

UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER AND LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

DOCKET NO. 50-289

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

AMENDMENT TO FACILITY OPERATING LICENSE

Amendment No. 11  
License No. DPR-50

1. The Nuclear Regulatory Commission (the Commission) has found that:
  - A. The application for amendment by Metropolitan Edison Company, Jersey Central Power and Light Company, and Pennsylvania Electric Company (the licensees) dated December 23, 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. The facility will operate in conformity with the application, the provisions of the Act, and the rules and regulations of the Commission;
  - C. There is reasonable assurance (i) that the activities authorized by this amendment can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the Commission's regulations;
  - D. The issuance of this amendment will not be inimical to the common defense and security or to the health and safety of the public; and
  - E. An environmental statement or negative declaration need not be prepared in connection with the issuance of this amendment.
2. Accordingly, the license is amended by a change to the Technical Specifications as indicated in the attachment to this license amendment.

3. This license amendment becomes effective 30 days after the date of its issuance.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in cursive script, appearing to read "Robert W. Reid".

Robert W. Reid, Chief  
Operating Reactors Branch #4  
Division of Reactor Licensing

Attachment:  
Changes to the  
Technical Specifications

Date of Issuance: JAN 27 1976

ATTACHMENT TO LICENSE AMENDMENT NO. 11

FACILITY OPERATING LICENSE NO. DPR-50

DOCKET NO. 50-289

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## 1.6 POWER DISTRIBUTION

### 1.6.1 QUADRANT POWER TILT

Quadrant power tilt is defined by the following equation and is expressed in percent.

$$100 \left( \frac{\text{Power in any core quadrant}}{\text{Average power of all quadrants}} - 1 \right)$$

The power in any quadrant is determined from the power range channel displayed on the console for that quadrant. The average power is determined from an average of the outputs of the power range channels. If one of the power range channels is out of service, the remaining three operable power range channels or the incore detectors will be used to determine the average power. The quadrant power tilt limits as a function of power are stated in Specification 3.5.2.4.

### 1.6.2 REACTOR POWER IMBALANCE

Reactor power imbalance is the power in the top half of the core minus the power in the bottom half of the core expressed as a percentage of rated power. Imbalance is monitored continuously by the RPS using input from the power range channels. Imbalance limits are defined in Specification 2.1 and imbalance set-points are defined in Specification 2.3.

## 1.7 CONTAINMENT INTEGRITY

Containment integrity exists when the following conditions are satisfied:

- a. The equipment hatch is closed and sealed and both doors of the personnel hatch and emergency hatch are closed and sealed except as in "b" below.
- b. At least one door on each of the personnel hatch and emergency hatch is closed and sealed during refueling or personnel passage through these hatches.
- c. All non-automatic containment isolation valves and blind flanges are closed as required by the "Containment Integrity Check List" attached to the operating procedure "Containment Integrity and Access Limits."
- d. All automatic containment isolation valves are operable or locked closed.
- e. The containment leakage determined at the last testing interval satisfies Specification 4.4.1.

## 6.0 ADMINISTRATIVE CONTROLS

### 6.1 RESPONSIBILITY

6.1.1.a. The Unit Superintendent shall be responsible for the overall safety of plant operations and shall ensure that:

1. All proposed changes to procedures, equipment, or systems are evaluated to determine if they constitute a change to the facility or procedures as described in the Final Safety Analysis Report.
2. All proposed changes to procedures, equipment, or systems which constitute a change of the facility or procedures as described in the Final Safety Analysis Report are evaluated to determine that they do not involve an unreviewed safety question as defined in paragraph 50.59 (c), Part 50, Title 10, Code of Federal Regulations.
3. All proposed tests and experiments, not described in the Final Safety Analysis Report, are evaluated to determine that they do not involve an unreviewed safety question as defined in paragraph 50.59 (c), Part 50, Title 10, Code of Federal Regulations.
4. Records are kept: a) of changes to procedures, equipment or systems completed under the provisions of paragraph 50.59 (b), Part 50, Title 10, Code of Federal Regulations; b) of tests and experiments conducted in accordance with those provisions; and c) of the written safety evaluation used as a basis for determining that such changes, tests and experiments do not involve an unreviewed safety question.
5. Copies of evaluations conducted pursuant to 6.1.1.a.2 and 6.1.1.a.3 above are forwarded to the Plant Operations Review Committee, the Manager-Generation Engineering, and the General Office Review Board Secretary.

