

JUN 21 1973

Docket No. 50-220

Niagara Mohawk Power Corporation  
ATTN: Mr. Philip D. Raymond  
Vice President - Engineering  
300 Erie Boulevard West  
Syracuse, New York 13202

Change No. 8  
License No. DPR-17

Gentlemen:

Your letters dated August 10, 1972, November 22, 1972, and June 7, 1973, proposed changes to the Technical Specifications appended to Provisional Operating License No. DPR-17 for the Nine Mile Point Nuclear Station Unit No. 1. These proposed changes would revise Section 6.0, "Administrative Controls", of the Technical Specifications in its entirety to reflect changes in station organization and personnel and an updating of reporting requirements.

During our review of your request, we informed your staff that certain changes were necessary to meet regulatory requirements. These changes have been made.

We have reviewed your proposed changes, as modified, and have determined that they conform to Regulatory Guide Nos. 1.16 and 1.21. We conclude that the proposed changes do not present significant hazards considerations and that there is reasonable assurance that the health and safety of the public will not be endangered.

Pursuant to Section 50.59 of 10 CFR Part 50, the Technical Specifications appended to License No. DPR-17 are hereby changed by replacing pages 4 and 5 in Section 1.0, "Definitions", with the enclosed pages, and replacing Section 6.0, "Administrative Controls", in its entirety with the enclosed pages of 117 through 140.

Sincerely,

Original Signed by  
D. J. Skovholt

Donald J. Skovholt  
Assistant Director for  
Operating Reactors  
Directorate of Licensing

---

Enclosures and cc. See next page

JUN 21 1973

Enclosures:  
Revised pages stated  
above

cc w/enclosures:

J. Bruce MacDonald, Esquire  
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New York State Department of  
Commerce and Counsel to the  
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99 Washington Avenue  
Albany, New York 12210

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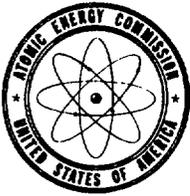
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Dr. William Seymour *w/ referenced incoming*  
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UNITED STATES  
ATOMIC ENERGY COMMISSION  
WASHINGTON, D.C. 20545

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Donald J. Skovholt  
Assistant Director for  
Operating Reactors  
Directorate of Licensing

Enclosures and cc: See next page

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Enclosures:  
Revised pages stated  
above

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120 E. Second Street  
Oswego, New York 13126

- a. All non-automatic primary containment isolation valves which are not required to be open for plant operation are closed.
- b. At least one door in the airlock is closed and sealed.
- c. All automatic containment isolation valves are operable or are secured in the closed position.
- d. All blind flanges and manways are closed.

#### 1.12 Reactor Building Integrity

Reactor building integrity means that the reactor building is closed and the following conditions are met:

- a. At least one door at each access opening is closed.
- b. The standby gas treatment system is operable.
- c. All reactor building ventilation system automatic isolation valves are operable or are secured in the closed position.

#### 1.13 Abnormal Occurrence

An abnormal occurrence is defined as:

- a. A Limiting Safety System Setting less conservative than the limiting setting established in the Technical Specifications,
- b. Violation of a Limiting Condition for Operation established in the Technical Specifications,
- c. An uncontrolled or unplanned release of radioactive material to the unrestricted area in excess of 10 times the radioactive effluent release limits established in Section 3.6 of the Technical Specifications.
- d. Failure of one or more components of an engineered safety feature or Station system that causes or threatens to cause the feature or system to be incapable of performing its intended function,

- e. Abnormal degradation of one of the several boundaries designed to contain the radioactive materials resulting from the fission process,
- f. Any uncontrolled or unanticipated change in reactivity of greater than the equivalent of one (1) percent delta k,
- g. Observed inadequacies in the implementation of administrative or procedural controls such that the inadequacy causes or threatens to cause the existence or development of an unsafe condition in connection with the operation of the Station, or
- h. Conditions arising from natural or offsite manmade event that affect or threaten to affect the safe operation of the Station.

#### 1.14 Core Alteration

A core alteration is the addition, removal, relocation, or other manual movement of fuel or controls in the reactor core. Control rod movement with the control rod drive hydraulic system is not considered to be a core alteration.

#### 1.15 Rated Flux

Rated flux is the neutron flux that corresponds to a steady-state power level of 1850 thermal megawatts. The use of the term 100 percent also refers to the 1850 thermal megawatt power level.

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 Organization, Review and Audit

- a. The General Superintendent, Nuclear Generation is directly responsible for the safe, orderly, and efficient operation of all generating units on the Nine Mile Point Site. As such, he is responsible for safeguarding the general public and Station personnel from radiation exposure and for adherence to all requirements of the Operating License and Technical Specifications. During periods when the General Superintendent is unavailable, he may delegate his responsibilities to either the Station Superintendent Nine Mile Point Nuclear Station or the Plant Superintendent James A. FitzPatrick Nuclear Power Plant.

