ODCM CONTROLS 3.11.2.1, 3.11.2.2, and 3.11.2.3.

Clarification: The average ratio of the sample flow rate to the sampled stream flow rate can be determined, but it must not be used in dose and dose rate calculation. Specifically, use of this ratio would provide non-conservative dose calculations, and would compromise licensee response to NRC Unresolved Item 50-334/83-30-05. For information, a comprehensive three-year Radiation Monitor Particle Study was performed in response to the unresolved item's concern that the effluent monitors were not collecting representative samples per ANSI N13.1. The results of that study concluded that a correction factor (minimum CF of 2) must be applied to particulate sample volume calculations and subsequent dose and dose rate calculations. Specifically, the minimum CF of 2 must be utilized in-lieu of actual ratios of sample flow rate to the sampled stream flow rate. In summary, the minimum CF of 2 provides adequate compensation for any negative bias in particulate sample collection. (3.2.13)

Applicability: Unit 1 Ventilation Systems (VV-1, CV-1 & PV-1/2), and Unit 2 Ventilation Systems (VV-2 & CV-2).

- (g) The principal gamma emitters for which the LLD 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 peaks which are measurable and identifiable, together with the above nuclides, shall also be identified and reported. Nuclides which are below the LLD for the analyses should not be reported as being present at the LLD level for that nuclide. When unusual circumstances result in LLD's higher than required, the reasons shall be documented in the Annual Radioactive Effluent Release Report.

- (h) Only when this release path is in use.

Applicability: Unit 1 and Unit 2 Ventilation Systems (VV-1, CV-1, PV-1/2, VV-2, CV-2, DV-2 & WV-2).

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ODCM CONTROLS: DOSE- NOBLE GASES

CONTROLS: DOSE-NOBLE GASES

- 3.11.2.2 In accordance with T.S. 5.5.2.e and T.S. 5.5.2.h., the air dose from the reactor unit in unrestricted areas (see 1/2-ODC-2.02 Figure 5-1), due to noble gases released in gaseous effluents, which is considered to include the onsite ISFSI, shall be limited to the following:
- a. During any calendar quarter, to ≤ 5 mrad for gamma radiation and ≤ 10 mrad for beta radiation.
 - b. During any calendar year, to ≤ 10 mrad for gamma radiation and ≤ 20 mrad for beta radiation.

Applicability: At all times.

Action:

- a. With the calculated air dose from radioactive noble gases in gaseous effluents, which is considered to include the onsite ISFSI, exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report which identifies the cause(s) for exceeding the limit(s) and defines the corrective actions taken to reduce the releases and the proposed corrective actions to be taken to assure the subsequent releases will be within the above limits.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.11.2.2.1 Dose Calculations. Cumulative dose contributions shall be determined in accordance with 1/2-ODC-2.02 at least once every 31 days.

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ODCM CONTROLS: DOSE - RADIOIODINES AND PARTICULATES

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

3.11.2.3 In accordance with T.S. 5.5.2.e and T.S. 5.5.2.i, the dose to MEMBER(S) OF THE PUBLIC from radioiodines and radioactive materials in particulate form (excluding C-14), and radionuclides (other than noble gases) with half-lives greater than eight days in gaseous effluents releases from the reactor unit (see 1/2-ODC-2.02 Figure 5-1), which is considered to include the onsite ISFSI, shall be limited to the following:

- a. During any calendar quarter to ≤ 7.5 mrem to any organ, and
- b. During any calendar year to ≤ 15 mrem to any organ.

Applicability: At all times.

Action:

- a. With the calculated dose from the release of radioiodines, radioactive materials in particulate form, (excluding C-14), and radionuclides (other than noble gases) with half-lives greater than eight days, in gaseous effluents, which is considered to include the onsite ISFSI, exceeding any of the above limits, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report, which identifies the cause(s) for exceeding the limit and defines the corrective actions taken to reduce the releases and the proposed corrective actions to be taken to assure the subsequent releases will be within the above limits.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.3.1 Dose Calculations. Cumulative dose contributions shall be determined in accordance with 1/2-ODC-2.02 at least once every 31 days.

