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TO: Mr Lear	ORIG 3 signe d	CC	OTHER	SENT AEC PDR XX; SENT LOCAL PDR XX		
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DESCRIPTION:
Ltr re our 10-22-74 ....trans the following:

PLANT NAME: H B Robinson #2

ENCLOSURES:
Amdt to OL/ Change to Tech Specs: Consisting of changes to the Administrative Controls....

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CP&L
Carolina Power & Light Company

December 17, 1974

50-261

File: NG-3514 (R)

Serial: NG-74-1462

Mr. George Lear, Chief
Operating Reactors Branch #3
Directorate of Licensing
Office of Regulation
U. S. Atomic Energy Commission
Washington, D. C. 20545

H. B. ROBINSON UNIT NO. 2
LICENSE DPR-23
REQUEST FOR LICENSE AMENDMENT
REVISIONS OF TECHNICAL SPECIFICATIONS

Dear Mr. Lear:

In accordance with the Code of Federal Regulations, Title 10, Part 50.59, and in response to your letter of October 22, 1974, Carolina Power & Light Company submits a proposed revision to the Technical Specifications for its H. B. Robinson Unit No. 2 Plant. The revision concerns the modification of the "Administrative Controls" section to conform to the standard Technical Specification content and format included with your letter and to incorporate the recommendations of the recently issued Regulatory Guide 1.16, Revision 2.

The proposed Technical Specifications have been modified slightly with respect to the standard Technical Specifications to reflect Carolina Power & Light Company's corporate organization and the present organization of the Plant and Company Nuclear Safety Committees. This appears to be consistent with the philosophy of the AEC's standard. Other modifications have also been proposed, and a discussion of these modifications and our justification for them will be presented in the ensuing text.

We do not wish the Commission to construe that these proposed modifications exhibit a reluctancy by Carolina Power & Light Company to move toward eventual standardization of these and remaining sections of the Technical Specifications. On the contrary, we endorse this program which, we feel, will provide uniform specifications that can be applied and regulated uniformly for all plants, and desire to work closely with you to achieve that result. Thus, our proposed modifications are intended to provide clarification to areas where we are concerned that sufficient clarity of intent may not, in our view, have been provided.

12766

In Specification 6.3.1 we have proposed that the intent of the ANSI standard in November N18.1 in 1971 be applied for the qualifications of the members of the facility staff. We feel that this modification is required to allow us to utilize available personnel within the staff organization to the best advantage. The following are two examples where this is evident:

1. There are many people available within the nuclear industry who do not have the specific educational requirements. required by this standard but who by virtue of other training and occupational experience are well qualified to hold a particular position even though they may not meet a specific requirement such as a bachelor's degree in engineering or science.

2. In some cases specific types of occupational experience may not be available. For example, even though a prospective supervisor may not have adequate "power plant experience" he may have obtained similar closely related experience in the process control industry.

Due to the rapid growth of the nuclear power industry and the limited availability of personnel it is our position that company management should be given the flexibility to staff our plants with qualified personnel even though a specific individual may not have the specific qualifications of ANSI-N18.1. Applying this standard in a strict legal sense by inclusion in the Technical Specification defeats this purpose and opens up possible areas of misinterpretation between the regulatory branch and the utility.

In Specification 6.5.1.6.i., we have proposed the deletion of the requirement for submittal of recommended changes in the Emergency Plan to the CNSC. We presently make these changes at the plant level and foresee no need to further formalize changes in this particular plan. It should be noted that the CNSC is still provided with a review function for all changes of this nature, but there is no function for approval of Emergency Plan changes provided in our present Technical Specifications, nor was such a mechanism provided in the standard Technical Specifications.

In Specification 6.5.2.8.b., we have proposed the deletion of CNSC audit of facility staff performance. We take this to mean individual performance, which is a matter of responsibility for the plant management personnel. Individual job performance must not be the subject of an audit item. Requalification tests, staff training records, etc. are perfectly legitimate areas for audits, and should provide all of the necessary information to determine the qualifications of the staff personnel.

In Specification 6.8.2, we have proposed a specific description of all those procedures important to plant safety that will be reviewed by the PNSC and approved by the Plant Manager. This clarification will avoid burdening the PNSC with review of procedures not connected with maintaining the health and safety of the public, such as procedures for equipment maintenance that does not affect nuclear safety, rather than the general review of every plant procedure that exists in the plant as is implied by the paragraph in your standard Technical Specifications. Otherwise, the Plant Nuclear Safety Committee would have practically full-time responsibility for procedure review, and could not properly fulfill its intended function, namely assurance of nuclear safety.

