

DEFINITIONS

Azimuthal Power Tilt - T_q

Azimuthal Power Tilt shall be the power asymmetry between azimuthally symmetric fuel assemblies.

Unrodded Integrated Radial Peaking Factor - F_R

The Unrodded Integrated Radial Peaking Factor is the ratio of the peak pin power to the average pin power in an unrodded core, excluding azimuthal tilt, T_q . The maximum F_R limit is provided in the Core Operating Limits Report.

Process Control Program (PCP)

The document(s) that contains the current formulas, sampling, analyses, tests, and determinations to be made to ensure that processing and packaging of solid radioactive wastes based on demonstrated processing of actual or simulated wet solid wastes will be accomplished in such a way as to assure compliance with 10 CFR 20, 61, 71, State Regulations, burial ground requirements, and other requirements governing the disposal of solid waste.

Dose Equivalent I-131

That concentration of I-131 ($\mu\text{Ci/gm}$) which alone would produce the same thyroid dose as the quantity and isotopic mixture of I-131, I-132, I-133, I-134 and I-135 actually present. In other words,

2.0 **LIMITING CONDITIONS FOR OPERATION**
 2.10 **Reactor Core (Continued)**
 2.10.4 **Power Distribution Limits (Continued)**

In order for these objectives to be met, the reactor must be operated consistent with the operating limits specified for margin to DNB.

The parameter limits given in (5) and the F_R^T and Core Power Limitations Figure provided in the COLR along with the parameter limits on quadrant tilt and control element assembly position (Power Dependent Insertion Limit Figure provided in the COLR) provide a high degree of assurance that the DNB overpower margin will be maintained during steady state operation.

The actions specified assure that the reactor is brought to a safe condition.

The Reactor Coolant System flow rate of 206,000 gallons per minute is the indicated value. It does not include instrumentation uncertainties.

The calorimetric methodology shall be used to measure the Reactor Coolant System flow rate.

AZIMUTHAL POWER TILT

Azimuthal Power Tilt is measured using symmetric in-core or ex-core detectors by assuming that the ratio of the power at any core location in the presence of a tilt to the untilted power at that location is of the form:

$$P_{\text{tilt}}(r, \theta) / P_{\text{avg}}(r, \theta) - 1 = T_q \cdot g(r) \cdot \cos(\theta - \theta_o)$$

where

- $P_{\text{tilt}}(r, \theta)$ is the tilted power at radius r and azimuthal angle θ
- $P_{\text{avg}}(r, \theta)$ is the average or untilted power at that location
- T_q is the azimuthal tilt magnitude
- $g(r)$ is the radial normalizing factor, normalized to a maximum value of unity
- θ is the azimuthal core location
- θ_o is the azimuthal core location of maximum tilt.

T_q represents the maximum fractional increase in power that can occur anywhere in the core because of tilt. It is the appropriate measured value of tilt to be used when ensuring the validity of the azimuthal tilt assumed by ABB-CE in establishing safety limits.

5.0 ADMINISTRATIVE CONTROLS

5.1 Responsibility

5.1.1 The plant manager shall be responsible for overall facility operation and shall delegate in writing the succession to this responsibility during his absence.

5.2 Organization

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

- a. Lines of authority, responsibility, and communication shall be established and defined for the highest management levels through intermediate levels to and including all operating organization positions. These relationships shall be documented and updated, as appropriate, in the form of organizational charts, functional descriptions of departmental responsibilities and relationships, and job descriptions for key personnel positions, or in equivalent forms of documentation. These requirements shall be documented in the USAR.
- b. The plant manager shall be responsible for overall unit safe operation and shall have control over those onsite activities necessary for safe operation and maintenance of the plant.
- c. The corporate officer with responsibility for overall plant nuclear safety shall take any measures needed to ensure acceptable performance of the staff in operating, maintaining, and providing technical support to the plant to ensure nuclear safety.
- d. The individuals who train the operating staff and those who carry out health physics and quality assurance functions may report to the appropriate onsite manager; however, they shall have sufficient organizational freedom to ensure their independence from operating pressures.