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ODCM CONTROLS: GASEOUS RADWASTE TREATMENT SYSTEM

CONTROLS: GASEOUS RADWASTE TREATMENT SYSTEM

3.11.2.4 In accordance with T.S. 5.5.2.f, Item 6, the Gaseous Radwaste Treatment System and the Ventilation Exhaust Treatment System shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected gaseous effluent air doses due to gaseous effluent releases from the reactor unit (see 1/2-ODC-2.02 Figure 5-1), when averaged over 31 days, would exceed 0.2 mrad for gamma radiation and 0.4 mrad for beta radiation. The appropriate portions of the Ventilation Exhaust Treatment System shall be used to reduce radioactive materials in gaseous waste prior to their discharge when the projected doses due to gaseous effluent releases from the reactor unit (see 1/2-ODC-2.02 Figure 5-1) when averaged over 31 days would exceed 0.3 mrem to any organ.

Applicability: At all times.

Action:

- a. With gaseous waste being discharged without treatment and in excess of the above limits, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), 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 operational status, and
 3. Summary description of action(s) taken to prevent a recurrence.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.4.1 Doses due to gaseous releases from the site shall be projected at least once per 31 days, in accordance with 1/2-ODC-2.02.

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ODCM CONTROLS: GAS STORAGE TANKS

CONTROLS: GAS STORAGE TANKS

3.11.2.5 In accordance with T.S. 5.5.8, the quantity of radioactivity contained in the following gas storage tanks(s) shall be limited to the noble gas values listed below (considered as Xe-133).

a. ≤52,000 Curies: Each BV-1 Waste Gas Decay Tank (1GW-TK-1A, or 1GW-TK-1B, or 1GW-TK-1C)

b. ≤19,000 Curies: Any connected group of BV-2 Gaseous Waste Storage Tanks (2GWS-TK25A thru 2GWS-TK25G)

APPLICABILITY: At all times.

ACTION:

a. With the quantity of radioactive material in any gas storage tank exceeding the above limit, immediately suspend all additions of radioactive material to the tank and within 48 hours reduce the tank contents to within the limit, and

b. Submit a Special Report in accordance with 10 CFR 50.4 (b)(1) within 30 days and include a schedule and a description of activities planned and/or taken to reduce the contents to within the specified limits.

c. The provisions of ODCM Control 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.11.2.5.1 For BV-1 Waste Gas Decay Tanks: The quantity of radioactive material contained in each BV-1 Waste Gas Decay Tank shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tank. Performance of this surveillance is required when the gross concentration of the primary coolant is greater than 100 uCi/mL.

For BV-2 Gaseous Waste Storage Tanks: The quantity of radioactive material contained in any connected group of BV-2 Gaseous Waste Storage Tanks shall be determined to be within the above limit at least once per 24 hours when radioactive materials are being added to the tanks.

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ODCM CONTROLS: TOTAL DOSE

CONTROLS: TOTAL DOSE

3.11.4.1 In accordance with T.S. 5.5.2.j, 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, which is considered to include the onsite ISFSI, shall be limited to ≤ 25 mrems to the whole body or any organ, except the thyroid, which shall be limited to ≤ 75 mrems.

Applicability: At all times.

Action:

- a. With the calculated doses from the release of radioactive materials in liquid or gaseous effluents, which is considered to include the onsite ISFSI, exceeding twice the limits of ODCM CONTROL 3.11.1.2a, 3.11.1.2b, 3.11.2.2a, 3.11.2.2b, 3.11.2.3a, or 3.11.2.3b, calculations shall be made including direct radiation contributions from the units (including outside storage tanks, the onsite ISFSI, etc.) to determine whether the above limits of ODCM CONTROL 3.11.4.1 have been exceeded. If such is the case, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report that defines the corrective action to be taken to reduce subsequent releases to prevent recurrence of exceeding the above limits and includes the schedule for achieving conformance with the above limits. This Special Report, as defined in 10 CFR 20.405(c), shall include an analysis that estimates the radiation exposure (dose) to a MEMBER OF THE PUBLIC from uranium fuel cycle sources and the onsite ISFSI, 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.
- b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.11.4.1.1 Cumulative dose contributions from liquid and gaseous effluents, which is considered to include the onsite ISFSI, shall be determined in accordance with ODCM SURVEILLANCE REQUIREMENTS 4.11.1.2.1, 4.11.2.2.1, and 4.11.2.3.1.
- 4.11.4.1.2 Cumulative dose contributions from direct radiation from the units (including outside storage tanks, the onsite ISFSI, etc.) shall be determined in accordance with 1/2-ODC-2.04. This requirement is applicable only under conditions set forth in Action a. of ODCM CONTROL 3.11.4.1.