In Specification 6.8.3.c., we have proposed a thirty-day period for PNSC review after implementation of temporary changes. The seven-day period is far too short for proper documentation, review, and approval of such changes, since they are usually minor and corrective in nature, being limited to those changes that do not alter the intent of the original procedure.

In Specification 6.9.1, we have proposed eight areas of Regulatory Guide 1.16, Revision 2, in which we have exceptions to the requirements of the guide. We have also provided these as comments to the Regulatory Guide (letter, E. E. Utley to Paul C. Bender, November 13, 1974), and reference these comments as justification for our proposed exceptions. We feel these areas should be addressed by the Commission prior to the guide (which is still in a comment stage) becoming an integral part of the Robinson Technical Specifications.

The revisions to the Technical Specifications discussed above are presented in the attached page changes to the Specifications.

As required by Commission Regulations, this submittal is signed under oath by a duly authorized Officer of the Company.

DBW:mvp
Attachment

Yours very truly,

E. E. Utley
Vice-President
Bulk Power Supply

cc: Messrs. N. B. Bessac
T. E. Bowman
W. B. Howell
J. B. McGirt
D. V. Menscer
D. B. Waters

Sworn to and subscribed before me this 17th day of December, 1974.

Nancy A. Stephens
Notary Public

My commission expires: June 29, 1976

NANCY A. STEPHENS NOTARY PUBLIC WAKE COUNTY, N. C.

1.6.2 Channel Functional Test

Injection of a simulated signal into the channel to verify that it is operable, including alarm and/or trip initiating action.

1.6.3 Channel Calibration

Adjustment of channel output such that it responds, with acceptable range and accuracy, to known value of the parameter which the channel measures. Calibration shall encompass the entire channel, including alarm or trip, and shall be deemed to include the channel functional test.

1.7 Containment Integrity

Containment integrity is defined to exist when:

a. All non-automatic containment isolation valves not required for normal operation are closed and blind flanges are properly installed where required.

b. The equipment door is properly closed and sealed.

c. At least one door in the personnel air lock is properly closed and sealed.

d. All automatic containment isolation trip valves are operable or are secured closed. Manual valves qualifying as automatic containment isolation valves are secured closed.

e. The uncontrolled containment leakage satisfies Specification 4.4.

1.8 Abnormal Occurrence

An ABNORMAL OCCURRENCE shall be any of those conditions specified in Revision 2 of Regulatory Guide 1.16, "Reporting of Operating Information - Appendix "A"

Technical Specifications."

1.9 Quadrant Power Tilt

The quadrant power tilt is defined as the ratio of maximum to average of the upper excore detector currents or the lower excore detector currents whichever is greater. If one excore is out of service, the three in-service units are used in computing the average.

