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January 15, 1993  
~~980902-92-2089-7~~  
0000-92-1968

Dr. M. T. Masnik  
PDNP Directorate  
US Nuclear Regulatory Commission  
13E3 OWEN  
Washington, DC 20555

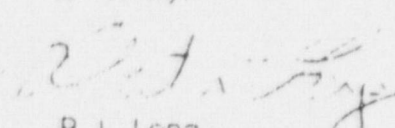
SUBJECT: Proposed List of PDMS Requirements and Commitments

Dear Dr. Masnik:

On December 8, 1992, a public meeting was held at the TMI Training Center to discuss the proposed list of PDMS requirements/commitments that were forwarded by your December 7, 1992 letter. As discussed at that meeting, we understand and agree with your "Requirements for Issuance of the POL," "Requirements for Issuance of the PDMS Technical Specifications," and the license conditions contained in the "Requirements for Entry into PDMS (PDMS technical specifications become effective)." Enclosure 1 presents the GPU Nuclear position/status on each of the above referenced items. There were changes, by mutual agreement during the December 8th meeting, regarding the "additional requirements or licensee commitments [that] must be met prior to entry into PDMS." Enclosure 2 provides our understanding of these requirements with changes indicated by a vertical line in the margin.

Please review the attached information and advise us of your acceptance. We understand that formal transmittal of this list will accompany the TMI-2 Possession Only License.

Sincerely,

  
R. L. Long  
Director, Corporate Services/TMI 2

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March 22, 1993

allow the implementation of PDMS is not expected to be issued until just prior to entry into PDMS and after the staff verifies that all the requirements and commitments that we have agreed upon have been met.

I request that you review the proposed list of PDMS requirements and commitments contained in the attached January 15 1993 letter from GPUN and let me know by the middle of April 1993 as to its acceptability.

Original attached by:

Seymour H. Weiss, Director  
Non-Power Reactors and Decommissioning  
Project Directorate  
Division of Operating Reactor Support  
Office of Nuclear Reactor Regulation

cc w/enclosure:

JRogge, RI

MEvans, RI

IYoung, RI

DISTRIBUTION: [BLOUGH.] [Masnik diskette-lb]

Docket File

EHylton

ONDD R/F

MMasnik

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SWeiss

ONDD:LA

EHylton

3/22/93

ONDD:PM [initials]

MMasnik:lb

3/22/93

SHW  
ONDD:D

SWeiss

3/22/93

them accessible at the TMI 2 site. The staff will verify by reviewing the primary documentation and/or inspection of the actual modification. Once the staff has conducted its review and determined that the requirement or commitment has been satisfied, the staff will close out the item. As other items are completed, the licensee will continue to notify the staff in writing of the completed status and identify the appropriate primary references. The staff and licensee plan to agree prior to notification of completion of an item what constitutes the standard for demonstrating completion of the item.

M PROCEDURES FOR CHANGING THE ABOVE REQUIREMENTS AND COMMITMENTS

During the remainder of the current cleanup effort, conditions may change resulting in a change in the licensee's ability to satisfy the above requirements and commitments. Licensee's request for deviations to the above list of requirements and conditions must be made in writing, as an amendment to the SAR, providing a description of the old requirement or commitment and a description of the change. The deviation request must include a safety analysis evaluating the proposed change. Requests for deviations to the above list must be timely and allow for staff review (typically 60 days). The NRC staff will either approve or disapprove the licensee's request in writing based on the results of the staff review. The licensee understands that PDMS was evaluated and received staff approval based on the requirements and commitments made by the licensee through SAR Amendment 15. Significant changes to the requirements and commitments may invalidate or require a reevaluation of the staff's Safety Evaluation and Technical Evaluation Report.



## J. Flood Protection

1. Ensure that flood panels are provided for all entrances to the control building, and to the entrance of the auxiliary building. (TER 6-36) Doors and entrances to the Control Building Area that are not flood-protected are either watertight or are provided with flood panels. All openings that are potential leak paths (i.e., ducts, pipes, conduits, cable trays) are sealed. (SAR 7.1.4)
2. Verify that the containment basement and auxiliary building sumps level indications will be maintained. (SAR 7.2.3.1.2)
3. Verify that the auxiliary building sump pumps are maintained operational and placed in a manual control mode. (SAR 7.2.3.1.2)
4. Verify that the Miscellaneous Waste Holdup Tank and the Auxiliary Building Sump Tank (ABST) have been isolated from the Radwaste Disposal Gas System and vented via HEPA filters to protect against airborne releases from these tanks. (SAR 7.2.3.1.2)
5. Ensure that a flow path exists to drain down the reactor building basement floor. (SAR 7.2.3.1.2)
6. Verify that freeze protection has been provided for portions of the Waste Disposal Liquid (WDL) system that are determined to be subject to freezing due to deactivation of building ventilation systems. (SAR 7.2.3.1.2)
7. Verify that alternate provisions have been provided for operating the air-operated valves required for the WDL system during PDMS. (SAR 7.2.3.1.2)
8. Ensure that the active sumps have a high level alarm that annunciates in the control room and the PDMS Alarm Monitoring System. (SAR 7.2.3.2.2)