b. The Unit Superintendent shall have the authority to:

1. Make a determination that proposed changes to procedures, equipment, or systems do not involve a change to the procedures or facility as described in the Final Safety Analysis Report.
2. Make a preliminary determination that proposed changes to procedures, equipment or systems as described in the Final Safety Analysis Report, or that proposed tests or experiments not described in the Final Safety Analysis Report do not constitute an unreviewed safety question; however, such a determination must be based upon a formal written evaluation.
3. Direct the Plant Operations Review Committee to review:
  - a. Evaluations of proposed changes to procedures, equipment or systems;

b. Proposed tests and experiments,

and to make an initial determination that "a" and "b" above do not constitute an unreviewed safety question.

NOTE: The Unit Superintendent shall report directly to the Manager-Generation Operations-Nuclear and is responsible to him for the administration, operation and maintainance of Three Mile Island Nuclear Station Unit 1.

6.2 ORGANIZATION

OFFSITE

6.2.1 The organization of the Met-Ed Corporate Technical Support staff for Station management and technical support shall be functionally as shown in Figure 6-1.

FACILITY STAFF

6.2.2 The organization within the station for operations, technical support, and maintenance shall be functionally as shown in Figure 12-1 of the Final Safety Analysis Report.

- a. Each on-duty shift shall, as a minimum, be composed of the following shift crew:

Shift Supervisor or Shift Foreman (See Notes 1 & 3)	1
Control Room Operator (See Notes 2 & 3)	2
Auxiliary Operator (See Note 3)	2
Men/Shift	<u>5</u>

- b. At least two licensed Reactor Operators shall be at the station, one of whom shall be in the Control Room at all times when there is fuel in the reactor vessel. One of these operators shall hold a Senior Reactor Operator's License.
- c. At least two licensed Reactor Operators shall be present in the Control Room during reactor start-up, scheduled reactor shutdown and during recovery from reactor trips.
- d. At least one member of each operating shift shall be qualified to implement necessary radiation protection procedures.
- e. A licensed Senior Reactor Operator with no other concurrent operational duties shall directly supervise: (a) irradiated fuel handling and transfer activities onsite, and (b) all unirradiated fuel handling and transfer activities to and from the Reactor Vessel.

NOTES:

1. The Shift Supervisor, or the Shift Foreman if a Shift Supervisor is not assigned, shall have an NRC Senior Reactor Operator's License.

2. Only one licensed Control Room Operator shall be required per shift during cold shutdown or refueling operations.
3. Shift Supervisor, Control Room Operator and Auxiliary Operator refer to functions that are to be performed and do not refer to the title of the individual. These functions may be performed by any individual possessing the necessary licenses and qualifications.

### 6.3 STATION STAFF QUALIFICATIONS

- 6.3.1 Comprising the station staff shall be supervisory and professional personnel encompassing the qualifications described in Section 4 of ANSI N18.1- 1971 , "Selection and Training of Nuclear Power Plant Personnel."

### 6.4 TRAINING

- 6.4.1 A retraining and replacement training program for the facility staff shall be maintained under the direction of the Supervisor of Training 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 OPERATIONS REVIEW COMMITTEE (PORC)

##### FUNCTION

- 6.5.1.1 The Plant Operations Review Committee shall function to advise the Unit Superintendent on all matters related to nuclear safety.

##### COMPOSITION

- 6.5.1.2 The Plant Operations Review Committee shall be composed of:

- a) Unit Superintendent
- b) Supervisor of Operations
- c) Supervisor of Maintenance
- d) Unit Electrical Engineer
- e) Unit Mechanical Engineer
- f) Unit Nuclear Engineer
- g) Unit Instrument and Control Engineer
- h) Supervisor of Radiation Protection and Chemistry
- i) PORC Chairman
- j) Other plant engineers assigned by the Unit Superintendent

The Unit Superintendent shall designate the members, the Chairman, and the Vice Chairman of the Plant Operations Review Committee.