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

A program shall be provided 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 the 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 the 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 the environmental sample matrices are performed as part of the quality assurance program for environmental monitoring.

3.12.1 The radiological environmental monitoring program shall be conducted as specified in ODCM Control 3.12.1, Table 3.12-1.

Applicability: At all times.

Action:

- a. With the radiological environmental monitoring program not being conducted as specified in ODCM Control 3.12.1, Table 3.12-1, prepare and submit to the Commission, in the Annual Radiological Environmental Report, a description of the reasons for not conducting the program as required and the plans for preventing a recurrence. Deviations are permitted from the required sampling schedule if specimens are unobtainable due to hazardous conditions, seasonal unavailability, malfunction of automatic sampling equipment and other legitimate reasons. If specimens are unobtainable due to sampling equipment malfunction, every effort shall be made to complete corrective action prior to the end of the next sampling period.
- b. With the level of radioactivity in an environmental sampling medium at one or more of the locations specified in ODCM Control 3.12.1, Table 3.12.1 exceeding the limits of ODCM Control 3.12.1, Table 3.12-2 when averaged over any calendar quarter, prepare and submit to the Commission within 30 days from the end of affected calendar quarter a Special Report pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1) which includes an evaluation of any release conditions, environmental factors or other aspects which caused the limits of ODCM Control 3.12.1, Table 3.12-2 to be exceeded. This report is not required if the measured level of radioactive was not the result of plant effluents; however, in such an event, the condition shall be reported and described in the Annual Radiological Environmental Report.

When more than one of the radionuclides in ODCM Control 3.12.1, Table 3.12-2 are detected in the sampling medium, this report shall be submitted if:

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

Concentration (1) Concentration (2)

Limit Level (1) + Limit Level (2) + ... ≥ 1.0

- c. With milk or fresh leafy vegetable samples unavailable from the required number of locations selected in accordance with ODCM CONTROL 3.12.2 and listed in the ODCM, obtain replacement samples. The locations from which samples were unavailable may then be deleted from those required by ODCM Control 3.12.1, Table 3.12-1 and the ODCM provided the locations from which the replacement samples were obtained are added to the environmental monitoring program as replacement locations, if available.
- d. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

- 4.12.1.1 The radiological environmental monitoring samples shall be collected pursuant to ODCM Control 3.12.1, Table 3.12-1 from the locations given in the ODCM and shall be analyzed pursuant to be requirements of ODCM Control 3.12.1, Tables 3.12-1 and 4.12-1.

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

TABLE 3.12-1
RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF SAMPLES AND LOCATIONS	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS ^(a)
1. AIRBORNE a. Radioiodine and Particulates	5 locations 1. One sample from a control location 10- 20 miles distant and in the least prevalent wind direction 2. One sample from vicinity of community having the highest calculated annual average ground level D/Q.	Continuous operation of sampler with sample collection at least weekly.	Each radioiodine canister. Analyze for I-131; Particulate sampler. Analyze for gross beta weekly ^(b) ; Perform gamma isotopic analysis on composite (by location) sample at least quarterly.
2. DIRECT RADIATION	40 locations ≥ 2 TLDs or a pressurized ion chamber at each location.	Continuous measurement with collection at least quarterly.	Gamma dose, quarterly.

^(a) Analysis frequency same as sampling frequency unless otherwise specified.

^(b) Particulate samples are not counted for ≥ 24 hours after filter change. Perform gamma isotopic analysis on each sample when gross beta is >10 times the yearly mean of control samples.