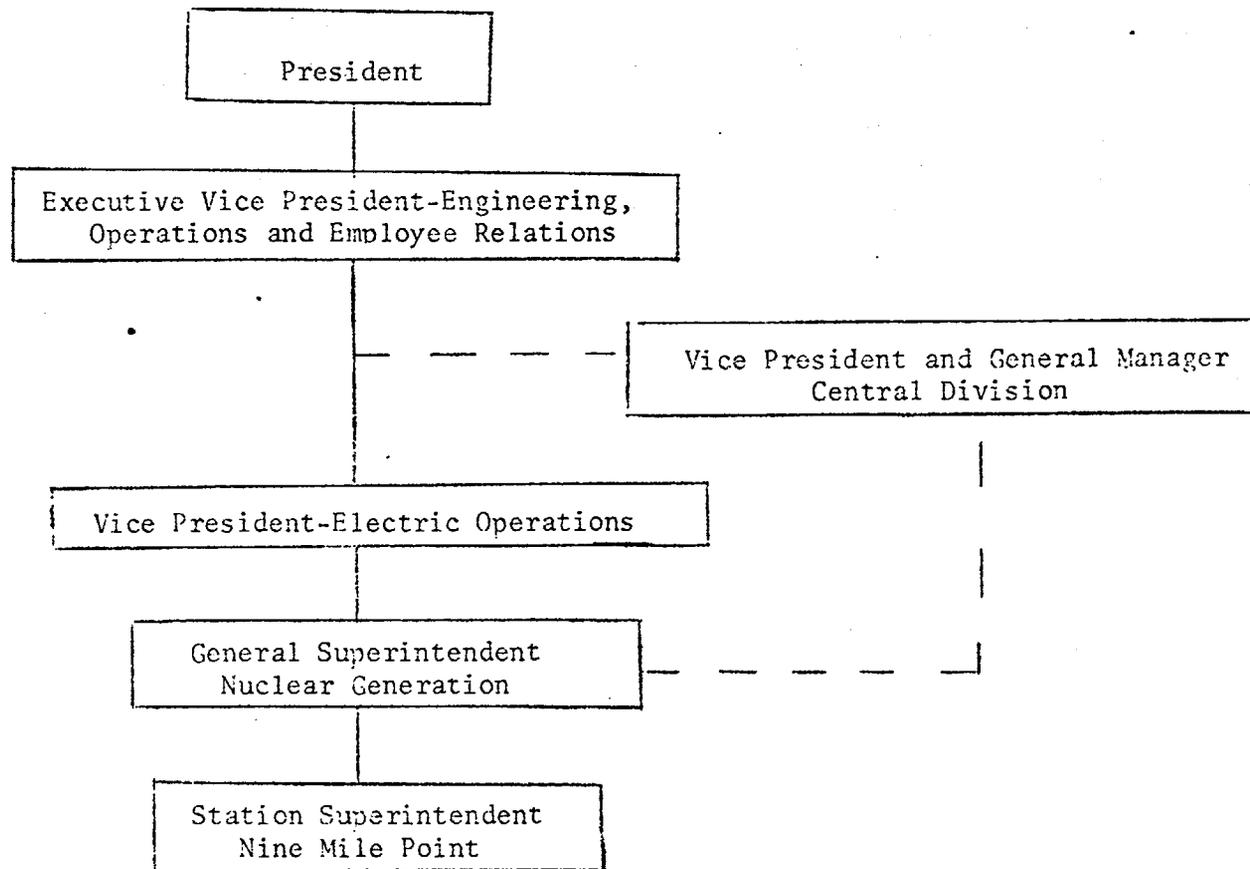
The General Superintendent, or designated alternate, shall report to and be responsible to the Vice President-Electric Operations, Niagara Mohawk Power Corporation, except on administrative matters which will be reported to the Vice President and General Manager-Central Division. The Niagara Mohawk management organization is shown in Figure 6.1.1. Other engineering departments within Niagara Mohawk Power Corporation not shown in Figure 6.1.1 will provide adequate technical support for the Nine Mile Point Nuclear Station.