##### ALTERNATES

- 6.5.1.3 Alternate members shall be appointed in writing by the Unit Superintendent to serve on a temporary basis. For purposes of this specification, a designated alternate shall be considered to have the

same responsibility and authority as a member when attending a committee meeting in place of a member.

#### MEETING FREQUENCY

- 6.5.1.4 The Plant Operations Review Committee shall meet as required on call by the Unit Superintendent, the Chairman of the Committee or the General Office Review Board, but not less frequently than once per month.

#### QUORUM

- 6.5.1.5 A quorum shall consist of four members, at least one of whom shall be either the Chairman or Vice Chairman of the Committee. A quorum shall not take credit for more than one alternate member.

#### RESPONSIBILITIES

- 6.5.1.6 The Plant Operations Review Committee shall be responsible for:

- a. 1) Review of procedures and changes thereto in accordance with the requirements of Section 6.8, and
- 2) review of evaluations of proposed changes to procedures to make an initial determination as to whether or not such proposed changes involve an unreviewed safety question when so directed by the Unit Superintendent.

NOTE: Initial determinations that proposed changes to procedures, equipment or systems, and tests and experiments did not involve an unreviewed safety question shall be subsequently reviewed by the Manager-Generation Engineering to verify that the initial determination was correct. This review by the Manager-Generation Engineering shall be documented.

- b. 1) Review of proposed tests and experiments, when directed by the Unit Superintendent, to make an initial determination as to whether or not such tests or experiments may involve an unreviewed safety question as defined in 50.59 (c), Part 50, Title 10, Code of Federal Regulations, and
- 2) review of the results of all tests and experiments conducted pursuant to paragraph 50.59 (a), Part 50, Title 10, Code of Federal Regulations.
- c. Review of proposed changes to these Technical Specifications or licenses.
- d. Review of all proposed changes or modifications to plant systems or equipment that affect nuclear safety if directed by the Unit Superintendent.
- e. 1) Review of reportable occurrences under Section 6.6 and any violations of these Technical Specifications or Operating License DPR-50, including a report to the Met-Ed Manager-Generation Operations-Nuclear to the Chairman of General Office Review Board, and to the Unit Superintendent covering evaluation and recommendations to prevent recurrence, and

- 2) review of violations of applicable federal statutes, codes, regulations and internal station procedures and instructions having nuclear safety significance.
- f. Evaluating plant operations for and providing assistance in planning future activities to the Unit Superintendent.
- g. Perform special reviews and investigations and submit reports thereon as directed by the Manager-Generation Division, the Manager-Generation Operations-Nuclear or Unit Superintendent.
- h. Review of the Plant Security Plan and implementing procedures as they relate to nuclear safety and shall submit recommended changes to the Unit Superintendent.
- i. Review of the Emergency Plan and implementing procedures and shall submit recommended changes to the Unit Superintendent.

#### AUTHORITY

6.5.1.7 The Plant Operations Review Committee shall:

- a. Recommend to the Unit Superintendent written approval or disapproval of items considered under 6.5.1.6(a) through (d) above.
- b. If requested by the Unit Superintendent for 6.5.1.6(a) through (d) and at all times for 6.5.1.6(e), render determinations with regard to whether or not each item considered constitutes an unreviewed safety question.
- c. Provide immediate written notification to the Manager-Generation Operations Nuclear of any unresolvable disagreements between PORC and the Unit Superintendent as they may relate to nuclear safety; however, the Unit Superintendent shall have responsibility for resolution of such disagreements pursuant to 6.1.1 above.

*6.5.2 Tech. Support Staff*  
*Suppl. Review*

Note: The Plant Operations Review Committee shall be advisory to the Unit Superintendent. Nothing herein shall relieve the Unit Superintendent of his responsibility for overall safety of plant operations including taking immediate emergency actions.

