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CONSUMERS POWER COMPANY

DOCKET NO. 50-155

BIG ROCK POINT PLANT

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 9
License No. DPR-6

1. The Nuclear Regulatory Commission (the Commission) has found that:

A. The application for amendment by Consumers Power Company (the licensee) dated January 15, 1975, complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations set forth in 10 CFR Chapter I;

B. onstruction of the Big Rock Point Plant (the facility) has been substantially completed in conformity with Construction Permit No. CPPR-9 and the application, as amended, the provisions of the Act and the rules and regulations of the Commission;

C. The facility will operate in conformity with the application, as amended, the provisions of the Act, and the rules and regulations of the Commission;

D. There is reasonable assurance: (i) that the activities authorized by this operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the rules and regulations of the Commission;

E. The licensee is technically and financially qualified to engage in the activities authorized by this operating license in accordance with the rules and regulations of the Commission,

F. The licensee has satisfied the applicable provisions of 10 CFR Part 140, "Financial Protection Requirements and Indemnity Agreements," of the Commission's regulations;

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DATE ➤						

G. The issuance of this operating license will not be inimical to the common defense and security or to the health and safety of the public, and

H. The receipt, possession, and use of source, byproduct and special nuclear material as authorized by this license will be in accordance with the Commission's regulations in 10 CFR Parts 30, 40, and 70, including 10 CFR Sections 30.33, 40.32, and 70.23 and 70.31.

2. Facility Operating License No. DPR-6, issued to the Consumers Power Company, is hereby amended in its entirety to read as follows:

A. This license applies to the Big Rock Point Plant, a boiling water reactor and associated equipment (the facility), owned by the Consumers Power Company (the licensee). The facility is located in Charlevoix County, Michigan, and is described in the licensee's application dated January 14, 1960, and the Final Hazards Summary Report, as supplemented and amended by subsequent filings by the licensee.

B. Subject to the conditions and requirements incorporated herein, the Commission hereby licenses Consumers Power Company:

(1) Pursuant to Section 104b of the Act and 10 CFR Part 50, "Licensing of Production and Utilization Facilities," to possess, use, and operate the facility at the designated location in Charlevoix County, Michigan, in accordance with the procedures and limitations set forth in this license;

(2) Pursuant to the Act and 10 CFR Part 70, "Special Nuclear Material," to receive, possess, and use at any one time up to (a) 1200 kilograms of contained uranium 235 as fuel, (b) 10.32 grams of uranium 235 as contained in fission counters, (c) 150 kilograms of plutonium contained in PuO_2-UO_2 fuel rods, and (d) 5 curies of plutonium encapsulated as a plutonium-beryllium neutron source, all in connection with operation of the facility;

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(3) Pursuant to the Act and 10 CFR Part 30, "Rules of General Applicability to the Licensing of Byproduct Material," to receive, possess and use at any one time up to 7000 curies of antimony-beryllium in the form of neutron sources;

(4) Pursuant to the Act and 10 CFR Part 40, "Licensing of Source Material," to receive, possess and use at any one time up to 500 kilograms of depleted uranium dioxide contained in the facility's fuel assemblies;

(5) Pursuant to the Act and 10 CFR Parts 30 and 70, to possess, but not separate, such byproduct and special nuclear materials as may be produced by the operation of the facility.

C. This license shall be deemed to contain and is subject to the conditions specified in the following Commission regulations in 10 CFR Chapter I; Part 20, Section 30.34 of Part 30, Section 40.41 of Part 40, Sections 50.54 and 50.59 of Part 50, and Section 70.32 of Part 70; and is subject to all applicable provisions of the Act and to the rules, regulations, and orders of the Commission now or hereafter in effect; and is subject to the additional conditions specified or incorporated below:

(1) Maximum Power Level

The licensee is authorized to operate the facility at steady state reactor core power levels not in excess of 240 megawatts (thermal).

(2) Technical Specifications

The Technical Specifications contained in Appendix A as issued May 1, 1964, as revised, are hereby incorporated in this license. The licensee shall operate the facility in accordance with the Technical Specifications as revised by issued changes thereto through Change No. 46.

D. This amended license becomes effective 30 days after the date of its issuance and shall expire at midnight, May 31, 2000.

FOR THE NUCLEAR REGULATORY COMMISSION

Richard D. Silver for

Dennis L. Ziemann, Chief
Operating Reactors Branch #2
Division of Reactor Licensing

Attachment:
Change No. 46 to the
Technical Specifications

Date of Issuance:

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SURNAME ➤						
DATE ➤						

ATTACHMENT TO LICENSE AMENDMENT NO. 9

CHANGE NO. 46 TO THE TECHNICAL SPECIFICATIONS

FACILITY OPERATING LICENSE NO. DPR-6

DOCKET NO. 50-155

Instructions for incorporating Change No. 46:

1. Replace existing page iii with attached revised page iii and additional page iv. Changes are identified with sidelines in the margin.

2. Incorporate additional pages 10-1 through 10-27. Change No. 46 is identified for each new page in the lower corner.

3. Delete the following sections entirely: 7.1, 7.1.1 - 7.1.10, 7.2, 7.2.1 - 7.2.3, 7.5, 7.5.1 - 7.5.6 and 7.7.

6.0 ADMINISTRATIVE CONTROLS

(NOTE: This is the new format of the Technical Specifications to be issued entirely in the near future. This section replaces the following sections of the current Technical Specifications: 7.1, 7.1.1-7.1.10, 7.2, 7.2.1-7.2.3, 7.5, 7.5.1-7.5.6, and 7.7 entirely)

6.1 RESPONSIBILITY

6.1.1 The Plant Superintendent shall be responsible for overall plant operation and shall delegate in writing the succession to this responsibility during his absence.