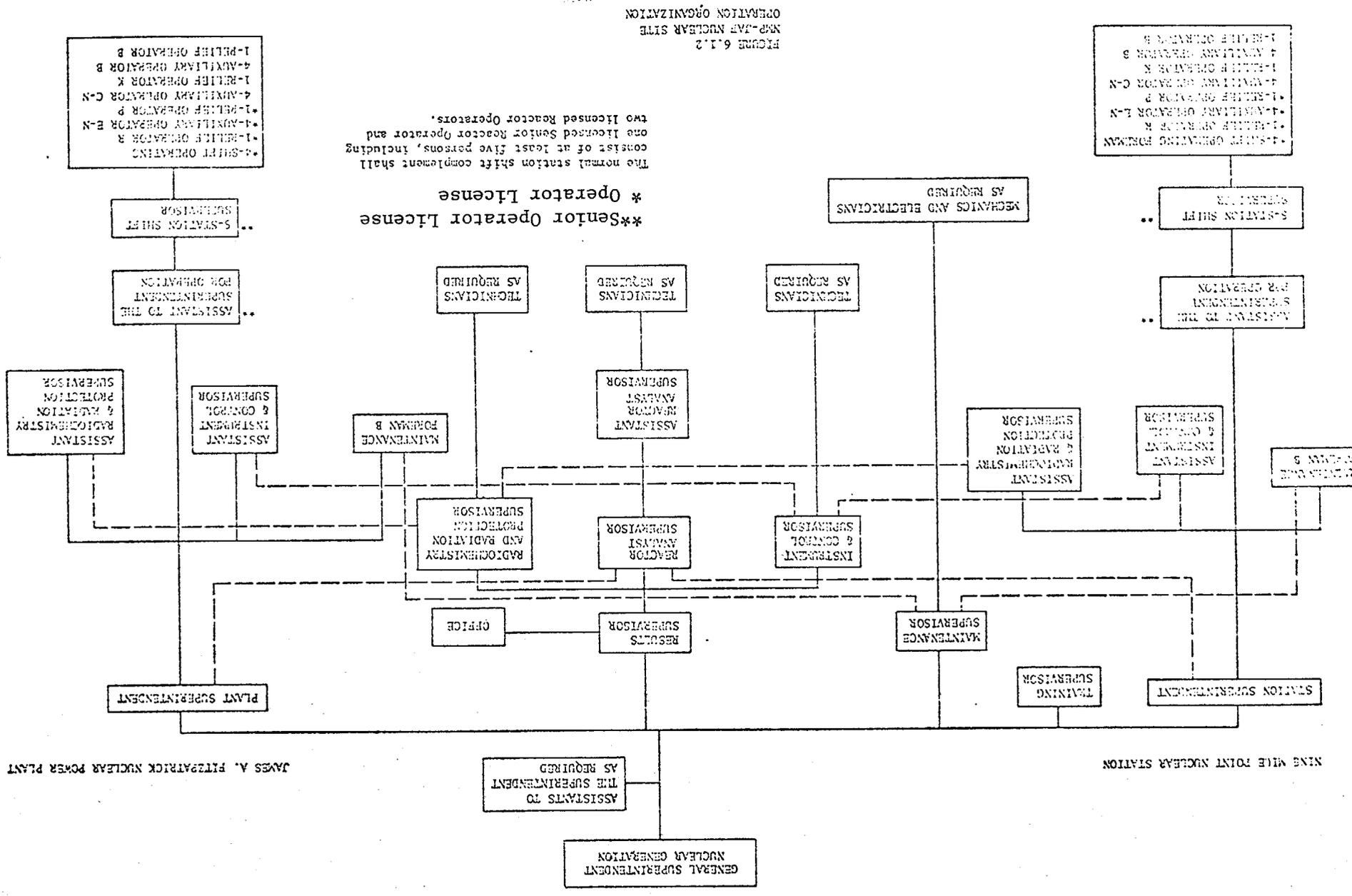
#### b. Station Organization

- (1) The Nine Mile Point Nuclear Site organization is shown in Figure 6.1.2.
- (2) Qualifications of the Nine Mile Point Station management and operating staff shall meet the minimum acceptable levels as described in ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel", dated March 8, 1971 unless specifically approved by the Commission.
- (3) Retraining and replacement training of Station personnel shall be in accordance with ANSI N18.1, "Selection and Training of Nuclear Power Plant Personnel", dated March 8, 1971 and, for licensed personnel, 10CFR Part 55.
- (4) Retraining shall be conducted at intervals not exceeding two years.
- (5) The functional organization for operation of the Station is shown on Figure 6.1.2. The type and number of Licensed Operators required shall be as follows:
  - (a) At least one Licensed Senior Operator shall be at the Station at all times there is fuel in the reactor vessel.