5.2.2 Plant Staff

The plant staff organization shall be as described in Chapter 12 of the USAR and shall function as follows:

- a. The minimum number and type of licensed and unlicensed operating personnel required onsite for each shift shall be as shown in Table 5.2-1.

5.0 ADMINISTRATIVE CONTROLS

5.2 Organization (Continued)

- b. An Operator or Technician qualified in Radiation Protection Procedures shall be onsite when fuel is in the reactor.
- c. All core alterations shall be directly supervised by either a licensed Senior Reactor Operator or Senior Reactor Operator limited to fuel handling who has no other concurrent responsibilities during the operation.
- d. Fire protection program responsibilities are assigned to those positions and/or groups designated by asterisks in USAR 12.1-1 through 12.1-4 according to the procedures specified in Section 5.8 of the Technical Specifications.
- e. Administrative procedures shall be developed and implemented to limit the working hours of plant staff who perform safety-related functions. Administrative procedures shall reflect the personnel whose working hours will be affected. Shift coverage shall be maintained without routine heavy use of overtime.

Deviations from the guidelines shall be authorized in advance by the department manager, plant manager, or their designated alternates, or higher levels of management, in accordance with established procedures and with documentation of the basis for granting the deviation. Routine deviation from the administrative guidelines shall not be authorized.

Controls shall be included in the procedures such that individual overtime shall be reviewed periodically by the department manager, plant manager, or their designated alternates, or higher levels of management, to ensure that excessive hours have not been assigned.

- f. The Manager - Shift Operations, the Shift Managers, and the Control Room Supervisors shall hold a senior reactor operator license. The Licensed Operators shall hold a reactor operator license.

5.3 Facility Staff Qualification

- 5.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions, with the exception of the Manager - Radiation Protection (MRP), the Shift Technical Advisors (STA), the senior reactor operator licensees, and the reactor operator licensees, who shall meet the requirements set forth in Regulatory Guide 1.8, Revision 3, dated May 2000, entitled "Qualification and Training of Personnel for Nuclear Power Plants."

TABLE 5.2-1

MINIMUM SHIFT CREW COMPOSITION⁽ⁱⁱ⁾

| <u>License Category</u> | <u>Core Alteration</u> | <u>Cold Shutdown or Refueling Shutdown</u> | <u>Operating or Hot Shutdown Modes</u> |
|--------------------------------|-------------------------------|---|---|
| Senior Operator License | 2 ⁽ⁱ⁾ | 1 | 2 ⁽ⁱⁱⁱ⁾ |
| Operator License | 2 | 1 | 2 ^(iv) |
| Non-Licensed | (As required) | 1 | 2 |
| Shift Technical Advisor | None | None | 1 |

(i) This includes the individual with Senior Operator License supervising Core Alterations.

(ii) Shift crew composition may be one less than the minimum requirements for a period of time not to exceed 2 hours in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements of Table 5.2-1. This provision does not permit any shift crew position to be unmanned upon shift change due to an oncoming shift crewmember being late or absent.

(iii) At least one of these individuals must be in the control room at all times.

(iv) At least one of these individuals (or the second senior licensed operator, if both senior licensed operators are in the control room) must be present at the controls at all times.

5.0 ADMINISTRATIVE CONTROLS

5.4 Training

- 5.4.1 A retraining and replacement training program for the plant staff shall be maintained under the direction of the Manager - Training and shall meet or exceed the requirements of Section 6 of ANSI/ANS 3.1-1993, as modified by Regulatory Guide 1.8, Revision 3, dated May 2000 and 10 CFR Part 55.

5.5 Review and Audit

5.5.1 Plant Review Committee (PRC)

A committee composed of key management personnel designated as the PRC acts in an advisory capacity on all matters related to nuclear safety to the plant manager and serves in accordance with Quality Assurance Program requirements, USAR Section 12.5, and plant Standing Orders.