6.0 Administrative Controls

6.1 Responsibility

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

6.2 Organization

Offsite

6.2.1 The offsite organization for facility management and technical support shall be as shown on Figure 6.2.1.

Facility Staff

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

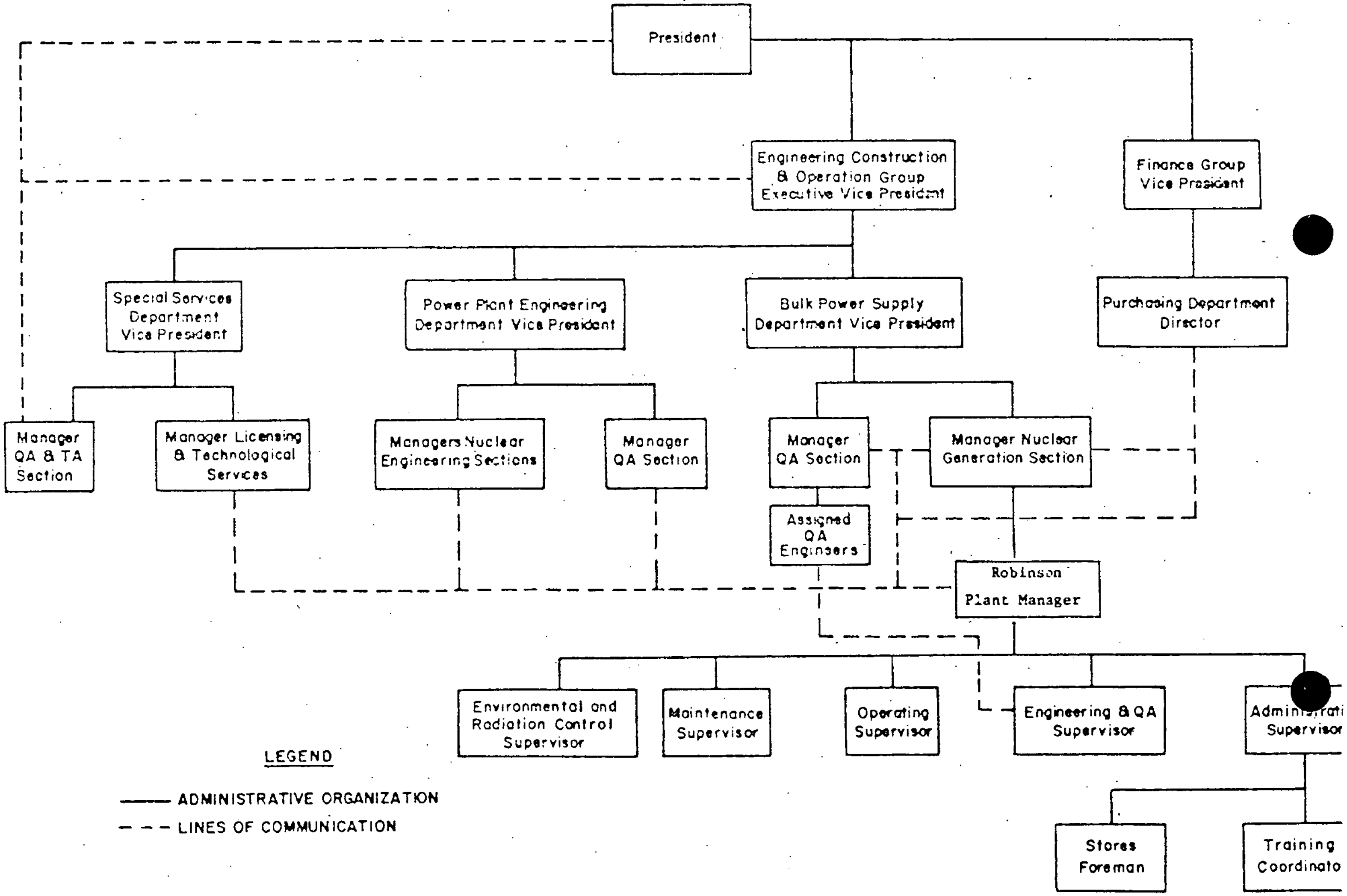
a. The shift complement shall consist of at least one shift foreman holding a Senior Reactor Operator's License, two control operators each holding a Reactor Operator's License, and one additional shift member.