Figure 6.1.1

Nine Mile Point Nuclear Station  
Management Organization Chart





JAMES A. FITZPATRICK NUCLEAR POWER PLANT

**\*\*Senior Operator License \* Operator License**

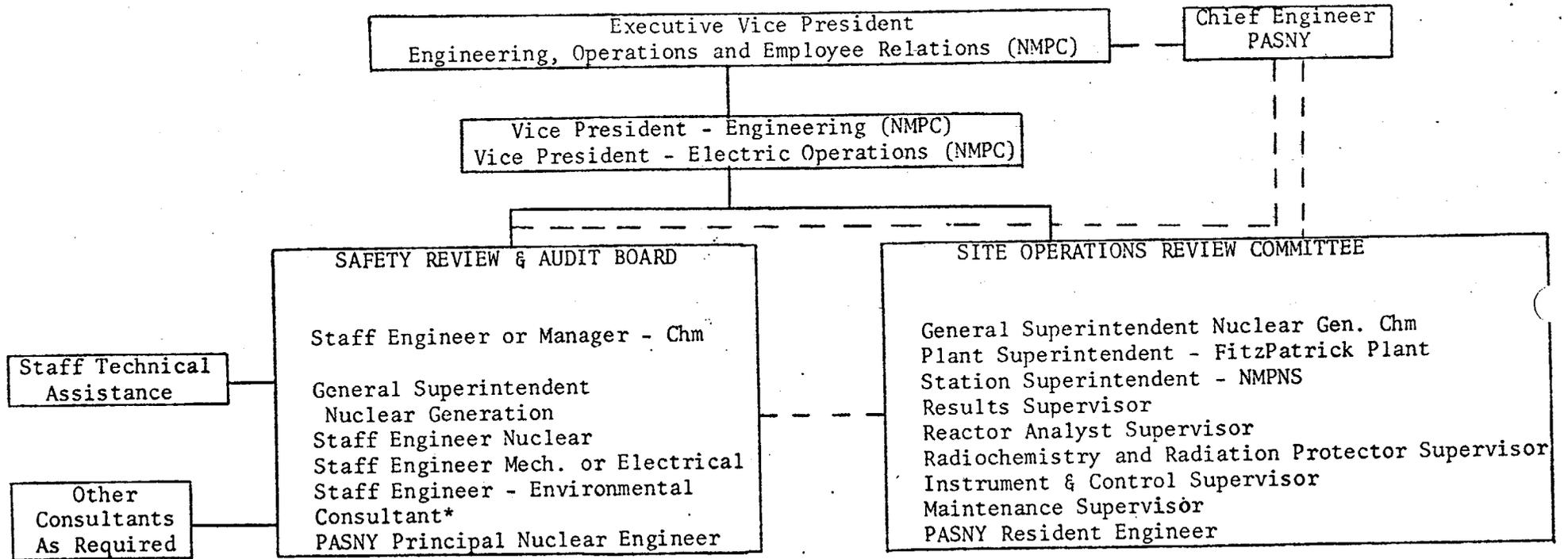
FIGURE 6.1.2  
NORMAL NUCLEAR SITE  
OPERATION ORGANIZATION

NINE MILE POINT NUCLEAR STATION

- (b) At least one Licensed Senior Operator or Licensed Operator shall be at the controls of the Station at all times there is fuel in the reactor vessel.
- (c) The minimum shift complement during shutdown conditions shall consist of at least three persons, including a shift supervisor or higher key supervisory person who holds a Senior Operator license and one Licensed Operator.
- (d) The minimum shift complement during operating conditions shall consist of at least five persons, including one Licensed Senior Operator and two Licensed Operators. Due to illness or absenteeism up to two hours is allowed to restore the shift crew to its normal complement.
- (e) Operating personnel shall be qualified to implement radiation control procedures.
- (6) For reactor operation longer than eight hours without the process computer, the operating forces shall be supplemented by at least one additional operator.
- (7) For all reactor startups except a scram recovery where the reason for the scram is both clearly understood and corrected, at least one additional operator shall be provided.
- (8) The stack monitor readout shall be monitored on the "flight panel" trend recorder or on a trend printout typewriter whenever the process computer is available.

c. Safety Review and Audit

- (1) The following safety groups as shown in Figure 6.1.3 are organized to ensure the Station is operated in a safe manner.
  - (a) Site Operations Review Committee
  - (b) Safety Review and Audit Board
- (2) The Vice President - Engineering or in his absence the Vice President - Electric Operations has the authority to perform the responsibilities listed in Figure 6.1.4.
- (3) The Site Operations Review Committee shall be composed of supervisors attached to the Nine Mile Point Station and the James A. Fitzpatrick Plant. The qualifications for members of the committee shall meet minimum acceptable levels as required by the positions for Section 6.1.b(2) above and given in Figure 6.1.3. In the absence of the Chairman, an acting Chairman who meets at least the minimum qualifications required for the Chairman shall be designated. The responsibilities and authorities of the committee shall be as shown in Figure 6.1.4.



\* At least one technical member from outside Niagara Mohawk Power Corporation organization for the first few years of Station Operation

FIGURE 6.1.3  
SAFETY ORGANIZATION  
NINE MILE POINT - JAMES A. FITZPATRICK SITE

Figure 6.1.4

Responsibilities and Authority of Safety Organization  
Nine Mile Point Nuclear Station

<u>Area</u>	<u>Site Operations Review Committee</u>	<u>Safety Review &amp; Audit Board</u>	<u>Vice President-Engineering Vice President-Electric Operations</u>
Station Safety	<ol style="list-style-type: none"> <li>1. Review &amp; approve all initial &amp; revised procedures covering normal &amp; emergency situations.</li> <li>2. Continuing analysis of Station operations to detect potential safety problems.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review any abnormalities arising during Station operation, Advise V.P. Engineering and V.P. - Electric Operations.</li> <li>2. Perform semiannual audits of Station operations, equipment performance, logs and procedures for compliance with license requirements &amp; tech. specs.</li> <li>3. Review &amp; approve test &amp; operating procedures which would significantly affect Station safety.</li> </ol>	<ol style="list-style-type: none"> <li>1. Provide overall management guidance.</li> <li>2. Review &amp; approve results of semiannual audits.</li> </ol>
Technical Specifications	<ol style="list-style-type: none"> <li>1. Recommend modifications.</li> <li>2. Analyze &amp; submit report to Safety Review &amp; Audit Board when a violation occurs.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review and analyze recommended changes. Prepare necessary papers and forward to V.P.-Engineering &amp; V.P.-Electric Operations</li> <li>2. Review &amp; evaluate tech. spec violations. Make specific recommendations to prevent recurrence. Submit safety analysis to V.P.-Engineering &amp; V.P.-Electric Operations.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review, approve, and formally submit to AEC recommended changes to tech. specs.</li> <li>2. Formally submit safety analysis report to AEC if a technical specification is violated.</li> </ol>

Figure 6.1.4 (cont.)

Responsibilities and Authority of Safety Organization  
Nine Mile Point Nuclear Station

<u>Area</u>	<u>Site Operations Review Committee</u>	<u>Safety Review &amp; Audit Board</u>	<u>Vice President-Engineering Vice President-Electric Operations</u>
Design Changes	<ol style="list-style-type: none"> <li>1. Recommend design changes &amp; request technical assistance needed to implement changes.</li>   <li>2. Review effect of design changes on tech. spec. requirements. Recommend modifications if needed.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review and approve requests for design changes- document reasons for change &amp; whether it involves an "unreviewed safety question". Determine if tech. spec. modification is warranted.</li>   <li>2. Provide technical assistance to Station as required.</li> </ol>	<ol style="list-style-type: none"> <li>1. Approve all major proposed changes. Formally submit to AEC all necessary reports and applications.</li> </ol>
Meeting Frequency	Monthly, and as required.	Quarterly, and as required.	As required.
Quorum	Chairman, or alternate, plus three members.	Chairman or alternate, plus three members.	
Records	Minutes shall be recorded of all meetings and copies forwarded to the Safety Review & Audit Board.	Minutes shall be recorded of all meetings and copies forwarded to the V.P.-Engineering, V.P.-Electric Operations and the Executive Vice President-Engineering, Operations and Employee Relations.	

