

UNITED STATES NUCLEAR REGULATORY COMMISSION

In the Matter of

GENERAL PUBLIC UTILITIES NUCLEAR
CORPORATION

(Three Mile Island Nuclear Station
Unit 2)

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Docket No. 50-320

EXEMPTIONS

I.

GPU Nuclear Corporation, Metropolitan Edison Company, Jersey Central Power and Light Company and Pennsylvania Electric Company (collectively, the licensee) are the holders of Facility Operating License No. DPR-73, which has authorized operation of the Three Mile Island Nuclear Station, Unit 2 (TMI-2) at power levels up to 2772 megawatts thermal. The facility, which is located in Londonderry Township, Dauphin County, Pennsylvania, is a pressurized water reactor previously used for the commercial generation of electricity.

By Order for Modification of License, dated July 20, 1979, the licensee's authority to operate the facility was suspended and the licensee's authority was limited to maintenance of the facility in the present shutdown cooling mode (44 Fed. Reg. 45271). By further Order of the Director, Office of Nuclear Reactor Regulation, dated February 11, 1980, a new set of formal license requirements was imposed to reflect the post-accident condition of the facility and to assure the continued maintenance of the current safe, stable, long-term cooling condition of the facility (45 Fed. Reg. 11292). This license provides, among other things, that it is subject to all rules, regulations and Orders of the Commission now or hereafter in effect.

II.

On November 6, 1984, General Public Utilities Nuclear Corporation (GPUNC) submitted Technical Specification Change Request No. 46. This correspondence contained a request to delete the Decay Heat Removal System from the TMI-2 Proposed Technical Specifications. The staff responded to this and other change requests with a list of questions forwarded on February 6, 1985. The licensee was asked to consider whether exemptions from 10 CFR 50, Appendix A, General Design Criteria (GDC) 34, 35, 36 and 37 were appropriate. GPUNC responded in correspondence dated March 27, 1985 which stated that exemptions from GDC 35 and 36 were not required. However, an exemption request from GDC 34 and 37 was requested by GPUNC in a letter dated March 26, 1985. The staff is issuing the requested exemptions as discussed herein.

III.

10 CFR 50, Appendix A, GDC 34 requires that a system to remove residual heat shall be provided. The purpose shall be to transfer fission product decay heat and other residual heat from the core at such a rate that acceptable fuel design limits and design conditions of the reactor coolant pressure boundary are not exceeded.

Since January 1981, the TMI-2 core has been cooled passively via the loss-to-ambient mode. At present the decay heat level is less than 12 Kw thermal with an associated maximum core temperature of less than 100°F. The maximum temperature that is credible while in this mode (no forced circulation) is less than 170°F assuming water level is lowered to the

bottom of the hot leg nozzles. At this temperature sufficient buffer is still maintained between the maximum anticipated core temperature and the temperature at which the water in the vessel would boil (212°F). Therefore, the staff concludes that since the current loss-to-ambient mode is effective for all anticipated core temperatures, the requirement to have a residual heat removal system (GDC 34) is no longer necessary at TMI-2. On the other hand, portions of the residual heat removal system at TMI-2 still contain radioactive contamination resulting from the accident. Operation of the system could result in the spread of radioactive contamination. In addition, the requirement to maintain an operable residual heat removal system would result in an unnecessary burden for maintenance, surveillance and testing and could result in unnecessary radiation exposures to the workers. Accordingly, an exemption for GDC 34 is warranted.

The licensee has proposed in Technical Specification Change Request No. 46 that a Reactor Building Sump Recirculation System (RBSRS) be used for emergency core cooling at TMI-2. The system would only be installed in the event of an unisolable leak in the RCS. Licensee calculations, which are supported by the staff in an Amendment of Order concurrently issued with this exemption, conclude that at least 10 days are available between the detection of the worst-case credible leak and when the RBSRS would be required. This gives ample time for the system to be put in service. As stated in the referenced Amendment of Order, the staff has accepted the RBSRS and its proposed method of use. This acceptance included Recovery Operations Plan requirements for testing the operability of major system

components on a regular basis (see the staff's Safety Evaluation Report approving the modifications to the Proposed Technical Specifications related to Borated Cooling Water Injection). GDC 37 requires the testing of the emergency core cooling system including the operability of the system as a whole and the performance of the full operational sequence. Since the staff has accepted the installation of the RBSRS in the reactor building only in the event of an unisolable leak in the RCS, the testing of the system according to GDC 37 is not necessary. In addition, since the reactor building basement still contains accident generated contaminated water, testing of a basement sump recirculation system in a full operational sequence could result in the spread of contamination and radiation exposures to the workers. Accordingly, an exemption from GDC 37 is warranted.

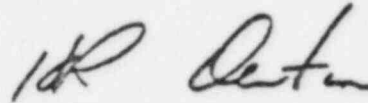
IV.

Accordingly, the Commission has determined that, pursuant to 10 CFR 50.12, an exemption is authorized by law and will not endanger life or property or the common defense and security and is otherwise in the public interest. The Commission hereby grants exemptions from the requirements of 10 CFR 50, Appendix A General Design Criteria 34 and 37 in accordance with the licensee's request dated March 26, 1985.