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 start-up, 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 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 this operation.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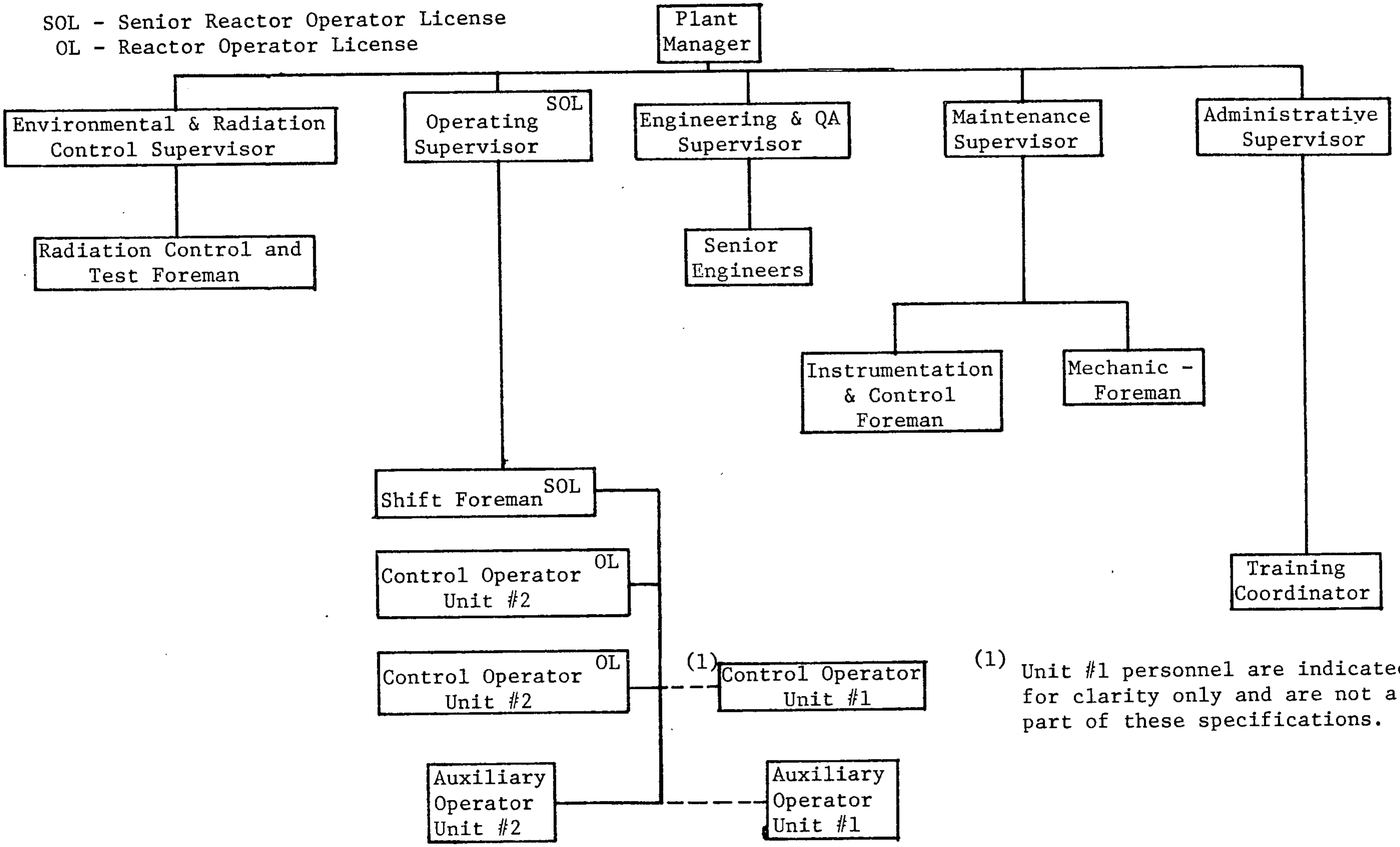
Finance Group Vice President
Special Services Department Vice President
Power Plant Engineering Department Vice President
Bulk Power Supply Department Vice President
Purchasing Department Director
Manager QA & TA Section
Manager Licensing & Technological Services
Managers Nuclear Engineering Sections
Manager QA Section
Manager QA Section
Manager Nuclear Generation Section
Assigned QA Engineers
Robinson Plant Manager
Environmental and Radiation Control Supervisor
Maintenance Supervisor
Operating Supervisor
Engineering & QA Supervisor
Supervisor
Stores Foreman
Training
LEGEND
ADMINISTRATIVE ORGANIZATION
LINES OF COMMUNICATION

Figure 6.2-1

CONDUCT OF OPERATIONS CHART

SOL - Senior Reactor Operator License
OL - Reactor Operator License



(1) Unit #1 personnel are indicated for clarity only and are not a part of these specifications.

Figure 6.2-2

6.3 Facility Staff Qualifications

6.3.1 Each member of the facility staff shall meet or exceed the intent of ANSI N18.1-1971 with regard to the minimum qualifications for comparable positions.

6.4 Training

6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Administrative Supervisor 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 Nuclear Safety Committee (PNSC)

Function

6.5.1.1 The Plant Nuclear Safety Committee shall function to advise the Plant Manager on all matters related to nuclear safety.

Composition

6.5.1.2 The Plant Nuclear Safety Committee shall be composed of the:

1. Chairman: Plant Manager
2. Vice Chairman: Operating Supervisor
3. Secretary: Administrative Supervisor
4. Maintenance Supervisor
5. Engineering and Quality Assurance Supervisor
6. Environmental and Radiation Control Supervisor.

