

JAN 8 1972

D. Ross, PWR-2, Division of Reactor Licensing  
THRU <sup>1/9</sup> D. Thompson, Chief, OSB, DRL

REVIEW OF FINAL SAFETY ANALYSIS REPORT FOR THE THREE MILE ISLAND  
NUCLEAR POWER PLANT - UNIT 1 (DOCKET NO. 50-289)

I have conducted a review of the PSAR of the above applicant in the areas of Conduct of Operations, Initial Tests and Operations, and the Administrative Controls section of the Technical Specifications. Additional information will be required of the applicant in order to complete the review in these areas. Enclosed is a list of questions and statements which identify those specific areas which were found to be inadequate. It is recommended that the list be forwarded to the applicant for his consideration and resolution.

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Operational Safety Branch  
Division of Reactor Licensing

Enclosure:  
Questions & Statements

cc: D. J. Skovholt, DRL  
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DATE	12/30/71				

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## THREE MILE ISLAND 1 (DOCKET 50-289)

SECTION 12, CONDUCT OF OPERATIONSFSAR  
Section

- 12.1.1.1 1. Provide information concerning the corporate technical support organization that will specifically support the operation of the nuclear plant. Include a description of the duties, responsibilities, and authority of the "Engineer in Charge" and the assigned engineering technical staff. Provide, by way of resumés, information concerning the qualifications, educational backgrounds, and experience of the corporate technical support staff (Reference ANSI-N18.1).
- 12.1.1.2 2. Provide a description of the function, responsibility, and authority of the Control and Instrument Foreman. This is considered a key supervisory position. (See ANSI-N18.1.)
- 12.1.1.2 3. Describe the duties and the authority delegated to the Station Engineer, Nuclear Engineer, Chemical Supervisor.
- 12.1.1.2 4. Provide resumés of all key supervisory personnel to include qualifications, educational backgrounds and experience, and specific nuclear training. These include the Station Superintendent, Supervisor of Operations, Supervisor of Maintenance, Station Engineer, Control and Instrument Foreman, the five Shift Foremen, Nuclear Engineer, Radiation Protection Supervisor, and Chemical Supervisor.
- 12.1.1.2 5. Provide a description of the qualifications required by individuals selected to fill each of the positions listed in 12.1.2. Add the qualifications for the position of Control and Instrument Foreman. (See ANSI-N18.1.)
- 12.1.1.2 6. Describe the specific succession of responsibility of supervisory personnel for overall operation of the facility in the event of absences or emergencies.
- 12.1.1.2 7. Explain the functions and responsibilities of unlicensed operators and technicians.
- 12.2.1.2 8. Provide a detailed description of the nuclear training program for the plant non-supervisory personnel, including both formal and on-the-job training. Give the duration of each aspect of the program (ANSI-N18.1).

- 12.2 9. Provide a description of the general employee training given to all personnel regularly employed at the nuclear plant.
- 12.2 10. Designate the individual responsible for the administration of the training program. Who evaluates the effectiveness of the training program?
- 12.2 11. What provisions have been made for replacement and retraining? Describe in detail. Is the use of a plant simulator anticipated?
- 12.2.3 12. What training is provided for those offsite organizations that may be called upon to assist plant staff during an emergency?
- 12.2.3 13. Provide a commitment that the agreements with offsite organizations for emergency assistance are in writing.
- 12.3.1 14. Provide a commitment that not only will detailed written procedures be prepared but that they will be used in the operation of the plant. Provide a list of the titles of all procedures.
- 12.3 15. Describe the system for the revision (including review and approval) of plant operating, maintenance, testing, and emergency procedures.
- 12.4 16. Specify the retention period of all records listed in subsection 12.4 and subsection 15.6.5.
- 12.4 17. Describe the provisions made for maintaining records of qualifications, experience, training, and retraining of each member of the plant staff.
- Fig. 12.1 18. Designate on Figure 12.1 the key supervisory personnel for which minimum qualifications are specified in the Technical Specifications.  
15.6.1.F
- 12.2.3 19. Has the emergency planning program considered emergencies other than those listed, e.g., natural disasters, transportation accidents, and sabotage.
- 12.2.3 20. Who will evaluate onsite and offsite radiation levels following an accident? What predetermined action levels have been developed for implementation of protective measures? What recommendations will be made to local authorities for evacuation, take cover, or other protective measures for various action levels?
- 12.3.5 21. What is the membership of the Emergency Planning Group?