6.2 ORGANIZATION

OFFSITE

6.2.1 The offsite organization for plant management and technical support shall be as shown on Figure 6.2-1.

PLANT STAFF

6.2.2 The plant organization shall be as shown on Figure 6.2-2 and:

a. Each on-duty shift shall be composed of at least the minimum shift crew composition shown in Table 6.2-1.

b. At least one licensed Operator shall be in the control room when fuel is in the reactor.

c. At least two licensed Operators shall be present in the control room during reactor startup (to a power level $\geq$5 percent), scheduled reactor shutdown and during recovery from reactor trips.

d. An individual qualified in radiation protection procedures shall be on site when fuel is in the reactor.

e. All core alterations after the initial fuel loading shall either be performed by a licensed Operator under the supervision of a licensed Senior Operator or a non-licensed Operator directly supervised by a licensed Senior Operator (or a licensed Senior Operator Limited to Fuel Handling) who has no other concurrent responsibilities during this operation.

6.3 PLANT STAFF QUALIFICATIONS

6.3.1 Each member of the plant staff shall meet or exceed the minimum qualifications of ANSI N18.1-1971 for comparable positions.

CONSUMERS POWER COMPANY
OFF-SITE ORGANIZATION

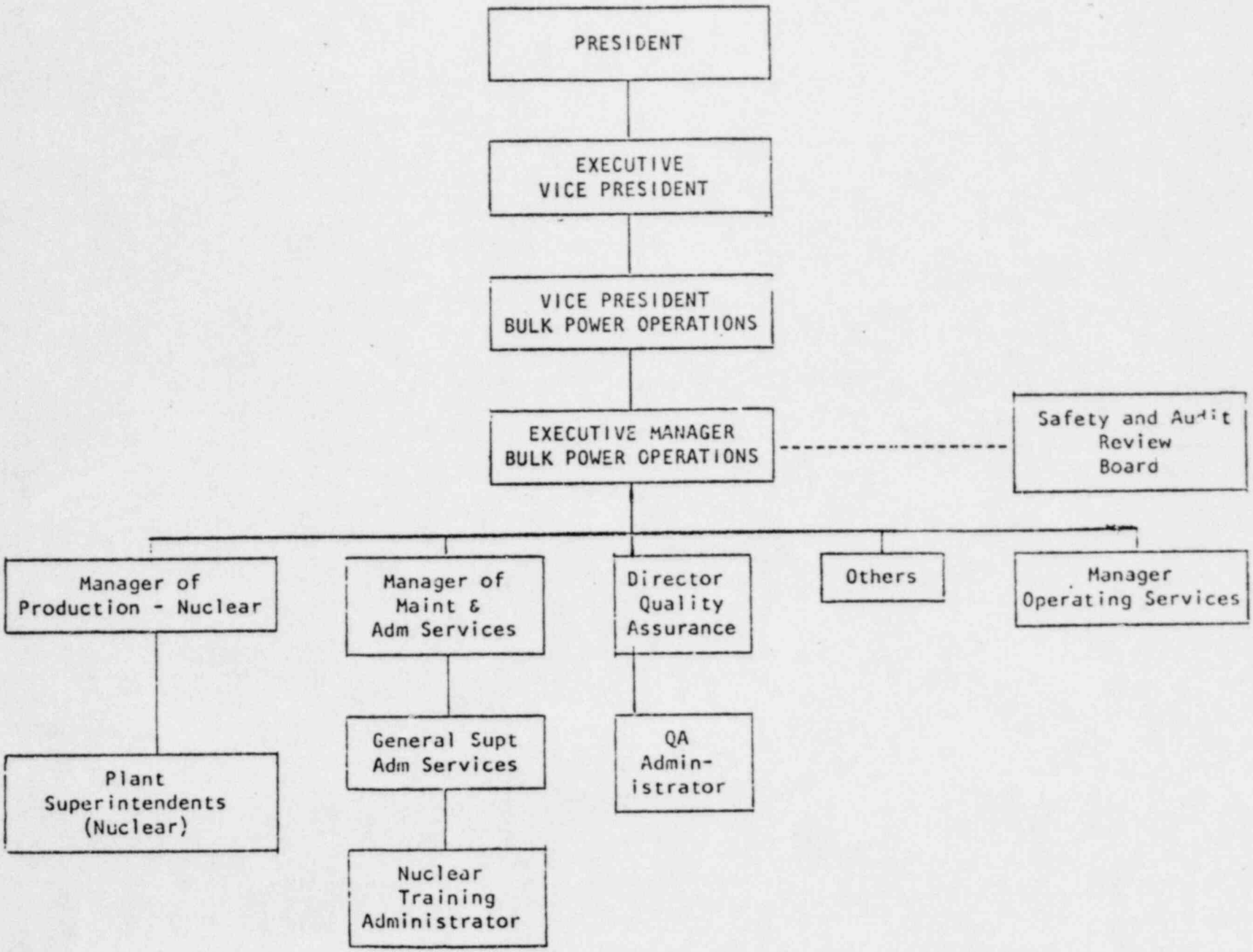
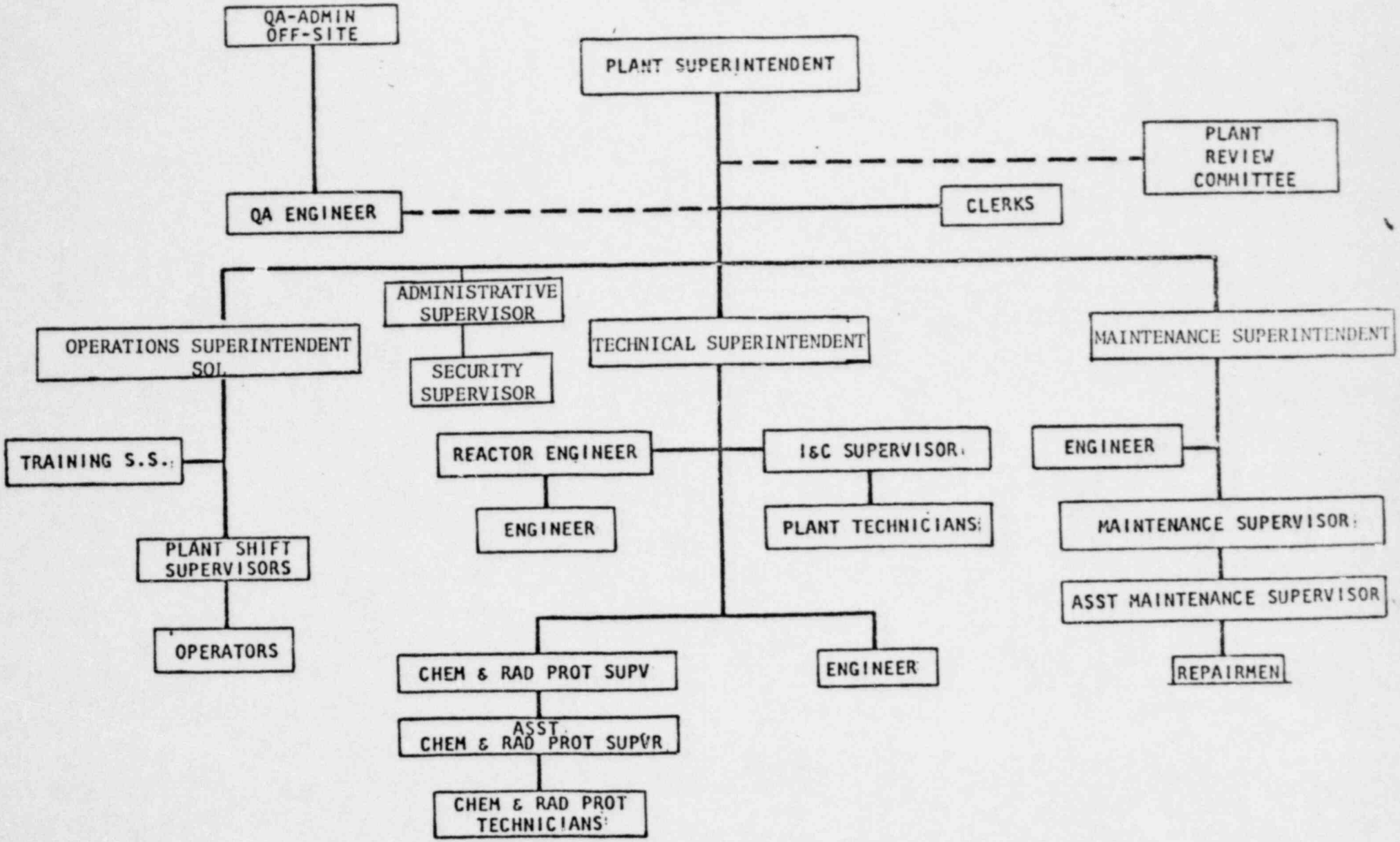