5.5.2 Safety Audit and Review Committee (SARC)

The Safety Audit and Review Committee (SARC) is a committee composed of highly qualified and experienced OPPD management personnel and consultants, which functions to provide independent review and audit of activities in accordance with the Quality Assurance Program requirements, USAR Section 12.5, and the SARC Charter. The SARC reports to and advises the corporate officer responsible for overall plant nuclear safety.

5.6 Reportable Event Action

- 5.6.1 The following actions shall be taken in the event of a REPORTABLE EVENT:

- a. The Commission shall be notified pursuant to the requirements of 10 CFR 50.72, if applicable.
- b. Each Reportable Event shall be reviewed by the Plant Review Committee and submitted to the Chairperson of the Safety Audit and Review Committee and the corporate officer responsible for overall plant nuclear safety.
- c. Submit reports of Reportable Events pursuant to the requirements of Specification 5.9.2.

5.0 ADMINISTRATIVE CONTROLS

5.7 Safety Limit Violation

5.7.1 The following actions shall be taken in the event a Safety Limit is violated:

- a. The unit shall be placed in at least HOT SHUTDOWN within 1 hour.
- b. The Safety Limit Violations shall be reported to the corporate officer responsible for overall plant nuclear safety and the Chairperson of the Safety Audit and Review Committee (SARC) within 24 hours.
- c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the Plant Review Committee. This report shall describe (1) applicable circumstances preceding the violation, (2) effects of the violation upon facility components, systems or structures, and (3) corrective action taken to prevent recurrence.
- d. The Safety Limit Violation Report shall be submitted to the Chairperson of the Safety Audit and Review Committee and the corporate officer responsible for overall plant nuclear safety within 14 days of the violation.

5.8 Procedures

5.8.1 Written procedures and administrative policies shall be established, implemented and maintained covering the following activities:

- a. The applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, 1978;
- b. The emergency operating procedures required to implement the requirements of NUREG-0737 and to NUREG-0737, Supplement 1, as stated in Generic Letter 82-33;
- c. Fire Protection Program implementation; and
- d. All programs specified in Specification 5.11 through 5.19.

5.8.2 Temporary changes to procedures of 5.8.1 above may be made provided:

- a. The intent of the original procedure is not altered.
- b. The change is approved by two members of the plant supervisory staff, at least one of whom holds a Senior Reactor Operator's License.

5.0 ADMINISTRATIVE CONTROLS

5.8 Procedures (Continued)

- c. The change is documented, reviewed by a qualified reviewer and approved by either the plant manager or the department head designated by Administrative Controls Standing Orders as the responsible department head for that procedure within 14 days of implementation.

5.8.3 Written procedures shall be implemented which govern the selection of fuel assemblies to be placed in Region 2 of the spent fuel racks (Technical Specification 2.8). These procedures shall require an independent verification of initial enrichment requirements and fuel burnup calculations for a fuel bundle to assure the "acceptance" criteria for placement in Region 2 are met. This independent verification shall be performed by individuals or groups other than those who performed the initial acceptance criteria assessment, but who may be from the same organization.

5.9 Reporting Requirements

In addition to the applicable reporting requirements of Title 10, Code of Federal Regulations, the following identified reports shall be submitted to the appropriate NRC Regional Office unless otherwise noted.

5.9.1 Routine Reports

- a. Startup Report. A summary report of plant startup and power escalation testing shall be submitted following (1) receipt of an operating license, (2) amendment to the license involving a planned increase in power level, (3) installation of fuel that has a different design or has been manufacture by a different fuel supplier, and (4) modifications that may have significantly altered the nuclear, thermal, or hydraulic performance of the plant. The report shall address each of the tests identified in the USAR and shall in general include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison of these values with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall also be described. Any additional specific details required in license conditions based on other commitments shall be included in this report.

Startup reports shall be submitted within (1) 90 days following completion of the startup test program, (2) 90 days following resumption or commencement of commercial power operation, or (3) 9 months following initial criticality, whichever is earliest. If the Startup Report does not cover all three events (i.e., initial criticality, completion of startup test program, and resumption or commencement of commercial power operation), supplementary reports shall be submitted at least every three months until all three events have been completed.