APPENDIX 12A - RADIATION EMERGENCY PLAN

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APPENDIX 12A  
SECTION

- 2.6 1. Where are the Emergency Monitoring kits located?
- 3.2.1 2. The job assignments of the Station Superintendent and the Station Engineer appear to conflict with the Emergency Operating Organization in Figure 12A.-3.
- 3.2 and App B 3. Who are the designated alternates during a radiation emergency, for the Station Superintendent, the Supervisor of Operations and the Station Engineer?
- 4.2.3 and 6.3.2 4. Explain the rationale of not declaring a General Emergency on the occurrence of a major accident which could potentially result in the release of radioactive material to the environment. Provide the quantitative basis for requesting offsite assistance after the Radiation Protection Monitoring Team has determined that a high radiation level exists at the site boundary.
- 5.7 5. How do the holders of the Radiation Emergency Plan know that they have the latest revision of the plan? For example, Section 5.7 and Appendix C are not current. How is the Radiation Emergency Plan kept current?
- 7.2 6. Are the arrangements for emergency assistance with the Hershey Medical Center, and other offsite organizations, in writing?
- 8.0 7. What is meant by "periodically" with regard to the review and revision of the Radiation Emergency Plan? What specific provisions have been made?
- 10.0 8. On what frequency will training, retraining, and drills of the emergency plan be held? What provisions have been made for training offsite personnel from organizations who might provide emergency assistance?
- 11.0 9. The recovery and reentry section is inadequate. Expand this area to include such matters as: exposure guides for rescue personnel, provisions for the rescue of personnel, the determination of the accessibility of plant areas following an accident, the availability of current operating records, the storage of building plans, procedures, and other essential information in a location readily

accessible in an emergency, interviewing evacuated employees to obtain information about the emergency, and the designation of a technical group to determine reentry advisability.

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SECTION 13 - INITIAL TESTS AND OPERATIONS

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SECTION

- 13.2 1. Describe the administrative procedures to be followed to incorporate any system or procedure modification if the results of a test are contrary to expected results or if the test procedure proves to be inadequate.
- 13.2.1.2 2. Provide a list of the membership of the Test Working Group, including their field of expertise, education, and technical training.
- 13.2.1.3 3. Describe what actions will be taken by the Plant Operations Review Committee if the execution or results of any test are deemed unsatisfactory.
- 13.2.1.2 4. At what period in the initial startup of the plant will the Test Working Group cease to function?
- 13.2.2 5. Explain the term "general direction" with regard to the execution of functional and operational tests?
- 13.2.2 6. Explain the interrelationships of the Test Working Group and the Plant Operations Review Committee with regard to the testing program.
- 13.4.1 7. Explain the responsibility and authority of the GPU Quality Assurance personnel for initial fuel loading. (It appears that Section 1.6.2 is written exclusively for the design and construction phase.)
- 13.4.1 8. Provide a schedule of those procedures to be used during initial startup and power ascension including the plant conditions (with power levels) at which the tests will be performed. Refer to the Guide for the Planning of Initial Startup Programs, dated 12/7/70.

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SUBSECTION 15.6 - ADMINISTRATIVE CONTROLS