It is further determined that the exemptions do not authorize a change in effluent types or total amounts nor an increase in power level and will not result in any significant environmental impact. In light of this determination and as reflected in the Environmental Assessment and Notice of

Finding of No Significant Environmental Impact prepared pursuant to 10 CFR 51.2 and 51.30 through 51.32, issued concurrently herewith, it was concluded that the instant action is insignificant from the standpoint of environmental impact and an environmental impact statement need not be prepared.

FOR THE NUCLEAR REGULATORY COMMISSION



Harold R. Denton, Director
Office of Nuclear Reactor Regulation

Effective Date: September 23, 1985
Dated at Bethesda, Maryland
Issuance Date: August 8, 1985

UNITED STATES NUCLEAR REGULATORY COMMISSION
GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION
DOCKET NO. 50-320
ENVIRONMENTAL ASSESSMENT AND NOTICE OF FINDING
OF NO SIGNIFICANT ENVIRONMENTAL IMPACT

The U. S. Nuclear Regulatory Commission (the Commission) is planning to issue concurrently with an Amendment of the Director of the Office of Nuclear Reactor Regulation's Order an Exemption relative to Facility Operating License No. DPR-73, issued to General Public Utilities Nuclear Corporation (the licensee), for operation of the Three Mile Island Nuclear Station, Unit 2 (TMI-2), located in Londonderry Township, Dauphin County, Pennsylvania.

ENVIRONMENTAL ASSESSMENT

Identification of Proposed Action: The action being considered by the Commission is the issuance of exemptions from the requirements of 10 CFR 50, Appendix A, General Design Criteria (GDC) 34 and 37. These criteria state requirements for residual heat removal system capabilities and for testing emergency core cooling systems, respectively. On November 6, 1984, the licensee submitted Technical Specification Change Request No. 46. This correspondence contains a request to delete the Decay Heat Removal System from the TMI-2 Proposed Technical Specifications (PTS). Review of the PTS by staff resulted in a list of questions forwarded to the licensee on February 6, 1985. In response to those questions, the licensee considered that exemptions to GDC 34 and 37 were appropriate. These exemptions were requested in the licensee's letter dated March 26, 1985.

The Need for the Action: The exemptions are warranted because of the successful use of the loss-to-ambient cooling mode at TMI-2 for residual heat removal. This is a passive method for removing decay heat and therefore it is very stable. The licensee also proposed in Technical Specification Change Request 46 to have available a Reactor Building Sump Recirculation System (RBSRS) to be used in the case of an unisolable leak.

When considering the current status of the TMI-2 core and the amount of time that would be available to install the RBSRS, an in-place, routinely tested emergency core cooling is not necessary. The licensee has proposed to test the major system components separately to ensure that if they are needed, they will function properly. In-place testing is not desirable because of the risk of spread of radioactive contamination and because of radiation exposures to the workers.

Environmental Impacts of the Proposed Actions: The staff has evaluated the subject exemptions and concluded that they will not result in significant increases in airborne or liquid radioactivity inside the reactor building or in corresponding releases to the environment. There are also no non-radiological impacts to the environment as a result of this action.

Alternative to this Action: Since we have concluded that there is no significant environmental impact associated with the subject exemptions, any alternatives to this change will have either no significant environmental impact or greater environmental impact. This would not reduce significant

environmental impacts of plant operations and would result in the application of overly restrictive regulatory requirements when considering the unique conditions of TMI-2.

Agencies and Persons Consulted: The NRC staff reviewed the licensee's request and did not consult other agencies or persons.

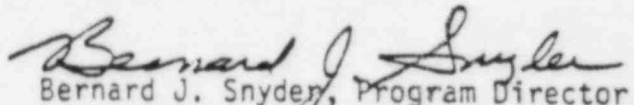
Alternate Use of Resources: This action does not involve the use of resources not previously considered in connection with the Final Programmatic Impact Statement for TMI-2 dated March 1981.

Finding of No Significant Impact: The Commission has determined not to prepare an environmental impact statement for the subject exemptions. Based upon the foregoing environmental assessment, we conclude that this action will not have a significant effect on the quality of the human environment.

For further details with respect to this action see; (1) Letter to B. J. Snyder, USNRC, from F. R. Standerfer, GPUNC, Technical Specifications Change Request No. 46, dated November 6, 1984, (2) Letter to F. R. Standerfer, GPUNC, from B. J. Snyder, USNRC, NRC Questions on Technical Specifications Change Request No. 46, dated February 6, 1985, (3) Letter to B. J. Snyder, USNRC, from F. R. Standerfer, GPUNC, Technical Specifications Change Request No. 46 (response to NRC questions), dated March 27, 1985, and (4) Letter to B. J. Snyder, USNRC, from F. R. Standerfer, GPUNC, General Design Criteria 34 and 37, dated March 26, 1985.

The above documents are available for inspection at the Commission's Public Local Document Room, 1717 H Street, N.W., Washington, DC, and at the Commission's Local Public Document Room at the State Library of Pennsylvania, Government Publications Section, Education Building, Commonwealth and Walnut Streets, Harrisburg, Pennsylvania 17126.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "Bernard J. Snyder", is written over the typed name.

Bernard J. Snyder, Program Director
Three Mile Island Program Office
Office of Nuclear Reactor Regulation