#### RECORDS

6.5.1.8 The Plant Operations Review Committee shall maintain at the station written minutes of each meeting and copies shall be provided to the Unit Superintendent, Manager-Generation Operations-Nuclear, Manager-Generation Engineering, and the General Office Review Board Secretary.

#### 6.5.2.A MET-ED CORPORATE TECHNICAL SUPPORT STAFF

##### ORGANIZATION

6.5.2.A.1 The organization of the Met-Ed Corporate Technical Support Staff is as shown on Figure 6-1 and consists of the Manager-Generation Operations Nuclear, Manager-Generation

Engineering, Manager-Generation Maintenance, Manager-Operational Quality Assurance and their staff. The Corporate Technical Support Staff shall collectively have the competence required by ANSI N18.7-1972, Standard for Administrative Controls for Nuclear Power Plants, Section 4.2.2 or the Manager-Generation Division shall insure that deficiencies can be readily compensated for through the use of outside groups such as GPU Service Corporation staff, consultants, or vendors.

#### RESPONSIBILITY

6.5.2.A.2 In its concern with the more detailed issues (rather than the broad issues) of nuclear safety, it shall be the responsibility of the Met-Ed Corporate Technical Support Staff to:

- a. Review evaluations of proposed changes to procedures, equipment or systems and tests and experiments (including their results) which were accomplished pursuant to 6.1.1.a.2 and 6.1.1.a.3 to verify that an unreviewed safety question was not involved.
- b. Control of design changes to equipment or systems having nuclear safety significance as defined in Section 2.2.19 of ANSI N18.7-1972, including verifying that such proposed changes do not constitute unreviewed safety questions or Technical Specification changes.
- c. Specifying tests that must be performed following a design change to demonstrate that safety related structures, components, and systems meet Technical Specification requirements.
- d. Review of proposed changes to these Technical Specifications and Operating License DPR-50.
- e. Review of violations of applicable federal statutes, codes, regulations, orders, and internal station procedures and instructions having nuclear safety significance.
- f. Review of reportable occurrences, and violations of these Technical Specifications and Operating License DPR-50.
- g. Review of station performance records of significant operating abnormalities or deviations from normal and expected performance of plant equipment.
- h. Review of indications of an unanticipated deficiency in some aspect of design or operation of nuclear safety related structures, components or systems, including confirmation of determinations regarding whether they involve unreviewed safety questions, or reportable occurrences.
- i. Review of events covered under 6.5.2.A.2.d, e, f, and g shall include reporting to the Manager-Generation Division, Unit Superintendent, and other appropriate members of management on the results of investigations and recommendations to prevent or reduce the probability of recurrence.
- j. Development, direction and overall coordination of Operational Quality Assurance activities.



k. Periodically audit the areas listed below to verify compliance with the Three Mile Island Operating Quality Assurance Plan, internal rules and procedures, federal regulations, and operating license provisions:

- 1) The 18 Criteria of 10CFR50, Appendix B
- 2) Normal Station Operation
- 3) Inservice Inspection
- 4) Refueling
- 5) Radiological Controls
- 6) Station Maintenance
- 7) Technical Specifications
- 8) Training and Qualifications of Station Staff
- 9) Emergency Plan
- 10) Industrial Security Program

In performing these audits, written procedures and/or checklists shall be used. As a minimum, each area shall be audited at least once every two years.

## AUDITS

- 6.5.2.A.3 Audits shall periodically be conducted under the direction of the Manager-Operational Quality Assurance to verify compliance of plant operations with aspects of the Three Mile Island Operating Quality Assurance Plan, including verification of compliance with applicable internal rules and procedures; federal regulations and operating license provisions; training qualifications and performance of operating staff. Audits of the Industrial Security Program and the Emergency Plan shall also be conducted at periodic intervals not to exceed two years. In performing these audits, written procedures and/or check lists shall be used and written reports of such audits shall be issued.

## AUTHORITY

- 6.5.2.A.4 The Met-Ed Corporate Technical Support Staff was approved by the Company President. The Company President has assigned to the Manager-Generation Division responsibility for the overall effectiveness of the corporate technical support and plant organizations and the Three Mile Island Operating Quality Assurance Plan. The Manager-Generation Division fulfills this responsibility by delegating the appropriate authority to the Met-Ed Corporate Technical Support Staff. The Manager-Generation Division shall issue instructions and procedures which delineate the responsibilities and authority of the various managers who report to him.