****Sample locations are given on figures and tables in 1/2-ODC-2.03.**

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

TABLE 3.12-1 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF SAMPLES AND LOCATIONS**	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS ^(a)
3. WATERBORNE a. Surface	2 locations 1. One sample upstream. 2. One sample downstream.	Composite* sample collected over a period not to exceed 1 month.	Gamma isotopic analysis of composite sample by location monthly; Tritium analysis of composite sample at least quarterly.
b. Drinking	2 locations	Composite* sample collected over a period not to exceed 2 weeks.	I-131 analysis of each composite sample; Gamma isotopic analysis of composite sample (by location) monthly; Tritium analysis of composite sample quarterly.
c. Groundwater	N/A - No wells in lower elevations between plant and river		
d. Sediment From Shoreline	1 location	Semi-annually.	Gamma isotopic analysis semi-annually.

^(a) Analysis frequency same as sampling frequency unless otherwise specified.

*Composite samples shall be collected by collecting an aliquot at intervals not exceeding two hours. For the upstream surface water location, a weekly grab sample, composited each month based on river flow at time of sampling, is also acceptable.

**Sample locations are given on figures and tables in 1/2-ODC-2.03.

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TABLE 3.12-1 (continued)

RADIOLOGICAL ENVIRONMENTAL MONITORING PROGRAM

EXPOSURE PATHWAY AND/OR SAMPLE	NUMBER OF SAMPLES AND LOCATIONS**	SAMPLING AND COLLECTION FREQUENCY	TYPE AND FREQUENCY OF ANALYSIS ^(a)
4. INGESTION a. Milk	4 locations ^{(b) (c)} 1. Three samples selected on basis of highest potential thyroid dose using milch census data. 2. One local large dairy.	At least bi-weekly when animals are on pasture; at least monthly at other times.	Gamma isotopic and I-131 analysis of each sample.
b. Fish	2 locations	Semi-annual. One sample of available species.	Gamma isotopic analysis on edible portions.
c. Food Products (Leafy Vegetables)	4 locations ^(c) 1. Three locations within 5 miles. 2. One control location. 3. Two locations based on highest predicted annual avg. ground D/Q when milk locations are unavailable. ^(c)	Annually at time of harvest. ^(c)	Gamma isotopic analysis and I-131 analysis on edible portion.

^(a) Analysis frequency same as sampling frequency unless otherwise specified.

^(b) Other dairies may be included as control station or for historical continuity. These would not be modified on basis of milch animal census.

^(c) When ODCM milk sample requirements are met, one type of broad leaf vegetation is to be sampled from the three (3) indicator locations and one (1) control location. When there are not enough milk sample locations available to meet the ODCM requirements, three (3) different types of broad leaf vegetation are to be sampled at each of two (2) indicator locations based on the highest predicted annual average ground D/Q (as determined from the previous year's Land Use Census), in addition to those samples described above. Three (3) different types of broad leaf vegetation shall also be sampled at one (1) control location when in this condition. The primary sources of broad leaf vegetation are cabbage or lettuce. However, other acceptable substitutes are vegetables having leaves with large surface area, to be combined with the edible portion of the plant for analysis.

**Sample locations are given on figures and tables in 1/2-ODC-2.03.

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

TABLE 3.12-2

REPORTING LEVELS FOR RADIOACTIVITY CONCENTRATIONS

IN ENVIRONMENTAL SAMPLES

ANALYSIS	WATER (pCi/L)	REPORTING LEVELS			
		AIRBORNE PARTICULATE OR GASES (pCi/m ³)	FISH (pCi/kg, WET)	MILK (pCi/L)	BROAD LEAF VEGETABLES (pCi/kg, WET)
H-3	20,000 ^(a)				
Mn-54	1,000		30,000		
Fe-59	400		10,000		
Co-58	1,000		30,000		
Co-60	300		10,000		
Zn-65	300		20,000		
Zr/Nb-95	400				
I-131	2 ^(b)	0.9		3	100
Cs-134	30	10	1,000	60	1,000
Cs-137	50	20	2,000	70	2,000
Ba/La-140	200			300	

(a) For drinking water samples. This is a 40 CFR Part 141 value. If no drinking water pathway exists, a value of 30,000 pCi/L may be used.