(4) The Safety Review and Audit Board shall be composed of persons, including consultants, knowledgeable in at least one of the following disciplines:

- (a) nuclear power plant technology
- (b) reactor operations
- (c) utility operations
- (d) power plant design
- (e) reactor engineering
- (f) radiological safety
- (g) safety systems analysis
- (h) instrumentation and control
- (i) metallurgy

and any other appropriate discipline required by the unique characteristics of the facility, including at least one technical member outside the Niagara Mohawk Power Corporation organization for the first few years of Station operation. The Chairman or in the absence of the Chairman, an acting Chairman, shall be designated by the Vice President - Engineering or Vice President - Electric Operations. The responsibilities and authorities of the board shall be as shown in Figure 6.1.4.

(5) Each individual of the Safety Review and Audit Board shall possess a minimum of the described formal training and experience in at least one of the categories listed below:

(a) Nuclear Power Plant Technology

Graduate in engineering or a scientific discipline with 5 years experience in technical or technical management positions regarding the nuclear power design field and/or operation.

(b) Reactor Operations

Graduate in engineering or a scientific discipline with 5 years experience at least 3 of which have been in supervision or management of nuclear power plant operation.

(c) Utility Operations

Graduate in engineering or a scientific discipline with at least 5 years experience in supervision of utility operations.

(d) Power Plant Design

Graduate in engineering or a scientific discipline with at least 5 years of experience in technical or technical management positions involving nuclear power plant design at least 3 years of which relate to the system under audit and investigation.

(e) Reactor Engineering

Graduate in engineering or a scientific discipline with at least one year additional academic work in nuclear engineering and/or nuclear physics relating to nuclear power reactors. In addition, at least 5 years of experience in technical or technical management positions performing nuclear power plant engineering or technical support for operating nuclear power plants.

(f) Radiological Safety

Graduate in engineering or a scientific discipline and 5 years of experience as a technical member or supervisor of the radiation control organization of which at least 2 years have been directly associated with an operating nuclear facility.

(g) Safety Systems Analysis

Graduate in engineering or a scientific discipline with at least 5 years of experience in nuclear engineering, at least 3 years of which have been in technical or technical management positions that perform safety systems analyses of nuclear power plants.

(h) Instrumentation and Control

Graduate in engineering or a scientific discipline with at least 5 years of experience in instrumentation and control design, at least 3 years of which are in technical or technical management positions involving nuclear power plant instrumentation and controls.

(i) Metallurgy

Graduate in metallurgical engineering or in mechanical engineering with special training in metallurgy, and at least 5 years experience in technical or technical management positions in the metallurgical field, including at least 3 years experience related to nuclear power plants.

## 6.2 ACTION TO BE TAKEN IF A SAFETY LIMIT IS EXCEEDED

- a. If a safety limit is exceeded, the reactor shall be shut down and reactor operation shall only be resumed in accordance with the provisions of 10 CFR. 50.36 (c) (1) (i).
- b. An immediate report of each safety limit violation shall be made to the Station Superintendent Nuclear Generation, Vice President-Electric Operations and the Chairman of the Safety Review and Audit Board.
- c. The General Superintendent-Nuclear Generation shall immediately make an **Abnormal Occurrence Report** to the AEC as specified in the Section 6.6, "Reporting Requirements", in the event a safety limit is exceeded.
- d. The Site Operations Review Committee shall prepare a complete investigative report of each safety limit violation and include appropriate analyses and evaluations of (1) applicable circumstances preceding the occurrence, (2) effects of the occurrence upon facility components systems or structures, and (3) corrective action required to prevent recurrence. This report shall be submitted to the General Superintendent-Nuclear Generation, Vice President-Electric Operations, the Chairman of the Safety Review and Audit Board and the AEC.

## 6.3 ACTION TO BE TAKEN IN THE EVENT OF AN ABNORMAL OCCURRENCE

- a. Any abnormal occurrence shall be reported immediately to the Station Superintendent-Nuclear Generation and the Vice President-Electric Operations and reviewed by the Site Operations Review Committee.
- b. The Site Operations Review Committee shall prepare a separate report for each abnormal occurrence. This report shall include an evaluation of the cause of the occurrence, a record of the corrective action taken, and recommendations for appropriate action to prevent or reduce the probability of a recurrence.
- c. Copies of all such reports shall be submitted to the General Superintendent-Nuclear Generation, the Vice President-Electric Operations, and to the Chairman of the Safety Review and Audit Board for review.
- d. The Vice President-Electric Operations shall report the circumstances of any abnormal occurrence to the AEC as specified in Section 6.6, "Reporting Requirements."