Figure 6.2-1

CONSUMERS POWER COMPANY

BIG ROCK POINT

Organization



SOL - Senior Operator Licensed in accordance with 10 CFR 55.

FIGURE 6.2-1

TABLE 6.2-1

Minimum Shift Crew Composition

The minimum shift crew shall be as follows except when plant conditions specified in paragraph (a) or (b) below have been established (see note (1) below) or when an unexpected absence occurs (see note (2) below):

1 Shift Supervisor - SOL

2 Operators - OL

2 Operators - Nonlicensed

(a) Cold Shutdown

1 Shift Supervisor - SOL

1 Operator - OL

1 Operator - Nonlicensed

(b) Refueling Operations (See note (3) below)

1 Shift Supervisor - SOL

1 Operator - OL

2 Operators - Nonlicensed

SOL - Senior Operator Licensed in accordance with 10 CFR 55
OL - Operator Licensed in accordance with 10 CFR 55

(1) During control rod motion associated with reactor start-up (to a power level $\geq$ 5 percent), one licensed Operator shall observe the control rod manipulation to ensure established control rod withdrawal procedures are adhered to.

(2) In the event that any member of a minimum shift crew is absent or incapacitated due to illness or injury, a qualified replacement shall report onsite within two hours.

(3) Does not include additional personnel required when core alterations are being conducted. See 6.2.2.e.

6.4 TRAINING

6.4.1 A retraining and replacement training program for the plant staff shall be maintained under the direction of the Nuclear Training Administrator and shall meet or exceed the requirements and recommendations of Section 5.5 of ANSI N18.1-1971 and Appendix "A" of 10 CFR, Part 55.

6.5 REVIEW AND AUDIT

6.5.1 PLANT REVIEW COMMITTEE (PRC)

6.5.1.1 FUNCTION

The Plant Review Committee (PRC) shall function to advise the Plant Superintendent on all matters related to nuclear safety.

6.5.1.2 COMPOSITION

The PRC shall be composed of the:

Chairman:	Plant Superintendent
Member:	Operations Engineer
Member:	Technical Engineer
Member:	Maintenance Engineer
Member:	Plant Instrument and Control Supervisor
Member:	Reactor Engineer
Member:	Chemistry and Radiation Protection Supervisor
Member:	Shift Supervisor (One)
Member:	Engineer With at Least One-Year Plant Experience

6.5.1.3 ALTERNATES

Alternate members shall be appointed in writing by the PRC Chairman to serve on a temporary basis; however, no more than two alternates shall participate in PRC activities at any one time.

6.5.1 (Cont'd)

6.5.1.4 MEETING FREQUENCY

The PRC shall meet at least once per calendar month with special PRC meetings as required.