5.0 ADMINISTRATIVE CONTROLS

5.9 Reporting Requirements (Continued)

- b. Annual Occupational Exposure Report. An annual occupational exposure report shall be submitted on or before April 30 of each year. The report shall consist of a tabulation on an annual basis of the number of station, utility and other personnel (including contractors) receiving exposures greater than 100 mrem/yr and their associated man rem exposure according to work and job functions,^{3/} e.g., reactor operations and surveillance, inservice inspection, routine maintenance, special maintenance (describe maintenance), waste processing, and refueling outages. The dose assignment to various duty functions may be estimates based on pocket dosimeter, TLD, or film badge measurements. Small exposures totalling less than 20% of the individual total dose need not be accounted for. In the aggregate, at least 80% of the total whole body dose received from external sources shall be assigned to specific major work functions.
- c. Monthly Operating Report. Routine reports of operating statistics and shutdown experience shall be submitted on a monthly basis to the U.S. Nuclear Regulatory Commission, Document Control Desk, with a copy to the appropriate Regional Office, no later than the fifteenth of each month following the calendar month covered by the report. This monthly report shall also include a statement regarding any challenges or failures to the pressurizer power operated relief valves or safety valves occurring during the subject month.

5.9.2 Reportable Event

A Licensee Event Report (LER) shall be submitted to the U.S. Nuclear Regulatory Commission for any event meeting the requirements of 10 CFR Part 50.73.

5.9.3 Special Reports

Special reports shall be submitted to the appropriate NRC Regional Office within the time period specified for each report. These reports shall be submitted covering the activities identified below pursuant to the requirements of the applicable reference specification where appropriate:

- a. In-service inspection report, reference 3.3.
- b. Tendon surveillance, reference 3.5.
- c. Containment structural tests, reference 3.5.
- d. DELETED
- e. DELETED
- f. DELETED
- g. Materials radiation surveillance specimens reports, reference 3.3.
- h. DELETED
- i. Post-accident monitoring instrumentation, reference 2.21
- j. Electrical systems, reference 2.7(2).

^{3/}This tabulation supplements the requirements of § 20.2206 of 10 CFR Part 20.

5.0 ADMINISTRATIVE CONTROLS

5.9 Reporting Requirements (Continued)

5.9.4 Unique Reporting Requirements

a. Annual Radioactive Effluent Release Report

The Annual Radioactive Effluent Release Report covering the operation of the unit during the previous calendar year of operation shall be submitted before May 1 of each year. The report shall include a summary of the quantities of radioactive liquid and gaseous effluents and solid waste released from the unit. The material provided shall be 1) consistent with the objectives outlined in the ODCM and PCP, and 2) in conformance with 10 CFR 50.36a. and Section IV.B.1 of Appendix I to 10 CFR 50.

b. Annual Radiological Environmental Operating Report

The Annual Radiological Environmental Operating Report covering the operation of the unit during the previous calendar year shall be submitted before May 1 of each year. The report shall include summaries, interpretations, and analysis 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 (1) the ODCM and (2) Section IV.B.2, IV.B.3, and IV.C of Appendix I to 10 CFR 50.

c. Fire Protection Program Deficiency Report

Deficiencies in the Fire Protection Program described in the Updated Safety Analysis Report which meet the reportability criteria of 10 CFR 50.73 shall be reported pursuant to Section 5.9.2 of the Technical Specifications.

5.9.5 Core Operating Limits Report

a. Core Operating Limits shall be established and documented in the Core Operating Limits Report (COLR) before each reload cycle or any remaining part of a reload cycle.

b. The analytical methods used to determine the core operating limits shall be those previously reviewed and approved by the NRC as follows:

1. OPPD-NA-8301-P-A, "Reload Core Analysis Methodology Overview," approved version as specified in the COLR.
2. OPPD-NA-8302-P-A, "Neutronics Design Methods and Verification," approved version as specified in the COLR.