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SECTION

- 15.1.2 1. Provide justification for excluding from the definition of Abnormal Occurrences the following statements: "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 plant," and "Conditions arising from natural or offsite manmade events that affect or threaten to affect the safe operation of the plant." Subsection 15.6.3 uses the ANS 3.2 definition.
- 15.1.2 2. Why is abnormal occurrence definition "c" limited to a radioactive release from the site, excluding releases from any plant system designed to act as a boundary? Reference proposed standard ANS 3.2, draft 6, of 9/8/71.
- 15.6.1 3. Specify the minimum number of licensed and non-licensed operators present during the following plant conditions: fuel loading and refueling, cold shutdown, and hot shutdown or operation.
- 15.6.1 4. Justify the provision for the requirement of only one licensed control room operator as specified as a footnote on page 15-95. This disagrees with Figure 12.1 which specifies 10 licensed reactor control room operators for the 5 shifts.
- 15.6.1 5. What provision is made for health physics coverage on shift?
- 15.6.1 6. What is meant by "Normal" in Specification E of subsection 15.6.1?
- 15.6.1 7. For Specification F of subsection 15.6.1, list the positions by title that are referred to (See ANSI-N18.1).
- 15.6.1 8. Provide a copy of the written charter for both the Plant Operations Review Committee and the General Office Review Board. Include, as a minimum, the provisions listed in Section 4 of ANS 3.2.
- 15.6.1 9. Justify the inclusion of two members of the General Office Review Board on the Plant Operations Review Committee. Their participation in Committee meetings would make their effectiveness on the Board for independent audit questionable.

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- 15.6.1 10. Provide the basis for establishing less than a majority of the Plant Operations Review Committee as a quorum.
- 15.6.1 11. For the General Office Review Board, identify by title and list the technical specialty and experience of each member. Designate the Chairman and Vice Chairman.
- 15.6.1 12. Explain the omission of the following responsibilities of the Board:
- a. review of tests and experiments and their results, which may constitute an unreviewed safety hazard.
  - b. review of significant operating abnormalities or deviations from normal and expected performance of plant equipment.
- Fig.  
15.6.1-1 13. Does the General Public Utilities Nuclear Power Activities Group provide the corporate technical support for the plant? If so, provide a list of the assigned engineering technical staff, their qualifications, educational background, and experience, and their responsibility and authority over plant operations. If outside consultants are used for technical support for plant operations, specify areas of responsibility and functional working arrangements.
- 15.6.2 14. The listing of the detailed procedures in subsection 15.6.2, Specification A is not complete. For example, procedures for surveillance and testing, plant emergencies, and industrial security are not included. Provide a complete list of the types of procedures to be used for plant operations.
- 15.6.2 15. Specify the frequency of review of operating procedures and emergency procedures by operating personnel.
- 15.6.2 16. What is the plant's policy for adherence to written procedures which are not safety related? Will "temporary" minor changes in procedures, approved by the Shift Foreman, be reviewed and approved by the Station Superintendent or the Plant Operations Review Committee?
- 15.6.3 17. Is the General Office Review Board specifically charged with the review and approval (with appropriate recommendations) of reports of abnormal occurrences and of exceeding a safety limit (subsections 15.6.3 and 15.6.4)?

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- 15.6.5 18. The specification under subsection 15.6.5 does not include such items as fuel exposure, shutdowns, fuel inventories and transfers, minutes of meetings of review and audit groups, and reactor coolant system inservice inspections. Provide a complete listing of the station logs and records to be retained, with a retention period given for each.
- 15.6.6 19. Provide justification for the proposed exception to the 10 CFR 20 regulation regarding the control of access to high radiation areas.
- 15.6.7 20. Will the written reports submitted to the AEC per specification B of subsection 15.6.7 include: (a) an outline of the measures taken to assure that the cause of the incident has been determined, and (b) a discussion of the incident as it relates to similar incidents?
- 15.6.7 21. Subsection 15.6.7 does not include the provision for a Startup Report and a First Year Operations Report. The subsection does not address the following events that should be reported within 30 days: inadequacy in the implementation of administrative or procedural controls, conditions involving a possible single failure, occurrences or conditions involving an offsite threat to the safety of operation of the facility, and any substantial variance from performance specifications. Specify what "other information" will be included in the operations summary of the six month reports, e.g., procedure changes and results of tests and inspections. (See Safety Guide 16.) Include under Shutdown, information as to plant status during outage, and corrective action taken to prevent repetition, if appropriate. Expand the Maintenance and Facility Changes paragraphs using Safety Guide 16 as guidance. Include a designation of the destination of waste shipments. Elaborate on what is meant by "A summary of results," under Environmental Monitoring. Does this include the highest, lowest, and average concentrations or levels of radiation for the sampling point, and the number of locations at which levels are found to be significantly above local background?

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