6.5.1.5 QUORUM

A quorum of the PRC shall consist of the Chairman and four members (including alternates).

6.5.1.6 RESPONSIBILITIES

The PRC shall be responsible for:

a. Review of (1) all procedures required by 6.8 and changes thereto, (2) any other proposed procedures or changes thereto as determined by the Plant Superintendent to affect nuclear safety.

b. Review of all proposed tests and experiments that affect nuclear safety.

c. Review of all proposed changes to the Technical Specifications.

d. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety.

e. Investigation of all violations of the Technical Specifications. A report shall be prepared and forwarded covering evaluation and recommendations to prevent recurrence to the Manager of Production, Nuclear and to the Chairman of the Safety and Audit Review Board (SARB).

f. Review of plant operations to detect potential safety hazards.

g. Performance of special reviews and investigations and reports thereon as requested by the Chairman of the SARB.

h. Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the Emergency Plan to the Chairman of the SARB.

6.5.1 (Cont'd)

6.5.1.7 AUTHORITY

The PRC shall:

a. Recommend to the Plant Superintendent written approval or disapproval of items considered under 6.5.1.6(a) through (d) above.

b. Render determinations in writing with regard to whether or not each item considered under 6.5.1.6(a) through (f) above constitutes an unreviewed safety question.

c. Provide immediate written notification to the Manager of Production, Nuclear and the Chairman of SARB of disagreement between the PRC and the Plant Superintendent. However, the Plant Superintendent shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

6.5.1.8 RECORDS

The PRC shall maintain written minutes of each meeting and copies shall be provided to the Manager of Production, Nuclear, the Chairman of SARB, PRC members and alternates.

6.5.2 SAFETY AND AUDIT REVIEW BOARD (SARB)

6.5.2.1 RESPONSIBILITIES

SARB is responsible for maintaining a continuing examination of designated plant activities. In all cases, where a matter is formally considered by SARB, its findings and recommendations are communicated in writing to the Executive Manager - Bulk Power Operations (BPO) and other appropriate levels of management. A written charter is prepared and approved by the Executive Manager - BPO which designates the membership, authority and rules for conducting the meetings. Board membership, qualifications, meeting frequency, quorum, responsibilities, authority and records are in accordance with the nuclear plant Technical Specifications and ANSI N18.7-1972.

6.5.2.2 FUNCTION

The SARB shall function to provide independent review of designated activities affecting safety-related components, systems and structures designated on the plant's Safety-Related Quality List contained in the Consumers Power Company Quality Assurance Program.

6.5.2 (Cont'd)

6.5.2.3 COMPOSITION AND QUALIFICATIONS

Collectively, the personnel appointed for the SARB by the Executive Manager - BPO shall be competent to conduct reviews and technical audits in the following areas:

a. Nuclear power plant operations.

b. Nuclear engineering.

c. Chemistry and radiochemistry.

d. Metallurgy.

e. Instrumentation and control.

f. Radiological safety.

g. Mechanical and electrical engineering.

h. Quality Assurance practices.

An individual appointed to the SARB may possess expertise in more than one of the above specialties. He should, in general, have had professional experience at or above the senior engineer level in his specialty.

6.5.2.4 ALTERNATE MEMBERS

Alternate members may be appointed by the Executive Manager - BPO to act in place of members during any legitimate and unavoidable absences including a conflict-of-interest determination. The qualifications of alternate members shall be similar to those members for whom they will substitute.

6.5.2.5 CONSULTANTS

Consultants shall be utilized as determined by the SARB members and/or chairman to provide expert advice to the SARB. SARB members are not restricted as to sources of technical input and may call for separate investigation from any competent source.

6.5.2 (Cont'd)

6.5.2.6 MEETING FREQUENCY

The SARB shall meet at least once per calendar quarter during the initial year of facility operation following fuel loading and at least once every six months thereafter.

6.5.2.7 QUORUM

A quorum of SARB shall consist of the Chairman or his designated alternate and four (4) members or their alternates. No more than a minority of the quorum shall have line responsibility for operation of the facility. It is the responsibility of the Chairman to ensure that the quorum convened for a SARB meeting contains appropriately qualified members or has at its disposal consultants sufficient to carry out the review functions required by the meeting agenda.

6.5.2.8 REVIEW

The SARB shall review:

a. Proposed tests or changes to procedures, equipment, systems which are deemed to involve an unreviewed safety question as defined in 10 CFR 50.59.

b. Proposed changes in Technical Specifications or licenses.

c. Significant operating abnormalities or deviations from normal and expected performance of plant equipment that affect nuclear safety.

d. All events which are required by regulations or Technical Specifications to be reported to NRC in writing within 24 hours and other violations of applicable statutes, codes, regulations, orders, Technical Specifications, license requirements or of internal procedures or instructions having nuclear safety significance.

e. Reports and meeting minutes of the PRC including safety evaluations for changes to procedures, equipment, or systems and tests or experiments completed under the provisions of 10 CFR 50.59 to verify that such actions did not constitute an unreviewed safety question.

f. Operational and major modification Quality Assurance Program audit reports.

g. Technical audit reports.

h. The status of deficiencies identified by the Quality Assurance Program, including the effectiveness of the corrective actions completed and implemented, at least once every six (6) months.

i. Audits of the Security Program required by the "Nuclear Power Plant Security Plan."

6.5.2.9 AUDITS

Audits of safety-related facility activities during operations are performed by the Quality Assurance Department - BPO in accordance with the policies and procedures of the Consumers Power Company Quality Assurance Program. Quality assurance audit reports are sent to SARB for review. In addition, technical audits are the responsibility of the Technical Services Department and shall be reviewed by SARB. These technical audits encompass:

a. The conformance of facility operation to all provisions contained within the Technical Specifications and applicable license conditions at least once per year.

b. The performance, training and qualifications of the entire facility staff at least once per year.

c. The facility Site Emergency Plan and implementing procedures at least once per two years.

d. Any other area of facility operation considered appropriate by SARB or the Vice President - BPO.