5.0 ADMINISTRATIVE CONTROLS

5.9 Reporting Requirements (Continued)

3. OPPD-NA-8303-P-A, "Transient and Accident Methods and Verification," approved version as specified in the COLR.
4. WCAP-12610-P-A, "VANTAGE + Fuel Assembly Report," April 1995 (Westinghouse Proprietary) as approved in the Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 178 to Facility Operating License No. DPR-40, Omaha Public Power District, Fort Calhoun Station Unit No. 1, Docket No. 50-285, dated October 25, 1996.
5. WCAP-13027-P, "Westinghouse ECCS Evaluation Model for Analysis of CE-NSSS," July 1991 (Westinghouse Proprietary) as approved in the Safety Evaluation by the Office of Nuclear Reactor Regulation dated March 26, 1992, and as applied in OPPD submittal to the NRC (LIC-96-0130) dated September 3, 1996, and as approved in the Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 178 to Facility Operating License No. DPR-40, Omaha Public Power District, Fort Calhoun Station Unit No. 1, Docket No. 50-285, dated October 25, 1996.
6. XN-75-32(P)(A) Supplements 1, 2, 3, & 4, "Computational Procedure for Evaluating Fuel Rod Bowing," approved version as specified in the COLR.
7. XN-NF-82-06(P)(A) and Supplements 2, 4, and 5, "Qualification of Exxon Nuclear Fuel for Extended Burnup," approved version as specified in the COLR.
8. XN-NF-85-92(P)(A), "Exxon Nuclear Uranium Dioxide/Gadolinia Irradiation Examination and Thermal Conductivity Results," approved version as specified in the COLR.
9. ANF-88-133(P)(A) and Supplement 1, "Qualification of Advanced Nuclear Fuels PWR Design Methodology for Rod Burnups of 62 GWd/MTU," approved version as specified in the COLR.
10. EMF-92-116(P)(A), "Generic Mechanical Design Criteria for PWR Fuel Designs," approved version as specified in the COLR.
11. XN-NF-78-44(P)(A), "A Generic Analysis of the Control Rod Ejection Transient for Pressurized Water Reactors," approved version as specified in the COLR.
12. XN-NF-82-21(P)(A), "Application of Exxon Nuclear Company PWR Thermal Margin Methodology to Mixed Core Configurations," approved version as specified in the COLR.

5.0 ADMINISTRATIVE CONTROLS

5.9 Reporting Requirements (Continued)

13. EMF-1961(P)(A), "Statistical Setpoint/Transient Methodology for CE Reactors, Siemens Power Corporation," approved version as specified in the COLR.
 14. XN-NF-621(P)(A), "Exxon Nuclear DNB Correlation for PWR Fuel Designs," approved version as specified in the COLR.
 15. ANF-89-151(P)(A), "ANF-RELAP Methodology for Pressurized Water Reactors: Analysis of Non-LOCA Chapter 15 Events," approved version as specified in the COLR.
 16. EMF-92-153(P)(A) and Supplement 1, "HTP: Departure from Nucleate Boiling Correlation for High Thermal Performance Fuel," approved version as specified in the COLR.
 17. XN-NF-82-49(P)(A), Supplement 1, "Exxon Nuclear Company Evaluation Model Revised EXEM PWR Small Break Model," approved version as specified in the COLR.
 18. EMF-2087(P)(A), "SEM/PWR-98: ECCS Evaluation Model for PWR LBLOCA Applications," approved version as specified in the COLR.
 19. ANF-84-73 Appendix B (P)(A), "Advanced Nuclear Fuels Methodology for Pressurized Water Reactors: Analysis of Chapter 15 Events," Advanced Nuclear Fuels Corporation, approved version as specified in the COLR.
 20. EMF-84-093(P)(A), "Steam Line Break Methodology for PWRs," Siemens Power Corporation, approved version as specified in the COLR.
- c. The core operating limits shall be determined so that all applicable limits of the safety analysis are met. The Core Operating Limits Report, including any mid-cycle revisions or supplements thereto, shall be provided upon issuance, for each reload cycle, to the NRC Document Control Desk with copies to the Region IV Administrator and Senior Resident Inspector.