(b) If no drinking water pathway exists, a value of 20 pCi/L may be used.

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TABLE 4.12-1

MAXIMUM VALUES FOR THE LOWER LIMITS OF DETECTION (LLD)^{(a)(e)}

ANALYSIS	WATER (pCi/L)	AIRBORNE PARTICULATE OR GAS (pCi/m³)	FISH (pCi/kg, WET)	MILK (pCi/L)	FOOD PRODUCTS (pCi/kg, WET)	SEDIMENT (pCi/kg, DRY)
Gross Beta	4	0.01				
H-3	2,000 ^(d)					
Mn-54	15		130			
Fe-59	30		260			
Co-58,60	15		130			
Zn-65	30		260			
Zr-95	30 ^(e)					
Nb-95	15 ^(e)					
I-131	1 ^(b)	0.07		1	60	
Cs-134	15	0.05	130	15	60	150
Cs-137	18	0.06	150	18	80	180
Ba-140	60 ^(e)			60		
La-140	15 ^(e)			15		

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TABLE 4.12-1 (continued)

TABLE NOTATION

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

For a particular measurement system (which may include radiochemical separation):

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

where:

LLD is the lower limit of detection as defined above (as pCi per unit mass or volume);

S_b is the standard deviation of the background counting rate or of the counting rate of a blank sample as appropriate (as counts per minute);

E is the counting efficiency (as counts per transformation);

V is the sample size (in units of mass or volume);

2.22 is the number of transformations per minute per picocurie;

Y is the fractional radiochemical yield (when applicable);

λ is the radioactive decay constant for the particular radionuclide;

ΔT is the elapsed time between sample collection (or end of the sample collection period) and time of counting (for environmental samples, not plant effluent samples).

The value of S_b 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. In calculating the LLD for a radionuclide determined by gamma-ray spectrometry, the background shall include the typical contributions of other radionuclides normally present in the samples (e.g., potassium-40 in milk samples). Typical values of E, V, Y and ΔT should be used in the calculations.

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ODCM CONTROLS: REMP-PROGRAM REQUIREMENTS

TABLE 4.12-1 (continued)

TABLE NOTATION

The LLD is defined as an a priori (before the fact) limit representing the capability of a measurement system and not as a posteriori (after the fact) limit for a particular measurement. Analyses shall be performed in such a manner that the stated LLD's will be achieved under routine conditions. Occasionally, background fluctuations, unavoidable small sample sizes, the presence of interfering nuclides, or other uncontrollable circumstances may render these LLD's unachievable. In such cases, the contributing factors shall be identified and described in the Annual Radiological Environmental Report.

- (b) If no drinking water pathway exists, a value of 15 pCi/L may be used.
- (c) If parent and daughter are totaled, the most restrictive LLD should be applied.
- (d) If no drinking water pathway exists, a value of 3000 pCi/L may be used.
- (e) This list does not mean that only these nuclides are to be detected and reported. Other peaks which are measurable and identifiable, together with the above nuclides, shall be identified in the Annual Radiological Environmental Report.

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ODCM CONTROLS: REMP - LAND USE CENSUS

CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING - LAND USE CENSUS

3.12.2 A land use census shall be conducted and shall identify the location of the nearest milk animal, the nearest residence, and the nearest garden of greater than 500 square feet producing broad leaf vegetation in each of the 16 meteorological sectors within a distance of five miles. For elevated releases as defined in Regulatory Guide 1.111, (Rev. 1), July, 1977, the land use census shall also identify the locations of all milk animals and all gardens of greater than 500 square feet producing fresh leafy vegetables in each of the 16 meteorological sectors within a distance of three miles.

Applicability: At all times.