## K. Procedures and Programs

1. Include a surveillance program under which a limited number of rodent carcasses will be analyzed for gamma-emitting isotopes as part of the non-routine Radiological Environmental Monitoring Program. (SAR Supplement 3, A-16)

## L. STANDARDS FOR SATISFYING REQUIREMENTS AND COMMITMENTS

The staff recognizes that many of the above requirements and commitments have been acted upon by the licensee. Once this list is finalized, the licensee will submit a letter that documents which of the listed requirements and commitments have been satisfied. The letter will reference primary documentation (UWIs, procedure numbers, drawings, etc.) that demonstrate that the work was completed or the requirement or commitment met. It will not be necessary to submit the primary reference documents but only have

12. Ensure that the fire system line is cut and blanked off at the fuel-handling building, where the fire system line runs from the diesel generator building. (SAR 7.2.2.2k.; TER 6-32)
13. Deactivate the river water pump house. (SAR 6.1.10 and Supp. 1, Item 14, TER 6-33)
14. Turn over the fire pump house and fire pump 2/FS-P-1 to Unit 1. (SAR 6.1.10 and Supp. 1, Item 14, TER 6-33)
15. Ensure that transient combustibles have been removed from inside the containment and the AFHB to the extent practicable. (SAR 7.2.2.2g.; TER 6-33) This includes most plant items installed after the accident. Fire loading must be less than a 1-hour loading of 80,000 BTU/square foot. (SAR Supp. 1, Item 17)
16. Drain oil to the extent reasonably achievable from the main turbine, main feedwater pumps, emergency feedwater pumps, steam generator feedwater pumps, condensate booster pump reservoirs and hydrogen seal oil unit. (SAR 7.2.2.2h.; TER 6-34)
17. Taken as an aggregate, demonstrate that no more than 57 percent of the original total volume of reactor coolant pump lubricating oil remains in the upper and lower reservoirs of the four reactor coolant pump reservoirs. (SAR Supp. 1, Item 33, TER 6-34)
18. Charcoal filters have been removed from all HVAC systems in TMI-2. (SAR 7.2.2.2i.; TER 6-34)
19. Train and familiarize station fire brigade with the TMI-2 system configurations, plant layout and procedures for TMI-2. (SAR 7.2.2.2m.; TER 6-35)
20. Procedure in place for reactivation of the deactivated portions of the fire protection system if necessary. (SAR 7.2.2.2l.; TER 6-29)
21. Verify that the procedure for inspection of the fire loop drain valves during freezing weather is in place. (SAR 7.2.2.2k.; TER 6-32)
22. Verify that the procedures and system are in place for testing of the operable portion of the fire detection and alarm system. (SAR 7.2.2.2b.; TER 6-34)
23. Verify that procedures for manual suppression of fire by the fire brigade are provided as stated in the FPPE. (TER 6-35)

## 1. Fire Protection

1. Have procedures in place to ensure that the fire mains within the reactor building will be closed with valves drained to the extent reasonably achievable within 30 days following entry into PDMS to minimize the potential for introduction of water into the reactor vessel. (SAR 7.2.2.2.2k.; TER 6-2)
2. Ensure that automatic fire suppression is provided and maintained to areas of the facility and systems which contain significant amounts of combustibles and possible ignition sources (i.e., auxiliary transformers). (SAR 7.2.2.1)
3. Ensure that either the TMI-2 control room or some other location is continuously manned with a fully qualified person or that remote monitoring capabilities are available in TMI-1 control room to identify the specific zone in which a fire in the TMI-2 facility is located. Ensure that procedural control exists to delineate the location of the monitoring activity. (TER 6-29, SAR 7.2.2.2b.)
4. Demonstrate that TMI-1 Operations has accepted responsibility for maintaining the fire service system in operable areas of the plant as required to support operations: in the waste-handling and packaging facility, the respirator cleaning facility and the administration building. (TER 6-29)
5. Deactivate deluge systems in the auxiliary building and the control building. (SAR 7.2.2.3, TER 6-29)
6. Ensure that all Halon systems have been deactivated by disconnecting the cylinders and either emptying or removing them. (SAR 7.2.2.2d)
7. Verify that portable fire extinguishers are located in the areas specified in Figures 7.2-6 and 7.2-7 of the SAR. (SAR 7.2.2.2e.)
8. Verify that self-contained breathing apparatus are available for fire fighting purposes in the areas shown on Figures 7.2-6 and 7.2-7 of the SAR. (SAR 7.2.2.2f.)
9. Ensure that the fire detection system remains operational in the Air Intake Tunnel and the relay room. (SAR 7.2.2.2d.)
10. Ensure that freeze protection has been added to applicable portions of the fire main. (SAR 7.2.2.2j.; TER 6-31)
11. To the extent that fire protection is not required in work or storage areas, ensure isolation of the 12 inch fire service loop, which runs through the AFHB, the control building area and the turbine building (east and west). (SAR 7.2.2.2k.; TER 6-32)