5.10 Records Retention

5.10.1 Records shall be retained as described in the Quality Assurance Program.

5.11 Radiation Protection Program

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

Order 07/24/80

5-10 Amendment No. ~~59,75,86,93,99,105,~~
~~152,155,176,184,196,~~ 202

5.0 ADMINISTRATIVE CONTROLS

5.11 Radiation Protection Program (Continued)

5.11.1 In lieu of the "control device" required by paragraph 20.1601(a) of 10 CFR Part 20, and as an alternative method allowed under § 20.1601(c), each high radiation area (as defined in § 20.1601) in which the intensity of radiation is 1000 mrem/hr or less shall be barricaded and conspicuously posted as a high radiation area and entrance thereto shall be controlled by required issuance of a Radiation Work Permit.* Any individual or group of individuals permitted to enter such areas shall be provided with or accompanied by one or more of the following:

- a. A radiation monitoring device which continuously indicates the radiation dose rate in the area.
- b. A radiation monitoring device which continuously integrates the radiation dose rate in the area and alarms when a preset integrated dose is received. Entry into such areas with this monitoring device may be made after the dose rate level in the area has been established and personnel have been made knowledgeable of them.
- c. An individual qualified in radiation protection procedures who is equipped with a radiation dose rate monitoring device. This individual shall be responsible for providing positive control over the activities within the area and shall perform periodic radiation surveillance at the frequency specified by the Manager-Radiation Protection (MRP) in the Radiation Work Permit.

5.11.2 The requirements of 5.11.1, above, shall also apply to each high radiation area in which the intensity of radiation is greater than 1000 mrem/hr** but less than 500 rads/hr*** (Restricted High Radiation Area). In addition, locked doors shall be provided to prevent unauthorized entry into such areas and the keys shall be maintained under the administrative control of the Shift Manager on duty and/or the MRP with the following exception:

- a. In lieu of the above, for accessible localized Restricted High Radiation Areas located in large areas such as containment, where no lockable enclosure exists in the immediate vicinity to control access to the Restricted High Radiation Area and no such enclosure can be readily constructed, then the Restricted High Radiation Area shall be:

*Radiation Protection personnel shall be exempt from the RWP issuance requirement during the performance of their assigned radiation protection duties, provided they comply with approved radiation protection procedures for entry into high radiation areas.

**At 30 centimeters (12 inches) from the radiation source or from any surface penetrated by the radiation.

***At 1 meter from the radiation source or from any surface penetrated by the radiation.

5.0 ADMINISTRATIVE CONTROLS

5.11 Radiation Protection Program (Continued)

- i. roped off such that an individual at the rope boundary is exposed to 1000 mrem/hr or less,
- ii conspicuously posted, and
- iii a flashing light shall be activated as a warning device.

5.12 Environmental Qualification

Deleted

5.13 Secondary Water Chemistry

A secondary water chemistry monitoring program to inhibit steam generator tube degradation shall be implemented. This program shall be described in the station chemistry manual and shall include:

1. Identification of a sampling schedule for the critical parameters and control points for these parameters;
2. Identification of the procedures used to measure the values of the critical parameters;
3. Identification of process sampling points;
4. Procedures for the recording and management of data;
5. Procedures defining corrective actions for off control point chemistry conditions; and
6. A procedure identifying (a) the authority responsible for the interpretation of the data, and (b) the sequence and timing of administrative events required to initiate corrective actions.

5.14 Systems Integrity

A program to reduce leakage from systems outside containment that would or could contain highly radioactive fluids during a serious transient or accident to as low as practical levels shall be implemented. This program shall include the following:

1. Provisions establishing preventive maintenance and periodic visual inspection requirements, and
2. Integrated leak test requirements for each system at a frequency not to exceed refueling cycle intervals.