Alternates

6.5.1.3 Alternate members shall be appointed in writing by the PNSC Chairman

to serve on a temporary basis; however, no more than two alternates shall participate in PNSC activities at any one time.

Meeting Frequency

6.5.1.4 The PNSC shall meet at least once per calendar month and as convened by the PNSC Chairman.

Quorum

6.5.1.5 A quorum of the PNSC shall consist of the Chairman or Vice Chairman plus three members including alternates.

Responsibilities

6.5.1.6 The Plant Nuclear Safety Committee shall be responsible for:

a. Review of 1) all procedures required by Specification 6.8 and changes thereto, 2) any other proposed procedures or changes thereto as determined by the Plant Manager 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 and shall prepare and forward a report covering evaluation and recommendations to prevent recurrence to the Manager of Nuclear Generation and to the Chairman of the Company Nuclear Safety Committee.

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

g. Performance of special reviews and investigations and reports thereon as requested by the Chairman of the Company Nuclear Safety Committee.

h. Review of the Plant Security Plan and implementing procedures.

i. Review of the Emergency Plan and implementing procedures.

Authority

6.5.1.7 The Plant Nuclear Safety Committee shall:

a. Recommend to the Plant Manager 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 (e) above constitutes an unreviewed safety question.

c. Provide immediate written notification to the Manager of Nuclear Generation and the CNSC of disagreement between the PNSC and the Plant Manager; however, the Plant Manager shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

Records

6.5.1.8 The Plant Nuclear Safety Committee shall maintain written minutes of each meeting and copies shall be provided to the Manager of Nuclear Generation and Chairman of CNSC.

6.5.2 Company Nuclear Safety Committee (CNSC)

Function

6.5.2.1 The Company Nuclear Safety Committee shall function to provide

independent review and audit of designated activities in the areas of:

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
i. (other appropriate fields associated with the unique characteristics of the nuclear power plant)

Composition

6.5.2.2 The CNSC shall be composed of the:

1. Chairman
2. Vice Chairman
3. Secretary
4. Four technically qualified persons who are not members of the plant staff
5. The Robinson Plant Manager or his appointed alternate from the Plant Supervisory or Engineering Staff

Members shall be designated by the Executive Vice-President, Engineering, Construction and Operation.

Alternates

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

Consultants

6.5.2.4 Consultants shall be utilized as determined by the CNSC Chairman to provide expert advice to the CNSC.

Meeting Frequency

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

Quorum

6.5.2.6 A quorum of CNSC shall consist of the Chairman or Vice Chairman plus five (5) members including alternates. No more than a minority of the quorum shall have line responsibility for operation of the facility.

Review

6.5.2.7 The CNSC shall review:

a. The safety evaluations for 1) changes to procedures, equipment or systems and 2) tests or experiments completed under the provision of Section 50.59, 10 CFR, to verify that such actions did not constitute an unreviewed safety question.

b. Proposed changes to procedures, equipment or systems which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

c. Proposed tests or experiments which involve an unreviewed safety question as defined in Section 50.59, 10 CFR.

d. Proposed changes in Technical Specifications or licenses.

e. Violations of applicable statutes, codes, regulations, orders, Technical Specifications, license requirements, or of internal procedures or instructions having nuclear safety significance.

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

g. ABNORMAL OCCURRENCES, as defined in Section 1.0 of these Technical Specifications.

h. Any indication of an unanticipated deficiency in some aspect of design or operation of safety related structures, systems, or components.

i. Reports and meeting minutes of the PNSC.

Audits

6.5.2.8 Audits of facility activities shall be performed under the cognizance of the CNSC. These audits shall 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 training and qualifications of the facility staff at least once per year.

c. The results of all actions taken to correct deficiencies occurring in facility equipment, structures, systems or method of operation that affect nuclear safety at least once per six months.

d. The performance of all activities required by the Quality Assurance Program to meet the criteria of Appendix "B", 10 CFR 50, at least once per two years.

e. The Facility Emergency Plan and implementing procedures at least once per two years.

f. The Facility Security Plan and implementing procedures at least once per two years.

g. Any other area of facility operation considered appropriate by the CNSC or the Vice President - Bulk Power Supply Department.

Authority

6.5.2.9 The CNSC shall report to and advise the Vice President - Bulk Power Supply Department on those areas of responsibility specified in Sections 6.5.2.7 and 6.5.2.8.