6.5.2.10 AUTHORITY

SARB shall report to and advise the Executive Manager - BPO on those areas of responsibility specified in 6.5.2.8 and 6.5.2.9.

6.5.2.11 RECORDS

Records of SARB activities shall be prepared and distributed as indicated below:

a. Minutes of each SARB meeting shall be prepared and forwarded to the Executive Manager - BPO and each SARB member within fourteen (14) days following each meeting. Minutes shall be approved at or before the next regularly scheduled meeting following distribution of the minutes.

b. If not included in SARB meeting minutes, reports of reviews encompassed by Section 6.5.2.8 above shall be prepared and forwarded to the Executive Manager - BPO within fourteen (14) days following completion of the review.

c. Audit reports encompassed by 6.5.2.9 above, shall be forwarded to the Executive Manager-BPO and management positions responsible for the areas audited within thirty (30) days after completion of the audit.

6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken in the event of a reportable occurrence:

a. The Commission shall be immediately notified pursuant to 6.7 or a report submitted pursuant to the requirements of 6.9.

b. All events which are required by regulation or Technical Specifications to be reported to the NRC in writing within 24 hours shall be reviewed by the PRC. The results of the PRC review shall be submitted (either by PRC minutes or by separate report) to SARB and the Manager of Production, Nuclear.

6.7 SAFETY LIMIT VIOLATION

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

a. The reactor shall be shut down immediately and not restarted until Commission authorization is received [10 CFR 50.36(c)(1)(i)].

b. The Safety Limit violation shall be reported immediately to the Commission in accordance with 10 CFR 50.36, the Manager of Production, Nuclear and to SARB Chairman or Vice-Chairman.

c. A report shall be prepared in accordance with 10 CFR 50.36 and 6.9 of this specification. The Safety Limit violation and the report shall be reviewed by the PRC.

d. The report shall be submitted within 10 days to the Commission (in accordance with the requirements of 10 CFR 50.36), SARB Chairman and the Manager of Production, Nuclear.

6.8 PROCEDURES

6.8.1 Written procedures shall be established, implemented and maintained for all structures, systems, components and safety actions defined in the Big Rock Point Quality List. These procedures shall meet or exceed the requirements of ANSI-18.7.

6.8.2 Each procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the PRC (except for security procedures which are reviewed by the Company Security Department) and approved by the Plant Superintendent prior to implementation.

6.8.3 Temporary changes to procedures of 6.8.1 above may be made provided:

a. The intent of the original procedure is not altered.

b. The change is approved by two members (or designated alternates) of the PRC, at least one of whom holds a Senior Reactor Operator's License.

c. The change is documented, reviewed by the PRC at the next regularly scheduled meeting and approved by the Plant Superintendent.

6.9 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 Director of the appropriate Regional Office of Inspection and Enforcement unless otherwise noted.

6.9.1 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 manufactured 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 Hazards Summary Report 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.

b. Annual Operating Report

Routine operating reports covering the operation of the unit during the previous calendar year should be submitted prior to March 1 of each year. The initial report shall be submitted prior to March 1 of the year following initial criticality.

The annual operating reports made by licensees shall provide a comprehensive summary of the operating experience gained during the year, even though some repetition of previously reported information may be involved. References in the annual operating report to previously submitted reports shall be clear.

Each annual operating report shall include:

(1) A narrative summary of operating experience during the report period relating to safe operation of the facility, including safety-related maintenance not covered in 6.9.1.b.(2)(e) below.

(2) For each outage or forced reduction in power[1/] of over twenty percent of design power level where the reduction extends for greater than four hours:

(a) the proximate cause and the system and major component involved (if the outage or forced reduction in power involved equipment malfunction);

(b) a brief discussion of (or reference to reports of) any reportable occurrences pertaining to the outage or power reduction;

(c) corrective action taken to reduce the probability of recurrence, if appropriate;

1/ The term "forced reduction in power" is normally defined in the electric power industry as the occurrence of a component failure or other condition which requires that the load on the unit be reduced for corrective action immediately or up to and including the very next weekend. Note that routine preventive maintenance, surveillance and calibration activities requiring power reductions are not covered by this section.

(d) operating time lost as a result of the outage or power reduction (for scheduled or forced outages,[2/] use the generator off-line hours; for forced reductions in power, use the approximate duration of operation at reduced power);

(e) a description of major safety-related corrective maintenance performed during the outage or power reduction, including the system and component involved and identification of the critical path activity dictating the length of the outage or power reduction; and

(f) a report of any single release of radioactivity or radiation exposure specifically associated with the outage which accounts for more than 10% of the allowable annual values.

(3) 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. 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.

(4) Indications of failed fuel resulting from irradiated fuel examinations, including eddy current tests, ultrasonic tests, or visual examinations completed during the report period.

c. Monthly Operating Report

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

2/ The term "forced outage" is normally defined in the electric power industry as the occurrence of a component failure or other condition which requires that the unit be removed from service for corrective action immediately or up to and including the very next weekend.

3/ This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

6.9.2 Reportable Occurrences

Reportable occurrences, including corrective actions and measures to prevent reoccurrence, shall be reported to the NRC. Supplemental reports may be required to fully describe final resolution of occurrence. In case of corrected or supplemental reports, a licensee event report shall be completed and reference shall be made to the original report date.

a. Prompt Notification With Written Followup

The types of events listed below shall be reported as expeditiously as possible, but within 24 hours by telephone and confirmed by telegraph, mailgram, or facsimile transmission to the Director of the appropriate Regional Office, or his designate no later than the first working day following the event, with a written followup report within two weeks. The written followup report shall include, as a minimum, a completed copy of a licensee event report form. Information provided on the licensee event report form shall be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

(1) Failure of the reactor protection system or other systems subject to limiting safety system settings to initiate the required protective function by the time a monitored parameter reaches the setpoint specified as the limiting safety system setting in the technical specifications or failure to complete the required protective function.