5.0 ADMINISTRATIVE CONTROLS

5.15 Post-Accident Radiological Sampling and Monitoring

The following programs shall be implemented and maintained to ensure the capability to accurately monitor and/or sample and analyze radiological effluents and concentrations in a post-accident condition:

1. A program which will ensure the capability to accurately determine the airborne iodine concentration in vital areas under accident conditions. (Any space which will require occupancy to permit an operator to aid in mitigation of, or recovery from, an accident is designated as vital.)
2. A program which will ensure the capability to obtain and analyze radioactive iodines and particulates in plant gaseous effluents.

These programs shall include the following:

1. Training of personnel.
2. Procedures for monitoring and/or sampling and analysis.
3. Provisions for maintenance of sampling and analysis equipment.

5.16 Radiological Effluents and Environmental Monitoring Programs

The following programs shall be established, implemented, and maintained.

5.16.1 Radioactive Effluent Controls Program

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

- a. Limitations on the operability of radioactive liquid and gaseous radiation monitoring instrumentation including operability tests and setpoint determination in accordance with the methodology in the ODCM.
- b. Limitations on the concentration of radioactive material, other than dissolved or entrained noble gases, released in liquid effluents to unrestricted areas conforming to ten times 10 CFR 20.1001-20.2401, Appendix B, Table 2, Column 2. For dissolved or entrained noble gases, the concentration shall be limited to 2.0 E-04 $\mu\text{Ci/ml}$ total activity.

5.0 ADMINISTRATIVE CONTROLS

5.16 Radiological Effluents and Environmental Monitoring Programs (Continued)

- c. Monitoring, sampling, and analysis of radioactive liquid and gaseous effluents in accordance with 10 CFR 20.1302 and with the methodology and parameters in the ODCM.
- d. Limitations on the annual and quarterly doses or dose commitment to individuals in unrestricted areas from radioactive materials in liquid effluents released to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- e. Determination of cumulative doses from radioactive effluents for the current calendar quarter and current calendar year in accordance with the ODCM on a quarterly basis.
- f. Limitations on the operability and use of the liquid and gaseous effluent treatment systems to ensure that the appropriate portions of these systems are used to reduce releases of radioactivity in plant effluents.
- g. Limitations on the concentration resulting from radioactive material, other than noble gases, released in gaseous effluents to unrestricted areas conforming to ten times 10 CFR 20.1001-20.2401, Appendix B, Table 2, Column 1. For noble gases, the concentration shall be limited to five times 10 CFR 20.1001-20.2401, Appendix B, Table 2, Column 1.
- h. Limitations on the annual and quarterly air doses resulting from noble gases released in gaseous effluents to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- i. Limitations on the annual and quarterly doses to an individual beyond the site boundary from Iodine-131, tritium, and all radionuclides in particulate form with half lives greater than 8 days in gaseous effluents released to unrestricted areas conforming to Appendix I to 10 CFR Part 50.
- j. Limitations on the annual dose or dose commitment to an individual beyond the site boundary due to releases or radioactivity and to radiation from uranium fuel cycle sources conforming to 40 CFR Part 190.

5.16.2 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 Appendix I to 10 CFR Part 50, and (3) include the following:

5.0 ADMINISTRATIVE CONTROLS

5.16 Radiological Effluents and Environmental Monitoring Programs (Continued)

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

5.17 Offsite Dose Calculation Manual (ODCM)

Changes to the ODCM:

- a. Shall be documented and records of reviews performed shall be retained as required by the Quality Assurance Program. This documentation shall contain:
 1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 2. A determination that the change will maintain the level of radioactive effluent control required by 10 CFR 20.1302, 40 CFR Part 190, 10 CFR 50.36a, and Appendix I to 10 CFR Part 50 and not adversely impact the accuracy or reliability of effluent, dose, or setpoint calculations.
- b. Shall become effective after review and acceptance by the Plant Review Committee and the approval of the plant manager.
- c. Temporary changes to the ODCM may be made in accordance with Technical Specification 5.8.2.
- d. Shall be submitted to the Nuclear Regulatory Commission in the form of a complete, legible copy of the entire ODCM as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the ODCM was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed and shall indicate the date (e.g., month/year) the change was implemented.