#### 6.4 Radiation and Respiratory Protection Controls

Radiation control procedures shall be maintained and made available to all Station personnel. These procedures shall show permissible radiation exposure and shall be consistent with the requirements of 10 CFR 20. This radiation protection program shall be organized to meet the requirements of 10 CFR 20.

a. Pursuant to 10 CFR 20.103(c)(1) and (3), allowance can be made for the use of respiratory protective equipment in conjunction with activities authorized by the operating licenses for this excess of the limits specified in Appendix B, Table I, Column 1 of 10 CFR 20, subject to the following conditions and limitations:

(1) The limits provided in Section 20.103(a) and (b) are not exceeded.

(2) 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 7 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 1 of 10 CFR 20.

(3) For radioactive materials designated "Sub" in the "Isotope" column of Appendix B, Table I, Column 1 of 10 CFR 20, the concentration value specified is 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 Paragraph 20.101. These materials shall be subject to applicable process and other engineering controls.

b. 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:

(1) The limits specified in paragraph 6.4.a above are not exceeded.

(2) Respiratory protective equipment is selected and used so that the peak concentrations of airborne radioactive material inhaled by an individual wearing the equipment does not exceed the pertinent concentration values specified in Appendix B, Table I, Column 1 of 10 CFR 20. For the purpose 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 6.4.1, appended to this specification, for the respiratory protective equipment worn. If the intake of radioactivity is later determined by other measurements to have been different from that initially estimated, the later quantity shall be used in evaluating the exposures.

- (3) 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.
- (4) 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:
  - (a) Air sampling and other surveys sufficient to identify the hazard, to evaluate individual exposures, to permit proper selection of respiratory protective equipment.
  - (b) Written procedures to assure proper selection, supervision, and training of personnel using such protective equipment.
  - (c) Written procedures to assure the adequate fitting of respirators, and the testing of respiratory protective equipment for operability immediately prior to use.
  - (d) Written procedures for maintenance to assure full effectiveness of respiratory protective equipment, including issuance, cleaning and decontamination, inspection, repair, and storage.
  - (e) 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.
  - (f) Bioassays and/or whole body counts of individuals (and other surveys, as appropriate) to evaluate individual exposures and to assess protection actually provided.
- (5) The licensee uses equipment approved by the U. S. Bureau of Mines under its appropriate Approval Schedules as set forth in Table 6.4.1 below. Equipment not approved under U. S. Bureau of Mines Approval Schedules may 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 6.4.1 below.

TABLE 6.4.1  
PROTECTION FACTORS FOR RESPIRATORS

DESCRIPTION	MODES <sup>1/</sup>	PROTECTION FACTORS <sup>2/</sup>		GUIDES TO SELECTION OF EQUIPMENT
		PARTICULATES AND VAPORS AND GASES EXCEPT TRITIUM OXIDE <sup>3/</sup>		BUREAU OF MINES APPROVAL SCHEDULES* FOR EQUIPMENT CAPABLE OF PROVIDING AT LEAST EQUIVALENT PROTECTION FACTORS *or schedule superseding for equipment of type listed
<u>I. AIR-PURIFYING RESPIRATORS</u>				
Facepiece, half-mask <u>4/</u> <u>7/</u>	NP	5	21B 30 CFR § 14.4(b)(4)	
Facepiece, full <u>7/</u>	NP	100	21B 30 CFR § 14.4(b)(5); 14F 30 CFR § 13	
<u>II. ATMOSPHERE-SUPPLYING RESPIRATOR</u>				
1. <u>Airline respirator</u>				
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 <u>7/</u>	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	<u>5/</u>	<u>6/</u>	
Suit	CF	<u>5/</u>	<u>6/</u>	
2. Self-contained breathing apparatus (SCBA)				
Facepiece, full <u>7/</u>	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	1,000	13E 30 CFR § 11.4(b)(1)	
<u>III. COMBINATION RESPIRATOR</u>				
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)

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 face-piece) 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 I of 10 CFR Part 20 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.

- (6) Unless otherwise authorized by the Commission, the licensee does not assign protection factors in excess of those specified in Table 6.4.1 below in selecting and using respiratory protective equipment.
- c. These specifications with respect to the provisions of paragraph 20.103 shall be superceded by adoption of proposed changes to 10 CFR 20, Section 20.103, which would make this specification unnecessary.
- d. Pursuant to 10 CFR 20.203(c)(5), access to high radiation areas, such as loft spaces above false ceilings or the upper volumes of high rooms which may be reached only by ladders or climbing structures, shall be posted with appropriate signs prohibiting entry except by specific authority of the Station Shift Supervisor.

#### 6.5 Station Operating Procedures

The Station shall be operated and maintained in accordance with approved procedures. All procedures and changes thereto covering both normal operating and emergency procedures shall be reviewed by the Site Operations Review Committee and approved for issuance by the Reactor Analyst Supervisor, Radiochemistry and Radiation Protection Supervisor, and Station Superintendent. The initial Station operating procedures shall also be reviewed by the nuclear steam supply contractor and the Safety Review and Audit Board.

The following types of detailed procedures shall be maintained.

- a. Normal startup, operation, and shutdown procedures for the major Station components and systems. These procedures shall include applicable checkoff lists and instructions.
- b. Procedures which delineate the operator action required in the event of specific Station malfunctions and emergencies.
- c. Surveillance and testing as specified by the Surveillance Requirements of these specifications.
- d. A site emergency plan which shall include procedures to guide the behavior and action of all personnel in the event of emergency conditions, including the release of radioactive materials. Semiannual nuclear incident drills shall be conducted to assure that all Station personnel are familiar with the emergency plan. All the procedures shall be prefaced with the applicable technical specification limitations or the 10 CFR 20 regulations. The emergency plan and the results of the drills shall be reviewed annually by the Safety Review and Audit Board.