Note: Instrument drift discovered as a result of testing need not be reported under this item but may be reportable under 6.9.2.a(5), (6), or 6.9.2.b(1) below.

(2) Operation of the unit or affected systems when any parameter or operation subject to a limiting condition is less conservative than the least conservative aspect of the limiting condition for operation established in the technical specifications.

Note: If specified action is taken when a system is found to be operating between the most conservative and the least conservative aspects of a limiting condition for operation listed in the technical specifications, the limiting condition for operation is not considered to have been violated and need not be reported under this item, but it may be reportable under 6.9.2.b(2) below.

(3) Abnormal degradation discovered in fuel cladding, reactor coolant pressure boundary, or primary containment.

Note: Leakage of valve packing or gaskets within the limits for identified leakage set forth in technical specifications need not be reported under this item.

(4) Reactivity anomalies involving disagreement with the predicted value of reactivity balance under steady state conditions during power operation, greater than or equal to 1% Δk/k; a calculated reactivity balance indicating a shutdown margin less conservative than specified in the technical specifications; short-term reactivity increases that correspond to a reactor period of less than 5 seconds or, if sub-critical, an unplanned reactivity insertion of more than 0.5% Δk/k or occurrence of any unplanned criticality.

(5) Failure or malfunction of one or more components which prevents or could prevent, by itself, the fulfillment of the functional requirements of system(s) used to cope with accidents analyzed in the Final Hazards Summary Report (FHSR).

(6) Personnel error or procedural inadequacy which prevents or could prevent, by itself, the fulfillment of the functional requirements of systems required to cope with accidents analyzed in the FHSR.

Note: For 6.9.2.a(5) and (6) reduced redundancy that does not result in a loss of system function need not be reported under this section but may be reportable under 6.9.2.b(2) and (3) below.

(7) Conditions arising from natural or man-made events that, as a direct result of the event require plant shutdown, operation of safety systems, or other protective measures required by technical specifications.

(8) Errors discovered in the transient or accident analyses or in the methods used for such analyses as described in the safety analysis report or in the bases for the technical specifications that have or could have permitted reactor operation in a manner less conservative than assumed in the analyses.

(9) Performance of structures, systems, or components that requires remedial action or corrective measures to prevent operation in a manner less conservative than assumed in the accident analyses in the safety analysis report or technical specifications bases; or discovery during plant life of conditions not specifically considered in the safety analysis report or technical specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition.

Note: This item is intended to provide for reporting of potentially generic problems.

b. Thirty Day Written Reports

The reportable occurrences discussed below shall be the subject of written reports to the Director of the appropriate Regional Office within thirty days of occurrence of the event. The written report shall include, as a minimum, a completed copy of a licensee event report form. Information provided on the licensee event report form shall be supplemented, as needed, by additional narrative material to provide complete explanation of the circumstances surrounding the event.

(1) Reactor protection system or engineered safety feature instrument settings which are found to be less conservative than those established by the technical specifications but which do not prevent the fulfillment of the functional requirements of affected systems.

(2) Conditions leading to operation in a degraded mode permitted by a limiting condition for operation or plant shutdown required by a limiting condition for operation.

Note: Routine surveillance testing, instrument calibration, or preventative maintenance which require system configurations as described in 6.9.2.b(1) and (2) need not be reported except where test results themselves reveal a degraded mode as described above.

(3) Observed inadequacies in the implementation of administrative or procedural controls which threaten to cause reduction of degree of redundancy provided in reactor protection systems or engineered safety feature systems.

(4) Abnormal degradation of systems other than those specified in 6.9.2.a(3) above designed to contain radioactive material resulting from the fission process.

Note: Sealed sources or calibration sources are not included under this item. Leakage of valve packing or gaskets within the limits for identified leakage set forth in technical specifications need not be reported under this item.

6.9.3 Unique Reporting Requirements

a. Radioactive Effluent Release

A report shall be submitted to NRC within 60 days after January 1 and Ju'y 1 of each year specifying the quantity of each of the principal radionuclides released to unrestricted areas in liquid and gaseous effluents during the previous 6 months. The format and content of the report shall be in accordance with Regulatory Guide 1.21 Revision 1 dated June 1974.

(1) Gaseous Effluents

(a) Gross Radioactivity Releases

(i) Total gross radioactivity (in curies), including noble and activation gases released.

(ii) Maximum gross radioactivity release rate during any one-hour period.

(iii) Total gross radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.

(iv) Percent of technical specification limit.

(b) Iodine Releases

(i) Total iodine radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.

(ii) Percent of technical specification limits for I-131 released.

(c) Particulate Releases

(i) Gross radioactivity (β, γ) released (in curies) excluding background radioactivity.

(ii) Gross alpha radioactivity released (in curies) excluding background radioactivity.

(iii) Total gross radioactivity (in curies) of nuclides with half-lives greater than eight days.

(iv) Percent of technical specification limit for particulate radioactivity with half-lives greater than eight days.

6.9.3 (Cont'd)

(2) Liquid Effluents

(a) Gross radioactivity (β , γ) released (in curies) excluding tritium and average concentration released to the unrestricted area.

(b) Total tritium and alpha radioactivity (in curies) released and average concentration released to the unrestricted area.

(c) Total dissolved gas radioactivity (in curies) and average concentration released to the unrestricted area.

(d) Total volume (in liters) of liquid waste released.

(e) Total volume (in liters) of dilution water used prior to release from the restricted area.

(f) The maximum concentration of gross radioactivity (β , γ) released to the unrestricted area (averaged over the period of release).