## REPORTS TO MANAGEMENT AND THE GENERAL OFFICE REVIEW BOARD

- 6.5.2.A.5 Reports shall be made to management and the General Office Review Board as follows:
- a. The Manager-Generation Division shall report to the Company President any problems identified by the Generation Division staff which require the President's administrative corrective action, together with appropriate recommendations.
  - b. Any reportable occurrence or item involving an unreviewed nuclear safety question which is identified by the Corporate Technical Support Staff review shall be brought to the attention of the Manager-Generation Division, and the General Office Review Board if it has not been previously reported by the Plant Operations Review Committee or Unit Superintendent.
  - c. Written reports of audits performed pursuant to 6.5.2.A.3 shall be submitted to the Manager-Generation Division and the Chairman, General Office Review Board.

## 6.5.2.B GENERAL OFFICE REVIEW BOARD (GORB)

### FUNCTION

- 6.5.2.B.1 In its concern with the broader issues (rather than the detailed issues) of nuclear safety, it shall be the primary responsibility of the General Office Review Board to:
- a. Foresee potentially significant nuclear and radiation safety problems and to recommend to the President of Met-Ed how they may be avoided.

- b. Periodically review the Generation Division Unit program to assure that audits are being accomplished in accordance with requirements of Technical Specifications and ANSI 18.7-1972 Standard for Administrative Controls for Nuclear Power Plants.

#### COMPOSITION

- 6.5.2.B.2
  - a. The Chairman and Vice Chairman shall be appointed by the Company President.
  - b. The Chairman shall designate a minimum of four additional members. No more than a minority of the committee shall have line responsibility for day-to-day operation of Three Mile Island Nuclear Station.
  - c. Members of the General Office Review Board shall possess extensive experience in their individual specialties and collectively have the competence set forth in ANSI N18.7-1972, Standard for Administrative Controls for Nuclear Power Plants, Section 4.2.2.2.

#### ALTERNATES

- 6.5.2.B.3 Alternate members shall be appointed in writing by the Chairman or Vice Chairman of the General Office Review Board to serve on a temporary basis.

#### CONSULTANTS

- 6.5.2.B.4 Consultants shall be utilized as determined by the Chairman and Vice Chairman of the General Office Review Board to provide expert advice to the Review Board.

#### MEETING FREQUENCY

- 6.5.2.B.5 The General Office Review Board 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.B.6 A quorum for formal meetings shall have no less than a majority of the principals or duly appointed alternates and shall include the Chairman or Vice Chairman. No more than a minority of the quorum shall hold line responsibility for day-to-day operations of the Three Mile Island Nuclear Station. A quorum shall not take credit for more than two alternate members.

#### REVIEW

- 6.5.2.B.7 The General Office Review Board shall review as is consistent with its responsibilities:
  - a. Proposed changes to procedures, equipment or systems referred to the Committee by the Plant Operations Review Committee, the Unit Superintendent, the Manager-Generation Engineering, or the Manager-Generation Operations-Nuclear.

- b. Proposed tests and experiments referred to the committee by the Plant Operations Review Committee, the Unit Superintendent, the Manager-Generation Engineering, or the Manager Generation Operations Nuclear.
- c. Proposed changes in and violations of these Technical Specifications or Operating License DPR-50.
- d. Operating abnormalities and deficiencies in some aspect of design or operation of nuclear safety related equipment which involves an unreviewed nuclear safety question.
- e. Reportable Occurrences.
- f. Adequacy of the Plant Operations Review Committee's and the Met-Ed Corporate Technical Support Staff's determinations concerning unreviewed safety questions.
- g. Audits and audit program of the Generation Division.
- h. Adequacy of Plant Operations Review Committee minutes.