5.18 Process Control Program (PCP)

Changes to the PCP:

5.0 ADMINISTRATIVE CONTROLS

5.18 Process Control Program (PCP) (Continued)

- a. Shall be documented and records of reviews performed shall be retained as required by the Quality Assurance Program. This documentation shall contain:
 1. Sufficient information to support the change together with the appropriate analyses or evaluations justifying the change(s) and
 2. A determination that the change will maintain the overall conformance of the solidified waste program to existing requirements of federal, state, or other applicable regulations.
- b. Shall become effective after the review and acceptance by the Plant Review Committee and the approval of the plant manager.
- c. Temporary changes to the PCP may be made in accordance with Technical Specification 5.8.2.
- d. Shall be submitted to the Nuclear Regulatory Commission in the form of a complete, legible copy of the entire PCP as a part of or concurrent with the Annual Radioactive Effluent Release Report for the period of the report in which any change to the PCP was made. Each change shall be identified by markings in the margin of the affected pages, clearly indicating the area of the page that was changed and shall indicate the date (e.g., month/year) the change was implemented.

5.19 Containment Leakage Rate Testing Program

A program shall be established to implement the leakage rate testing of the containment as required by 10 CFR 50.54(o) and 10 CFR 50, Appendix J, Option B, as modified by approved exemptions. This program shall be in accordance with the guidelines contained in Regulatory Guide 1.163, "Performance-Based Containment Leak-Test Program, dated September 1995," as modified by the following exceptions:

- (1) If the Personnel Air Lock (PAL) is opened during periods when containment integrity is not required, the PAL door seals shall be tested at the end of such periods and the entire PAL shall be tested within 14 days after RCS temperature $T_{\text{cold}} > 210^{\circ}\text{F}$.
- (2) Type A tests may be deferred for penetrations of the steel pressure retaining boundary where the nominal diameter does not exceed one inch.
- (3) Elapsed time between consecutive Type A tests used to determine performance shall be at least 24 months or refueling interval.

The containment design accident pressure (P_a) is 60 psig.

5.0 ADMINISTRATIVE CONTROLS

5.19 Containment Leakage Rate Testing Program (Continued)

The maximum allowable primary containment leakage rate, L_a , at P_a , shall be 0.1% of containment air weight per day.

Leakage Rate acceptance criteria are:

- a. Containment leakage rate acceptance criterion is $\leq 1.0 L_a$. During unit startup following testing in accordance with this program, the leakage rate acceptance criteria are $\leq 0.60 L_a$ Maximum Pathway Leakage Rate (MXPLR) for Type B and C tests and $\leq 0.75 L_a$ for Type A tests.
- b. Personnel Air Lock testing acceptance criteria are:
 - (1) Overall Personnel Air Lock leakage is $\leq 0.1 L_a$ when tested at $\geq P_a$.
 - (2) For each PAL door, seal leakage rate is $\leq 0.01 L_a$ when pressurized to ≥ 5.0 psig.
- c. Containment Purge Valve (PCV-742A/B/C/D) testing acceptance criterion is:

For each Containment Purge Valve, leakage rate is < 18.000 SCCM when tested at $\geq P_a$.
- d. If at any time when containment integrity is required and the total Type B and C measured leakage rate exceeds $0.60 L_a$ Minimum Pathway Leakage Rate (MNLPR), repairs shall be initiated immediately. If repairs and retesting fail to demonstrate conformance to this acceptance criteria within 48 hours, then containment shall be declared inoperable.

The provisions of Specification 3.0.1 do not apply to the test frequencies specified in the Containment Leakage Rate Testing Program.

The provisions of Specification 3.0.4 are applicable to the Containment Leakage Rate Testing Program.