(g) Total radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.

(h) Percent of technical specification limit and 10 CFR Part 20 concentration limits for unrestricted areas.

(3) Solid Waste

(a) The total amount of solid waste packaged (in cubic feet).

(b) The total estimated radioactivity (in curies) involved.

(c) Disposition, including dates and destination if shipped off site.

b. Environmental Monitoring

(1) For each medium sampled; e.g., air, sediment, surface water, soil, or fish, include:

(a) Number of sampling locations.

(b) Total number of samples.

(c) Number of locations at which levels are found to be significantly above local backgrounds.

(d) Highest, lowest, and the annual average concentrations or levels of radiation for the sampling point with the highest average and description of the location of that point with respect to the site.

(2) If levels of radioactive materials in environmental media indicate the likelihood of public intakes in excess of 1% of those that could result from continuous annual exposure to the concentration values listed in Appendix B, Table II, Part 20, estimates of the likely resultant exposure to individuals and to population groups and assumptions upon which estimates are based shall be provided.

(3) If statistically significant variations of offsite environmental concentrations with time are observed, correlation of these results with effluent release shall be provided.

6.9.4 Special Reports

Special Reports shall be submitted to the Director of the appropriate 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 technical specification section:

a. In-service inspection reports.

6.10 RECORD RETENTION

(Records not previously required to be retained shall be retained as required below commencing January 1, 1976.)

6.10.1 The following records shall be retained for at least five years;

a. Records and logs of facility operation covering time interval at each power level.

b. Records and logs of principal maintenance activities, inspections, repair and replacement of principal items of equipment related to nuclear safety.

c. Records of reportable occurrences.

d. Records of surveillance activities, inspections and calibrations required by these Technical Specifications.

e. Records of reactor tests and experiments.

f. Records of changes made to Operating Procedures.

g. Records of radioactive shipments.

h. Records of training and qualification for current members of the plant staff.

i. Records of sealed source leak tests and results.

j. Records of annual physical inventory of all source material of record.

6.10.2 The following records shall be retained for the duration of the Facility Operating License:

a. Record and drawing changes reflecting facility design modifications made to systems and equipment described in the FHSR.

b. Records of new and irradiated fuel inventory, fuel transfers and assembly burnup histories.

c. Records of monthly facility radiation and contamination surveys.

d. Records of radiation exposure for all individuals entering radiation control areas.

e. Records of gaseous and liquid radioactive material released to the environs.

f. Records of transient or operational cycles for those facility components designed for a limited number of transients or cycles.

g. Records of inservice inspections performed pursuant to these Technical Specifications.

h. Records of Quality Assurance activities required by the QA Manual to be retained for the duration of the facility operating license.

i. Records of reviews performed for changes made to procedures or equipment or reviews of tests and experiments pursuant to 10 CFR 50.59.

j. Records of meetings of the PRC and the SARB.

6.11 RADIATION PROTECTION PROGRAM

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

6.12 RESPIRATORY PROTECTION PROGRAM

ALLOWANCE

6.12.1 Pursuant to 10 CFR 20.103(c)(1) and (3), allowance may be made for the use of respiratory protective equipment in conjunction with activities authorized by the operating license for this facility in determining whether individuals in restricted areas are exposed to concentrations in excess of the limits specified in Appendix "B," Table I, Column 1, of 10 CFR 20, subject to the following conditions and limitations:

a. The limits provided in Section 20.103(a) and (b) shall not be exceeded.

b. If the radioactive material is of such form that intake through the skin or other additional route is likely, individual exposures to radioactive material shall be controlled so that the radioactive content of any critical organ from all routes of intake averaged over seven (7) consecutive days does not exceed that which would result from inhaling such radioactive material for forty (40) hours at the pertinent concentration values provided in Appendix "B," Table I, Column 1, of 10 CFR 20.

c. For radioactive materials designated "Sub" in the "Isotope" column of Appendix "B," Table I, Column 1, of 10 CFR 20, the concentration value specified shall be based upon exposure to

6.12.1 (Cont'd)

the material as an external radiation source. Individual exposures to these materials shall be accounted for as part of the limitation on individual dose in § 20.101. These materials shall be subject to applicable process and other engineering controls.

PROTECTION PROGAM

6.12.2 In all operations in which adequate limitation of the inhalation of radioactive material by the use of process or other engineering controls is impracticable, the licensee may permit an individual in a restricted area to use respiratory protective equipment to limit the inhalation of airborne radioactive material, provided:

a. The limits specified in 6.12.1 above are not exceeded.

b. Respiratory protective equipment is selected and used so that the peak concentrations of airborne radioactive material inhaled by an individual wearing the equipment do not exceed the pertinent concentration values specified in Appendix "B," Table I, Column 1, of 10 CFR 20. For the purposes of this subparagraph, the concentration of radioactive material that is inhaled when respirators are worn may be determined by dividing the ambient airborne concentration by the protection factor specified in Table 6.12-1 for the respirator protective equipment worn. If the intake of radioactivity is later determined by other measurements to have been different than that initially estimated, the later quantity shall be used in evaluating the exposures.

c. The licensee advises each respirator user that he may leave the area at any time for relief from respirator use in case of equipment malfunction, physical or psychological discomfort, or any other condition that might cause reduction in the protection afforded the wearer.

d. The licensee maintains a respiratory protective program adequate to assure that the requirements above are met and incorporates practices for respiratory protection consistent with those recommended by the American National Standards Institute (ANSI-Z88.2-1969). Such a program shall include:

(1) Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposures, and to permit proper selection of respiratory protective equipment.

(2) Written procedures to assure proper selection, supervision and training of personnel using such protective equipment.

(3) Written procedures to assure the adequate fitting of respirators; and the testing of respiratory protective equipment for operability immediately prior to use.