## H Physical Related

1. In reactor containment, reactor building electric power circuits will be deenergized except those necessary for PDMS monitoring, inspection, and surveillance equipment and other PDMS support requirements. (SAR 7.1.1.4, Supp. 1, Item 17; TER 6-34 and 6-35)
2. In the auxiliary building, the power to lighting, fire detectors, and sump level indication circuits will be energized and will remain operational. The auxiliary sump, auxiliary sump tank and associated level indication will also remain operational. (SAR 7.1.2.2; TER 6-37)
3. In the fuel-handling building, low voltage circuits to lighting and fire detection will be energized. (SAR 7.1.3.2; TER 6-37)
4. In the Control and Service Buildings, verify that the electrical distribution will remain configured to power low voltage lighting loads and fire detectors. (SAR 7.1.7.2)
5. Portions of the TMI-2 electrical distribution system will be operational and energized to provide power for the PDMS support systems and their associated controls and instrumentation. Power will be available for area lighting, receptacles, heating, and ventilation to support PDMS activities. (SAR 7.2.5.1.1; TER 6-37)
6. Emergency lighting (8-hr portable emergency lights) is staged with emergency response crew equipment. (SAR 7.2.5.2.1; TER 6-37)
7. Verify that exit signs are powered from the normal lighting system and from a locally mounted battery during emergency conditions. (SAR 7.2.5.2.5)
8. DC power during PDMS will be available. Loads have been consolidated where practicable to reduce the number of energized circuits. (SAR 7.2.5.1.3; TER 6-38)
9. Verify that direct current backup power supplies are provided to the support radiation monitoring during a temporary loss of power. (SAR 7.2.5.1.3; TER 6-38)

2. Update information in the following tables from the SAR as final decontamination results become available. (SAR 5.4.3)

Table 5.3-2 (SAR) "PDMS Radiological Conditions - AFHB"

- Table 5.3-4 "Surface Contamination - Reactor Building"
- Table 5.3-5 "Surface Contamination - AFHB"
- Table 5.3-6 "Surface Contamination - Other Buildings"

3. Perform survey of the service building, elevation 305 ft.; the turbine building, elevation 281 ft. and the containment air control envelope building and provide information in the PDMS SAR before entry into PDMS in order to establish a radiological baseline for the facility. (SAR 5.3.2; TER 4-2)
4. Ensure that a program exists for periodic measurement of radiation and contamination levels to verify radiological conditions. (SAR 7.2.4.1 and 7.2.4.2; TER 6-42 and 6-43).

E. Physical Maintenance in Reactor Building and Vessel

1. Have the capability of inserting a video camera into the reactor vessel to verify fuel location if it is determined at a later time that such an examination is required. (TER 6.3)
2. Create a program plan to perform monthly entries into the reactor building for at least 6 months after placing it into its PDMS condition. (PDMS SAR 7.2.4; TER 5-23)

F. Physical Maintenance in AFHB

1. Create a program plan to perform monthly entries into the AFHB for at least 6 months after placing it into its PDMS condition. (SAR 7.2.4; TER 5.23)
2. Ensure that both fuel pool structures remain intact. (SAR 7.1.3.2)

G. Physical Maintenance in other Buildings

1. Ensure that the Control Room Ventilation Systems (i.e., Control Room HVAC and Cable Room HVAC) and the Service Building Ventilation System are maintained in an operational condition and will be operated as required. (SAR 7.2.6.8,9,10)
2. Maintain the capability to process potentially contaminated liquids. (SAR 7.2.3.1; TER 5-14)