Action:

- a. With a land use census identifying a location(s) which yields a calculated dose or dose commitment greater than the values currently being calculated in ODCM SURVEILLANCE REQUIREMENT 4.11.2.3.1, prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report, which identifies the new location(s).
- b. With a land use census identifying a milk animal location(s) which yields a calculated dose or dose commitment (via the same exposure pathway) 20% greater than at a location from which samples are currently being obtained in accordance with ODCM CONTROL 3.12.1 prepare and submit to the Commission within 30 days, pursuant to 10 CFR 20.2203(a)(2)(v) and 10 CFR 50.4(b)(1), a Special Report, which identifies the new location. The new location shall be added to the radiological environmental monitoring program within 30 days, if possible. The milk sampling program shall include samples from the three active milk animal locations, having the highest calculated dose or dose commitment. Any replaced location may be deleted from this monitoring program after October 31 of the year in which this land use census was conducted.
- c. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.2.1 The land use census shall be conducted at least once per 12 months between the dates of June 1 and October 1 using that information which will provide the best results, such as by a door-to-door survey*, aerial survey, or by consulting local agriculture authorities.

* Confirmation by telephone is equivalent to door-to-door.

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ODCM CONTROLS: REMP - INTERLABORATORY COMPARISON PROGRAM

CONTROLS: RADIOLOGICAL ENVIRONMENTAL MONITORING - INTERLABORATORY COMPARISON PROGRAM

3.12.3 Analyses shall be performed on radioactive materials supplied as part of an Interlaboratory Comparison Program.

Applicability:

At all times.

Action:

a. With analyses not being performed as required above, report the corrective actions taken to prevent a recurrence to the Commission in the Annual Radiological Environmental Report.

b. The provisions of ODCM CONTROL 3.0.3 are not applicable.

SURVEILLANCE REQUIREMENTS

4.12.3.1 The results of analyses performed as part of the above required Interlaboratory Comparison Program shall be included in the Annual Radiological Environmental Report.

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ODCM CONTROLS: ANNUAL REMP REPORT

CONTROLS: ANNUAL REMP REPORT

ANNUAL RADIOLOGICAL ENVIRONMENTAL OPERATING REPORT ⁽³⁾

6.9.2 In accordance with T.S. 5.6.1, the Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 15 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 in 10 CFR Part 50 Appendix I Sections IV.B.2, IV.B.3, and IV.C.

The annual radiological environmental reports shall include:

- Summaries, interpretations, and statistical evaluation of the results of the radiological environmental surveillance activities for the report period, including a comparison with pre-operational studies, operational controls (as appropriate), and previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment.
- The results of the land use censuses required by ODCM CONTROL 3.12.2.
- If harmful effects or evidence of irreversible damage are detected by the monitoring, the report shall provide an analysis of the problem and a planned course of action to alleviate the problem.
- Summarized and tabulated results in the format of ODCM Control 6.9.2, Table 6.9-1 of all radiological environmental samples taken during the report period. 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 possible in a supplementary report.
- A summary description of the radiological environmental monitoring program.
- A map of all sampling locations keyed to a table giving distances and directions from one reactor.
- The results of licensee participation in the Interlaboratory Comparison Program required by ODCM CONTROL 3.12.3.

⁽³⁾ A single submittal may be made for a multiple unit site. The submittal should combine those sections that are common to all units at the station.

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ODCM CONTROLS: ANNUAL REMP REPORT

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TABLE E:6.9-1

ENVIRONMENTAL RADIOLOGICAL MONITORING PROGRAM SUMMARY

Name Of Facility _____ Docket No. _____

Location Of Facility _____ Reporting Period _____
(County, State)

MEDIUM OF PATHWAY SAMPLED (UNIT OF MEASUREMENT)	TYPE AND TOTAL NUMBER OF ANALYSES PERFORMED	LOWER LIMITS OF DETECTION ^a (LLD)	ALL INDICATOR LOCATIONS MEAN(F) ^b RANGE ^b	LOCATIONS WITH HIGHEST ANNUAL MEAN		CONTROL LOCATIONS MEAN(F) ^b RANGE ^b	NONROUTINE REPORTED MEASUREMENTS
				NAME DISTANCE AND DIRECTION	MEAN(F) ^b RANGE ^b		

^a Nominal Lower limits of Detection (LLD) as defined in Table Notation ^a of Table 4.12-1 of ODCM CONTROL 3.11.1.1.

^b Mean and range based upon detectable measurement only. Fraction of detectable measurement at specified locations is indicated in parenthesis (f).