#### AUDITS

- 6.5.2.B.8 The General Office Review Board shall perform periodic reviews of the Operational Quality Assurance audit program to insure that audits are being accomplished in accordance with the requirements of these Technical Specifications and ANSI N18.7-1972, "Standard for Administrative Controls for Nuclear Power Plants." Special reviews, audits and investigations shall also be conducted as requested by the Company President or as deemed necessary to confirm the adequate functioning of the station and corporate technical staffs.

#### AUTHORITY

- 6.5.2.B.9 The General Office Review Board shall be advisory to the Company President.

Written administrative procedures for committee operation shall be prepared and maintained. These procedures shall describe the requirements for submittal and content of presentations to the committee, provisions for use of subcommittees, review and approval by members of written committee evaluations and recommendations, dissemination and approval of minutes, and other appropriate matters.

#### RECORDS

- 6.5.2.B.10 Records of General Office Review Board activities shall be prepared, approved and distributed as indicated below:
- a. Minutes shall be recorded and approved for all meetings of the General Office Review Board. Copies of the minutes shall be forwarded to the members, Company President, Manager-Generation Division, Unit Superintendent, the Chairman of the Plant Operations Review Committee, the Manager-Generation Operations-Nuclear, and such others as the Chairman may designate.

- b. As appropriate, the Chairman of the General Office Review Board shall by letter to the Company President within 14 days following completion of the review:
- 1) Recommend actions that should be taken on proposed changes to these Technical Specifications or Operating License DPR-50.
  - 2) Recommend actions that should be taken on proposed tests, facility changes, procedure changes, or operating abnormalities which they have reviewed by referral or upon their own initiative.
  - 3) Recommend to the Company President appropriate action to prevent recurrence of reportable occurrences or to improve the effectiveness of the plant and corporate organization.

#### 6.6 REPORTABLE OCCURRENCE ACTION

6.6.1 The following actions shall be taken in the event of a reportable occurrence requiring prompt notification with written follow-up:

- a. Each occurrence shall be reported immediately to the Manager-Generation Operations-Nuclear, Unit Superintendent, and the Manager-Generation Division and shall be reviewed promptly by the Plant Operations Review Committee. This committee shall prepare a separate report for each occurrence which shall include an evaluation of the cause of the occurrence and recommendations for appropriate action to prevent or minimize the probability of a repetition of the occurrence. Copies of all such reports shall be submitted to the Unit Superintendent, General Office Review Board, and the Manager-Generation Operations-Nuclear.
- b. The Nuclear Regulatory Commission shall be notified in accordance with the requirements of Technical Specification 6.9.2.A.

6.6.2 The following actions shall be taken in the event of a reportable occurrence requiring a thirty-day written report.

- a. Each such occurrence shall be reported promptly to the Unit Superintendent, Manager-Generation Operations-Nuclear, and the Manager Generation Division. A separate written report for each occurrence shall be prepared and shall include a description of the occurrence, the cause of the occurrence, (and appropriate corrective action to) prevent or minimize the probability of repetition of the occurrence. Copies of all such reports shall be submitted to the Unit Superintendent, Manager-Generation Operations-Nuclear, and the Manager Generation Division.
- b. Such written reports shall normally be prepared by the Plant Operations Review Committee, but may be prepared by the Met-Ed Corporate Technical Support Staff if appropriate.

- c. A written report shall be submitted to the Nuclear Regulatory Commission in accordance with the requirements of Technical Specification 6.9.2.B

#### 6.7 OCCURRENCES INVOLVING A 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 and operation shall not be resumed until authorized by the Nuclear Regulatory Commission.
- b. An immediate report shall be made to the Unit Superintendent, Manager-Generation Operations-Nuclear to the Manager-Generation Division, and to the General Office Review Board, and the occurrence shall be promptly reported to the Nuclear Regulatory Commission in accordance with Technical Specification, 6.9.2.A
- c. A complete analysis of the circumstances leading up to and resulting from the occurrence shall be performed by the Plant Operations Review Committee and a report prepared. This report shall include analysis of the effects of the occurrence and recommendations concerning operation of the unit and prevention of a recurrence. This report shall be submitted to the Unit Superintendent, Manager-Generation Operations-Nuclear, the General Office Review Board, and the Manager-Generation Division. Appropriate analysis of reports will be submitted to the Nuclear Regulatory Commission in accordance with Technical Specification, 6.9.2.A.