- e. Refueling procedures.
- f. System markup and tagging procedures assuring safety to personnel, equipment and Station during maintenance; and instruction books and/or maintenance manuals.
- g. Procedures for review and approval of procedure changes and for temporary operating procedures.

#### 6.6 Reporting Requirements

The following information shall be submitted to the USAEC in addition to the reports required by Title 10, Code of Federal Regulations.

##### a. Operation Reports

Operations reports shall be submitted in writing to the Director of Licensing, USAEC, Washington, D. C. 20545.

- (1) Startup Report - A summary report of facility startup and power escalation testing shall be submitted following receipt of operating licenses, following amendments to the licenses involving a planned increase in power level, following the installation of fuel that has a different design and/or has been manufactured by a different fuel supplier, or following modifications to an extent that the nuclear, thermal, or hydraulic performance of the unit may be significantly altered. The report shall include a description of the measured values of the operating conditions or characteristics obtained during the test program and a comparison with design predictions and specifications. Any corrective actions that were required to obtain satisfactory operation shall be described. Startup reports shall be submitted within 30 days following commencement of commercial power operation, i.e., initially following synchronization of the turbo-generator to produce commercial power or resumption of commercial power operation.
- (2) Semiannual Operating Report - A report covering a six-month period shall be submitted within 60 days after January 1, and July 1 of each year and include the following:

##### (a) Operations Summary

A summary of operating experience occurring during the reporting period that relates to safe operation of the facility, including a summary of:

- 1. changes in facility design,

2. performance characteristics (e.g., equipment and fuel performance),
3. changes in operating methods which were necessitated by 1 and 2 or which otherwise were required to improve the safety of facility operations,
4. results of surveillance tests and inspections required by these technical specifications,
5. the results of any periodic containment leak rate tests performed during the reporting period,
6. a brief summary of those changes, tests, and experiments requiring authorization from the Commission pursuant to 10 CFR 50.59(a), and
7. changes in the plant operating staff for those positions which are designated as key supervisory or technical personnel.

(b) Power Generation

A summary of power generated during the reporting period including:

1. gross thermal power generation (in MWh),
2. gross electrical power generated (in MWh),
3. net electrical power generated (in MWh),
4. number of hours the reactor was critical,
5. number of hours the generator was on-line, and
6. histogram of thermal power vs time.

(c) Shutdowns

Descriptive material covering all outages occurring during the reporting period. For each outage, information shall be provided on:

1. the cause of the outage,

2. the method of shutting down the reactor, e.g., trip, automatic <sup>down, or</sup> shutdown, or manually controlled deliberate shutdown,
3. duration of the outage (in hours),
4. unit status during the outage; e.g., cold shutdown or hot shutdown, <sup>and</sup> and
5. corrective action taken to prevent repetition, if appropriate.

(d) Maintenance

A discussion of safety related maintenance (excluding preventative maintenance) performed during the reporting period on systems and components [Safety related is defined in ANSI 18.7-1972 (ANS-3.2, November 2, 1972).] and on systems and components that reduce or prevent the release of radioactive material to the environs. For any malfunctions for which corrective maintenance was required, information shall be provided on:

1. the system or component involved,
2. the cause of the malfunction,
3. the results and effect on safe operation,
4. corrective action taken to prevent repetition, and
5. special precautions taken to provide for reactor safety during repair.

(e) Changes, Tests and Experiments

A brief description and the summary of the safety evaluation for those changes, tests, and experiments which were carried out without prior Commission approval, pursuant to the requirements of Subsection 50.59(b) of the Commission's regulations.

(f) Radioactive Effluent Releases

A statement of the quantities of radioactive effluents releases from the plant with data summarized on a monthly basis following a standard format as issued by the AEC.

1. Gaseous Effluents

a. Gross Radioactivity Releases

- (1) Total gross radioactivity (in curies), primarily noble and activation gases.
- (2) Maximum gross radioactivity release rate during any one-hour period.
- (3) Total gross radioactivity (in curies) by nuclide release, based on representative isotopic analyses performed.
- (4) Percent of technical specification limit.

b. Iodine Releases

- (1) Total iodine radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
- (2) Percent of technical specification limit for I-131 released.

c. Particulate Releases

- (1) Total gross radioactivity ( $\beta, \gamma$ ) released (in curies) excluding background radioactivity.
- (2) Gross alpha radioactivity released (in curies) excluding background radioactivity.
- (3) Total gross radioactivity (in curies) of nuclides with half-lives greater than eight days.
- (4) Percent of technical specification limit for particulate radioactivity with half-lives greater than eight days.

2. Liquid Effluents

- a. Total gross radioactivity ( $\beta, \gamma$ ) released (in curies) excluding tritium and average concentration released to the unrestricted area.
- b. The maximum concentration of gross radioactivity ( $\beta, \gamma$ ) released to the unrestricted area (averaged over the period of release).