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ODCM CONTROLS: ANNUAL RETS REPORTS

CONTROLS: RETS REPORT

RADIOACTIVE EFFLUENT RELEASE REPORT ⁽⁴⁾

6.9.3 In accordance with T.S. 5.6.2, the Radioactive Effluent Release Report (RERR) covering the operation of the unit during the previous year shall be submitted prior to May 1 of each year in accordance with 10 CFR 50.36a. 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 consistent with the objectives outlined in the ODCM and Process Control Program (PCP) and in conformance with 10 CFR 50.36a and 10 CFR Part 50, Appendix I Section IV.B.1.

This report is prepared and submitted in accordance with 1/2-ENV-01.05, and at a minimum, shall contain the following:

- A summary of the quantities of radioactive liquid and gaseous effluent and solid waste released from the unit as outlined in Regulatory Guide 1.21, Revision 1, June, 1974, "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," with data summarized on a quarterly basis following the format of Appendix B thereof.
- An assessment of radiation doses from the radioactive liquid and gaseous effluents released, which is considered to include the onsite ISFSI, from the unit during each calendar quarter as outlined in Regulatory Guide 1.21. In addition, the unrestricted area boundary maximum noble gas gamma air and beta air doses shall be evaluated. The assessment of radiation doses shall be performed in accordance with this manual.
- Any licensee initiated changes to the ODCM made during the 12 month period.
- Any radioactive liquid or gaseous effluent monitoring instrumentation channels not returned to OPERABLE status within 30 days, and why the inoperability was not corrected in a timely manner. This applies to the liquid or gaseous effluent monitoring instrumentation channels required to be OPERABLE per ODCM CONTROLS 3.3.3.9 and 3.3.3.10.
- Any ODCM SURVEILLANCE REQUIREMENT deficiencies. This applies to monitoring, sampling and analysis and dose projection.
- The reasons when unusual circumstances result in LLD's higher than required by ODCM CONTROL 3.11.1.1, Table 4.11-1 and ODCM CONTROL 3.11.2.1, Table 4.11-2.

⁽⁴⁾ A single submittal may be made for a multiple unit site. The submittal should combine those sections that are common to all units at the station; however, for units with separate radwaste systems, the submittal shall specify the releases of radioactive material from each unit.

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ODCM CONTROLS: ANNUAL RETS REPORTS

CONTROLS: ANNUAL RETS REPORT (continued)

- The following information for each type of solid waste shipped offsite during the report period:
 - container volume
 - total curie quantity (determined by measurement or estimate)
 - principal radionuclides (determined by measurement or estimate)
 - type of waste (e.g., spent resin, compacted dry waste, evaporator bottoms)
 - type of container (e.g., LSA, Type A, Type B, Large Quantity)
 - solidification agent (e.g., cement)
 - classification and other requirements specified by 10 CFR Part 61
- An annual summary of hourly 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.
- An assessment of the radiation doses due to the radioactive liquid and gaseous effluents, which is considered to include the onsite ISFSI, released from the unit or station during the previous calendar year.
- An assessment of the radiation doses from radioactive effluents, which is considered to include the onsite ISFSI, to MEMBER(S) OF THE PUBLIC due to their activities inside the site boundary see 1/2-ODC-2.01 Figure 5.1 and 1/2-ODC-2.02 Figure 5-1 during the report period. All assumptions used in making these assessments (e.g., specific activity, exposure time, and location) shall be included in these reports. The assessment of radiation doses shall be performed in accordance with 1/2-ODC-2.04.
- An assessment of radiation doses to the likely most exposed real individual from reactor releases, which is considered to include the onsite ISFSI, for the previous calendar year to show conformance with 40 CFR 190, Environmental Radiation Protection Standards For Nuclear Power Operation. Acceptable methods for calculating the dose contribution from liquid and gaseous effluents are given in Regulatory Guide 1.109, Revision 1. The SKYSHINE Code (available from Radiation Shielding Information Center, (ORNL)) is acceptable for calculating the dose contribution from direct radiation due to N-16.
- If quantities of radioactive materials released during the reporting period are significantly above design objectives, the report must cover this specifically.