## 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 USNRC Regulatory Guide 1.33 November 1972 except as provided in 6.8.2 and 6.8.3 below.
- 6.8.2 Each nuclear safety related procedure and administrative policy of 6.8.1 above, and changes thereto, shall be reviewed by the Plant Operations Review Committee and approved by the Unit Superintendent prior to implementation and periodically as may be set forth in each document.
- 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 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 Plant Operations Review Committee and approved by the Unit Superintendent within 7 days of implementation.

## 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 FSAR 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.<sup>2/</sup> 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



## 6.9 REPORTING REQUIREMENTS (cont'd)

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 item 6.9.1B(2)(e) below.
- (2) For each outage or forced reduction in power<sup>3/</sup> 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;
  - (d) operating time lost as a result of the outage or power<sup>4/</sup> reduction (for scheduled or forced outages, 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.

## 6.9 REPORTING REQUIREMENTS (cont'd)

- (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, <sup>5/</sup> 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.

### 6.9.2 Reportable Occurrences<sup>1/</sup>

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

## 6.9 REPORTING REQUIREMENTS (cont'd)

A. Prompt Notification With Written Follow-Up <sup>1/</sup> 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 follow-up report within two weeks. The written follow-up report shall include material to provide complete explanation, cause of the event, the circumstances surrounding the event, any corrective action, and component failure data.

- (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 items 6.9.2A(5), 6.9.2A(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 item 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.

## 6.9 REPORTING REQUIREMENTS (cont'd)

- (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%  $\Delta k/k$ ; 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%  $\Delta k/k$ ; 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 FSAR.
- (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 FSAR.

Note: For items 6.9.2A(5) and 6.9.2A(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 items 6.9.2.B(2) and 6.9.2.B(3).

- (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 FSAR 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 safety 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 FSAR or Technical Specifications bases; or discovery during plant life of conditions not specifically considered in the FSAR or Technical Specifications that require remedial action or corrective measures to prevent the existence or development of an unsafe condition.

## 6.9 REPORTING REQUIREMENTS (cont'd)

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

B. Thirty Day Written Reports. <sup>1/</sup> 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 narrative material to provide complete explanation of the cause of the event, circumstances surrounding the event, any corrective action, and component failure data.

- (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 items 6.9.2.B(1) and 6.9.2.B(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 item 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 REPORTING REQUIREMENTS (cont'd)

6.9.3 Unique Reporting Requirements

- A. A section in the Annual Operating Report shall include information on aircraft movements at the Harrisburg International Airport. This additional information shall include the total number of aircraft movements. (takeoffs and landings) at the Harrisburg International Airport for the previous twelve-month period. Also included shall be the total number of movements of aircraft larger than 200,000 pounds, based on a current percentage estimate provided by the airport manager.
- B. 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:

<u>Tests</u>	<u>Submittal Dates</u>
(1) Containment Structural Integrity Test	
(a) Tendon Surveillance Program	Within 3 months after performance of surveillance program.
(b) Ring Girder Inspection Program	Within 3 months after performance of each inspection
(2) Containment Integrated Leak Rate Test	Within 6 months after completion of test.
(3) Inservice Inspection Program	Within 6 months after five years of operation.

FOOTNOTES

1. These reporting requirements apply only to Appendix A technical specifications.
2. A single submittal may be made for a multiple unit station. The submittal should combine those sections that are common to all units at the station.
3. 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.
4. 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.
5. This tabulation supplements the requirements of §20.407 of 10 CFR Part 20.

## 6.10 RECORD RETENTION

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

- a. Records of normal station operation including power levels and periods of operation at each power level.
- b. Records of principal maintenance activities, including inspection, repairs, substitution, or replacement of principle items of equipment pertaining to nuclear safety.
- c. Records of reportable occurrences and safety limits exceeded.
- d. Records of periodic checks, tests, and calibration.
- e. Records of reactor physics tests and other special tests pertaining to nuclear safety.
- f. Changes to nuclear safety related operating procedures.
- g. Records of solid radioactive shipments.
- h. By-product material inventory records and source leak test results.
- i. Special nuclear material inventory records.
- j. Control Room Log Book.
- k. Shift Foreman's Log.