Records

6.5.2.10 Records of CNSC activities shall be prepared, approved and distributed as indicated below:

a. Minutes of each CNSC meeting shall be prepared, approved and forwarded to the Vice President - Bulk Power Supply Department within 14 days following each meeting.

b. Reports of reviews encompassed by Section 6.5.2.7 e, f, g and h above, shall be prepared, approved and forwarded to the Vice President - Bulk Power Supply Department within 14 days following completion of the review.

c. Audit reports encompassed by Section 6.5.2.8 above, shall be forwarded to the Vice President - Bulk Power Supply Department and to the management positions responsible for the areas audited within 30 days after completion of the audit.

6.6 Abnormal Occurrence Action

6.6.1 The following actions shall be taken in the event of an ABNORMAL OCCURRENCE:

a. The Commission shall be notified and/or a report submitted pursuant to the requirements of Specification 6.9.

b. Each Abnormal Occurrence Report submitted to the Commission shall be reviewed by the PNSC and submitted to the CNSC and the Manager of Nuclear Generation.

6.7 Safety Limit Violation

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

a. The provisions of 10 CFR 50.36 (c) (1) (i) shall be complied with immediately.

b. The Safety Limit violation shall be reported to the Commission, the Manager, Nuclear Generation and to the CNSC immediately.

c. A Safety Limit Violation Report shall be prepared. The report shall be reviewed by the PNSC. This report shall describe (1) applicable circumstances preceding the violation, (2) the effects of the violation upon facility components, systems of structures, and (3) corrective action taken to prevent recurrence.

d. The Safety Limit Violation Report shall be submitted to the Commission, the CNSC and the Manager, Nuclear Generation, within 10 days of the violation.

6.8 Procedures

6.8.1 Written procedures and administrative policies shall be established, implemented and maintained that meet or exceed the requirements and recommendations of Sections 5.1 and 5.3 of ANSI N18.7-1972 and Appendix "A" of USAEC Regulatory Guide 1.33 except as provided in 6.8.2 and 6.8.3 below.

6.8.2 Proposed Operating procedures, overall plant operating procedures, system descriptions, emergency procedures, fuel handling procedures, periodic test procedures, procedures for equipment maintenance which may affect nuclear safety, annunciator procedures and any other procedures determined by the Plant Manager to affect nuclear safety, shall be reviewed by the PNSC and approved by the Plant Manager. Prior to implementation, proposed changes to these procedures must also be reviewed and approved in this manner.

6.8.3 Temporary changes to procedures of 6.8.2 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 management staff, at least one of whom holds a Senior Reactor Operator's License on the unit affected.

c. The change is documented, reviewed by the PNSC and approved by the Plant Manager within 30 days of implementation.

6.9 Reporting Requirements

Routine and Abnormal Occurrence Reports

6.9.1 The information to be reported to the USAEC in addition to the reports required by Title 10, Chapter 1, Code of Federal Regulations, shall be in accordance with the Regulatory position of Regulatory Guide 1.16 (Revision 2) "Reporting of Operating Information - Appendix A Technical Specifications" with the following clarifications and exceptions:

(1) To be consistent with Appendix E of Regulatory Guide 1.16 (Revision 2), paragraph C.1.b. (2) shall be changed in part from "For each outage or forced reduction in power [4] of over five percent:" to read "For each outage or forced reduction in average daily power [4] level of greater than 20% for the preceding 24 hours:".

(2) In footnote 4 on page 1.16-2, the term "forced reduction in power" shall be changed to read "forced reduction in average daily power."

(3) To provide more meaningful information with respect to the effect of power level changes on fuel failure mechanisms, Paragraph C.1.b(4). (d) will be changed to read, "For PWR's a tabulation of primary coolant sample results for I-131, I-133, and I-135 following any thermal power increase of more than 15% of rated thermal power within a one-hour period, when the dose equivalent I-131 concentration during steady state power operation

is greater than 0.5 μCi/gram. Such samples should be obtained within four hours after the power change, and should be continued at four-hour intervals until the dose equivalent I-131 drops below 1 μCi/gram. In addition, samples should be obtained on the above basis whenever a significant increase in coolant activity occurs that is characteristic of sudden fuel failures."

(4) In paragraph C.1.b.(4).(e), "failed" fuel examinations, shall be changed to read "irradiated" fuel examinations.