(4) Written procedures for maintenance to assure full effectiveness of respiratory protective equipment, including issuance, cleaning, decontamination, inspection, repair and storage.

(5) Written operational and administrative procedures for proper use of respiratory protective equipment including provisions for planned limitations on working times as necessitated by operational conditions.

(6) Bioassays and/or whole body counts of individuals (and other surveys, as appropriate) to evaluate individual exposures and to assess protection actually provided.

e. The licensee shall use equipment approved by the US Bureau of Mines under its appropriate Approval Schedules as set forth in Table 6.12-1. Equipment not approved under US Bureau of Mines Approval Schedules shall be used only if the licensee has evaluated the equipment and can demonstrate by testing, or on the basis of reliable test information, that the material and performance characteristics of the equipment are at least equal to those afforded by US Bureau of Mines approved equipment of the same type, as specified in Table 6.12-1.

f. Unless otherwise authorized by the Commission, the licensee shall not assign protection factors in excess of those specified in Table 6.12-1 in selecting and using respiratory protective equipment.

REVOCATION

6.12.3 The specifications of 6.12 shall be revoked in their entirety upon adoption of the proposed change to 10 CFR 20, Section 20.103, which would make such provisions unnecessary.

TABLE 6.12-1
Protection Factors for Respirators

Description	Modes[1]	Protection Factors[2] Particulates and Vapors and Gases Except Tritium Oxide[3]	Guides to Selection of Equipment Bureau of Mines/NIOSH Approval *Schedules For Equipment Capable of Providing at Least Equivalent Protection Factors
I. AIR-PURIFYING RESPIRATORS			
Facepiece, Half-Mask[4,7]	NP	5	21B 30 CFR § 14.4(b)(4)
Facepiece, Full[7]	NP	100	21B 30 CFR § 14.4(b)(5); 14F 30 CFR 13
II. ATMOSPHERE-SUPPLYING RESPIRATOR			
1. Air Line Respirator			
Facepiece, Half-Mask	CF	100	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, Full	CF	1,000	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, Full[7]	D	100	19B 30 CFR § 12.2(c)(2) Type C(ii)
Facepiece, Full	PD	1,000	19B 30 CFR § 12.2(c)(2) Type C(iii)
Hood	CF	5	6
Suit	CF	5	6
2. Self-Contained Breathing Apparatus (SCBA)			
Facepiece, Full[7]	D	100	13E 30 CFR § 11.4(b)(2)(i)
Facepiece, Full	PD	1,000	13E 30 CFR § 11.4(b)(2)(ii)
Facepiece, Full	R	100	13E 30 CFR § 11.4(b)(1)
III. COMBINATION RESPIRATOR			
Any Combination of Air-Purifying and Atmosphere-Supplying Respirator		Protection Factor for Type and Mode of Operation as Listed Above	19B CFR § 12.2(e) or Applicable Schedules as Listed Above

1, 2, 3, 4, 5, 6, 7(These notes are on the following pages.)

*Or Schedule Superseding for Equipment of Type Listed

TABLE 6.12-1 (Contd)

[1]See the following symbols:

CF: Continuous Flow
D: Demand
NP: Negative Pressure (ie, Negative Phase During Inhalation)
PD: Pressure Demand (ie, Always Positive Pressure)
R: Recirculating (Closed Circuit)

[2](a) For purposes of this specification the protection factor is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of airborne radioactive material outside the respiratory protective equipment to that inside the equipment (usually inside the facepiece) under conditions of use. It is applied to the ambient airborne concentration to estimate the concentration inhaled by the wearer according to the following formula:

$$\text{Concentration Inhaled} = \frac{\text{Ambient Airborne Concentration}}{\text{Protection Factor}}$$

(b) The protection factors apply:

(i) Only for trained individuals wearing properly fitted respirators used and maintained under supervision in a well-planned respiratory protective program.

(ii) For air-purifying respirators only when high efficiency (above 99.9% removal efficiency by US Bureau of Mines type dioctyl phthalate (DOP) test) particulate filters and/or sorbents appropriate to the hazard are used in atmospheres not deficient in oxygen.

(iii) For atmosphere-supplying respirators only when supplied with adequate respirable air.

TABLE 6.12-1 (Contd)

[3]Excluding radioactive contaminants that present an absorption or submersion hazard. For tritium oxide, approximately half of the intake occurs by absorption through the skin so that an overall protection factor of not more than approximately 2 is appropriate when atmosphere-supplying respirators are used to protect against tritium oxide. Air-purifying respirators are not recommended for use against tritium oxide. See also Footnote [5], below, concerning supplied-air suits and hoods.

[4]Under chin type only. Not recommended for use where it might be possible for the ambient airborne concentration to reach instantaneous values greater than 50 times the pertinent values in Appendix "B," Table I, Column 1 of 10 CFR, Part 20.

[5]Appropriate protection factors must be determined taking account of the design of the suit or hood and its permeability to the contaminant under conditions of use. No protection factor greater than 1,000 shall be used except as authorized by the Commission.

[6]No approval schedules currently available for this equipment. Equipment must be evaluated by testing or on basis of available test information.

[7]Only for shaven faces.

NOTE 1: Protection factors for respirators, as may be approved by the US Bureau of Mines and/or NIOSH according to approval schedules for respirators to protect against airborne radionuclides, may be used to the extent that they do not exceed the protection factors listed in this table. The protection factors in this table may not be appropriate to circumstances where chemical or other respiratory hazards exist in addition to radioactive hazards. The selection and use of respirators for such circumstances should take into account approvals of the US Bureau of Mines and/or NIOSH in accordance with its applicable schedules.

NOTE 2: Radioactive contaminants for which the concentration values in Appendix B, Table I of this part are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations. Under such circumstances, limitations on occupancy may have to be governed by external dose limits.