- c. Total tritium and total alpha radioactivity (in curies) released and average concentration released to the unrestricted area.
- d. Total dissolved gas radioactivity (in curies) and average concentration released to the unrestricted area.
- e. Total volume (in liters) of liquid waste released.
- f. Total volume (in liters) of dilution water used prior to release from the restricted area.
- g. Total gross radioactivity (in curies) by nuclide released, based on representative isotopic analyses performed.
- h. Percent of technical specification limit for total radioactivity.

(g) Solid Waste

1. The total amount of solid waste shipped (in cubic feet).
2. The total estimated radioactivity (in curies) involved.
3. Disposition, including date and destination, if shipped offsite.

(h) Environmental Monitoring

1. For each medium sampled during the reporting period, e.g., lakebottom, surface water, soil, 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, and
  - 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 as determined by the Station process effluent monitoring program indicate the likelihood of public intakes in excess of 3% of those that could result from continuous 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.

(i) Occupational Personnel Radiation Exposure

Tabulate the number of personnel exposures for facility operations personnel (permanent and temporary) in the following exposure increments for the reporting period:

less than 100 mRem, 100 - 500 mRem, 500 - 1250 mRem, 1250 - 2500 mRem, greater than 2500 mRem. Tabulate the number of personnel receiving more than 500 mRem exposure in the reporting period according to duty function, i.e. routine plant surveillance and inspection (regular duty), routine plant maintenance, special plant maintenance (describe maintenance), routine refueling operation, special refueling (describe operation), and other job related exposures. Annually tabulate the number of personnel receiving more than 2500 mRem and report the major cause(s).

b. Non-Routine Reports

- (1) Abnormal Occurrence Reports - Notification shall be made within 24 hours by telephone and telegraph to the Director of the Regional Regulatory Operations Office (cc to the Director of Licensing) followed by a written report within 10 days to the Director of Licensing (cc to the Director of the Regional Regulatory Operations Office) in the event of the abnormal occurrences as defined in Section 1.0.

The written report on these abnormal occurrences, and to the extent possible, the preliminary telephone and telegraph\* notification shall: (a) describe, analyze, and evaluate safety implications, (b) outline the measures taken to assure that the cause of the condition is determined, (c) indicate the corrective action (including any changes made to the procedures and to the quality assurance program) taken to prevent repetition of the occurrence and of similar occurrences involving similar components or systems, and (d) evaluate the safety implications of the incident in light of the cumulative experience obtained from the record of previous failures and malfunctions of similar systems and components.

\* Telegraph notification may be sent on the next working day in the event of an abnormal occurrence during a weekend or holiday period.

(2) Unusual Events - A written report shall be forwarded within 30 days to the Director of Licensing and to the Director of the Regional Regulatory Operations Office in the event of:

- (a) Discovery of any substantial errors in the transient or accident analysis, or in the methods used for such analyses, as described in the Safety Analysis Report or in the bases for the Technical Specifications.
- (b) Discovery of any substantial variance from performance specifications contained in the Technical Specifications or in the Safety Analysis Report.
- (c) Discovery of any condition involving a possible single failure which, for a system designed against assumed single failures, could result in a loss of the capability of the system to perform its safety function.

c. Special Reports

Special reports shall be submitted in writing within 90 days to the Director of Licensing, USAEC, Washington, D. C. 20545.

- (1) Primary and Secondary Containment Leak Rate Tests - Each integrated leak rate test of the primary containment shall be the subject of a summary technical report including results of the local leak rate tests since the last report. The report as described in the AEC Guide on Containment Testing dated January 16, 1966, shall include data, analysis, and interpretations of the results which demonstrate compliance in meeting the specified leak rate limits.

Each integrated leak rate test of the secondary containment shall be the subject of a summary technical report. This report should include data on the wind speed, wind direction, outside and inside temperatures during the test, concurrent reactor building pressure, and emergency ventilation flow rate. The report shall also include analyses and interpretations of these data which demonstrate compliance with the specified leak rate limits.

6.7 Station Records

- a. Records and/or logs relative to the following items shall be kept in a manner convenient for review and shall be retained for at least five years:
- (1) Records of normal plant operating, including power levels and periods of operation at each power level.
  - (2) Records of principal maintenance activities, including inspection and repair of principal items of equipment pertaining to nuclear safety.
  - (3) Records of abnormal occurrences.

- (4) Records of periodic checks, inspection and/or calibrations performed to verify that surveillance requirements are being met.
  - (5) Records of any special reactor test or experiments.
  - (6) Records of changes made in the Operating Procedures.
  - (7) Records of radioactive shipments.
- b. Records and/or logs relative to the following items shall be recorded in a manner convenient for review and shall be retained for the life of the plant:
- (1) Records of substitution or replacement of principal items of equipment pertaining to nuclear safety.
  - (2) Records of changes and drawing changes made to the plant as it is described in the Safety Analysis Report.
  - (3) Records of plant radiation and contamination surveys.
  - (4) Records of new and spent fuel inventory, transfers of fuel, and assembly histories.
  - (5) Records of offsite environmental monitoring surveys.
  - (6) Records of radioactivity in liquid and gaseous wastes released to the environment.
  - (7) Records of radiation exposure for all plant personnel, including all contractors and visitors to the plant in accordance with 10 CFR 20.
  - (8) Records of transient or operational cycling for those plant components that have been designed to operate safely for a limited number of transients or operational cycles.
  - (9) Records of inservice inspections of the reactor coolant system.
  - (10) Minutes of meetings of the Site Operations Review Committee and the Safety Review and Audit Board.