(5) To be consistent with the remaining Technical Specifications, reference to dollars and cents of reactivity shall be deleted. A limit of 0.50% $\Delta k/k$ is a conservative value and will be used in place of $1.00 as listed below:

(a) In paragraph C.2.a.5.(a), "$1.00" shall be changed to read "0.50% $\Delta k/k$."

(b) In paragraph C.2.a.5.(a).(i), "$1.00" shall be changed to read "0.50% $\Delta k/k$."

(c) In paragraph C.2.a.5.(a).(ii), "$1.00" shall be changed to read "0.50% $\Delta k/k$."

(d) In paragraph C.2.a.5.(c), "50¢" shall be changed to read "0.25% $\Delta k/k$."

(6) To clarify paragraph C.2.a.(5)(b), it shall be changed from "A projection of a reactivity balance that would threaten the ability to attain required shutdown margin," to read "A reactivity balance that results in a less conservative shutdown margin than required."

(7) To ensure that all abnormal occurrence reports covered by paragraph C.2.b. receive an equal amount of time for preparation, this paragraph shall be changed in part from "Abnormal Occurrence reports submitted in accordance with this section may be compiled for each calendar month and submittal within ten days after the end of the month covered," to read

"Abnormal Occurrence reports submitted in accordance with this section shall be submitted within 30 days of the Abnormal Occurrence."

(8) Reportable items covered by paragraph C.2.c. are subjective in nature and are difficult to regulate effectively. The context of reporting requirements under this paragraph will remain as "should" be notified to the appropriate AEC Regulatory Operations Regional Office rather than "shall" be notified.

Special Reports

6.9.2 Special reports shall be submitted to the Director of the Regulatory Operations 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:

Area	Reference	Submittal Date
a. Containment Leak Rate Testing (i)	4.4	Upon completion of each test
b. Initial Containment Structural Test (ii)	4.4	Within three months following completion of test
c. Fuel Inspection	2.1	Upon completion of the inspection at second and third refueling outages
d. Inservice Inspection Evaluation	4.2	After five years of operation
e. Containment Sample Tendon Surveillance (iii)	4.4	Upon completion of the inspection at 5 and 25 years of operation
f. Post-operational Containment Structural Test (iii)	4.4	Upon completion of the test at 3 and 20 years of operation.

6.10 Record Retention

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

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

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

c. ABNORMAL OCCURRENCE Reports.

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 sealed source leak test and results.

i. 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 Final Safety Analysis Report.

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

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

h. Records of in-service inspections performed pursuant to these Technical Specifications.

i. Records of Quality Assurance activities required by the QA Manual.

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

k. Records of meetings of the PNSC and the CNSC.

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 1, 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 consecutive days does not exceed that which would result from inhaling such radioactive material for 40 hours at the pertinent concentration values provided in Appendix B, Table I, Column I, 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 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 Program

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. Repiratory 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 and 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 U. S. Bureau of Mines under its appropriate Approval Schedules as set forth in Table 6.12-1. Equipment not approved under U. S. 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 U. S. 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 Section 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.

6.13 High Radiation Area

6.13.1 In lieu of the "control device" or "alarm signal" required by paragraph 20.203(c)(2) of 10 CFR 20:

a. Each High Radiation Area in which the intensity of radiation is greater than 100 mrem/hr but less than 1000 mrem/hr shall be barricaded and conspicuously posted as a High Radiation Area and

entrance thereto shall be controlled by issuance of a Radiation Work Permit and any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continously indicates the radiation dose rate in the area.

b. Each High Radiation Area in which the intensity of radiation is greater than 1000 mrem/hr shall be subject to the provisions of 6.13.1(a) above, and 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 Foreman on duty.

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 APPROVAL SCHEDULES* FOR EQUIPMENT CAPABLE OF PROVIDING AT LEAST EQUIVALENT PROTECTION FACTORS *or schedule superseding for equipment of type listed
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. Airline 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)

TABLE 12-1 (Continued)

[1] See the following symbols:

- CF: continuous flow
- D: demand
- NP: negative pressure (i.e., negative phase during inhalation)
- PD: pressure demand (i.e., 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 U. S. 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.

[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 U. S. Bureau of Mines 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 U. S. Bureau of Mines in accordance with its applicable schedules.

NOTE 2: Radioactive contaminants for which the concentration values in Appendix B, Table 1 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.