6.10.2 The following records shall be retained for the duration of Operating License DPR-50:

- 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. Routine station radiation surveys and monitoring records.
- d. Records of radiation exposure history and radiation exposure status of personnel, including all contractors and station visitors who enter radioactive material area.
- e. Records of radioactive liquid and gaseous wastes released to the environment, and records of environmental monitoring surveys.
- f. Records of transient or operational cycles for those nuclear safety related facility components designed for a limited number of transients or cycles as defined in the Final Safety Analysis Report.

- 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 OQA Plan.
- 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. Plant Operations Review Committee and General Office Review Board Minutes.

#### 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 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.
  - 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. 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 insurance, 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 (or the National Institute of Occupational Safety and Health, as applicable) under its appropriate Approval Schedules as set forth in Table 6.12-1. Equipment not approved under U. S. Bureau of Mines (or National Institute of Occupational Safety and Health, as applicable) 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 (or National Institute of Occupational Safety and Health, as applicable) 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.

### 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 (100 mrem/h or greater) in which the intensity of radiation is 1000 mrem/h or less shall be barricaded and conspicuously posted as a high radiation area, and entrance thereto shall be controlled by requiring issuance of a Radiation Work Permit. Any individual or group of individuals permitted to enter such areas shall be provided with a radiation monitoring device which continuously 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 Radiation Protection Supervisor/Foreman or the Shift Foreman on duty.

TABLE 6.12-1  
PROTECTION FACTORS FOR RESPIRATORS

DESCRIPTION	MODES <sup>1</sup>	PROTECTION FACTORS <sup>2</sup> PARTICULATES AND VAPORS AND GASES EXCEPT TRITIUM OXIDE <sup>3</sup>	GUIDES TO SELECTION OF EQUIPMENT BUREAU OF MINES (OR NATIONAL INSTITUTE OF OCCUPATIONAL SAFETY AND HEALTH, AS APPLICABLE) APPROVAL SCHEDULES* FOR EQUIPMENT CAPABLE OF PROVIDING AT LEAST EQUIVALENT PROTECTION FACTORS *or schedule superseding for equipment of type listed
<b>I. <u>AIR-PURIFYING RESPIRATORS</u></b>			
Facepiece, half-mask <sup>4,7</sup>	NP	5	21B 30 CFR § 14.4(b)(4)
Facepiece, full <sup>7</sup>	NP	100	21B 30 CFR § 14.4(b)(5); 14F 30 CFR 1
<b>II. <u>ATMOSPHERE-SUPPLYING RESPIRATOR</u></b>			
<b>1. <u>Airline respirator</u></b>			
Facepiece, half-mask	CF	100	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, full <sup>7</sup>	CF	1,000	19B 30 CFR § 12.2(c)(2) Type C(i)
Facepiece, full <sup>7</sup>	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
<b>2. <u>Self-contained breathing apparatus (SCBA)</u></b>			
Facepiece, full <sup>7</sup>	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)
<b>III. <u>COMBINATION RESPIRATOR</u></b>			
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 6.12-1 (Continued)

<sup>1</sup> 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)

<sup>2</sup> (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 (or National Institute of Occupational Safety and Health, as applicable) 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.

<sup>3</sup> 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 <sup>5</sup>, below, concerning supplied-air suits and hoods.

<sup>4</sup> 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.

<sup>5</sup> 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 Nuclear Regulatory Commission.

TABLE 6.12-1 (Continued)

<sup>6</sup> No approval schedules currently available for this equipment. Equipment must be evaluated by testing or on basis of available test information.

<sup>7</sup> Only for shaven faces.

NOTE 1: Protection factors for respirators, as may be approved by the U.S. Bureau of Mines (or the National Institute of Occupational Safety and Health, as applicable) 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 (or the Institute of Occupational Safety and Health, as applicable) 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.