C. Ventilation

1. Verify that a surveillance program exists to ensure AFHB ventilation and filtration operability, maintenance and testing. (SAR 7.1.2 and 7.1.3; TER 6-26)
2. Verify that the licensee has procedures in place to continue to operate the AFHB ventilation system until the Accident Generated Water is no longer being processed or transferred in the AFHB. (TER 6-28)
3. Ensure that penetration R-626 has been upgraded to 5 psi. (SAR Supp. 3, Item B.2; TER 6-17)
4. Ensure that the reactor building breather system is the predominant pathway for effluent and influent to the building during those times that the reactor building ventilation system is not being operated; and that the effluent is filtered and monitored. (SAR 7.2.1.2; TER 6-25)
5. DOP test the HEPA filter in breather prior to entry into PDMS. (SAR 7.2.1.2.2 and Supp. 3, Item B.3; TER 6-25)
6. Ensure installation, actuation setting, and routine surveillance testing of the isolation valve between containment and HEPA filter in the reactor building breather to automatically close upon receipt of a containment pressure increase of 0.25 psi. (SAR 7.2.1.2; TER 5-10, 5-11, and 6-24)
7. Develop and implement a reactor building entry procedure that requires an evaluation of the reactor building atmospheric conditions prior to personnel entry. (SAR 7.2.1.3)
8. Develop and implement procedures for maintaining HEPA filter banks for the Reactor Building Purge System. (SAR 7.2.1.3)
9. Develop and implement procedures for monitoring the Reactor Building vent during reactor building purge. (SAR 7.2.1.3)

D. Plant Contamination Survey

1. Licensee will meet established contamination level goals for entrance into PDMS for each area of the AFHB. If the decontamination goals cannot be met because of the unique situation at TMI-2 or ALARA considerations, the licensee will provide an evaluation of the specific situation to the NRC. (SAR 5.3.1 and Supp. 3, Item A.11; TER p. 4-2)

## ENCLOSURE 2

Additional Requirements/Licensee CommitmentsA. Removal of Water from Reactor Coolant System and Fuel Transfer Canal

1. Remove water to the extent reasonably achievable.
  - Reactor Vessel: drained to less than 10 gallons (38 liters) of water. (SAR 6.2.27.2; TER 5-9)
  - Reactor Building Fuel Transfer Canal. (TER 5-9)
2. Isolate the fuel transfer tubes. (SAR 1.1.2.1).
3. Drill holes in canal seal plate to prevent refueling canal from filling. (TER 5-9)
4. Cover the Reactor Vessel to minimize water entry. (SAR 6.2.27.2)
5. Drain the Submerged Demineralizer System to the extent reasonably achievable. (SAR 6.2.36.2)
6. Drain and shield the "B" spent fuel pool to the extent reasonably achievable. (SAR 6.2.36.2)
7. Drain and cover the "A" spent fuel pool to the extent reasonably achievable. (SAR Supp. 4, Item 1)

B. Radiation Safety & Reduction of Potential for Releases

1. Ship offsite or package and stage for shipment remaining radioactive waste from the major TMI-2 decontamination activities. (SAR 1.1.2.1; TER xiv)
2. Reduce radiation levels within the facility, to the extent reasonably achievable and consistent with ALARA, to allow plant monitoring, maintenance, and inspection. (SAR 1.1.2.1; TER xiv)
3. Apply shielding in critical locations after reactor vessel draindown to reduce dose rates. (TER 5-23)
4. Define and establish an overall surveillance program plan for FDMS environmental protection systems to ensure public health and safety. (TER xiv)

- d. Post-Defueling Monitored Storage Fire Protection Program Evaluation (FPPE). The staff will review this document, which the licensee will likely submit just before entering PDMS.

GPU Nuclear Status: The FPPE will be revised and submitted just prior to entry into PDMS.

- e. Radiological Environmental Monitoring Plan (REMP). Requires NRC review just before the start of PDMS. Currently the licensee has a TMI site REMP with redundant requirements in the TMI 2 Appendix B technical specifications. The staff will review the site REMP approximately 2 months before entering PDMS to verify that the programs discussed in the PDMS SER are included. The radiological environmental monitoring requirements in the current Mode 3 TMI-2 Appendix B technical specifications are to be deleted by a license amendment to be issued independently of PDMS and prior to entry into PDMS. These requirements will be placed in the Offsite Dose Calculation Manual.

GPU Nuclear Status: GPU Nuclear submitted this plan via GPU Nuclear letter C312-92-2091, dated January 4, 1993. There should be no further changes necessary to it prior to entry into PDMS.

- f. A revision to the PDMS SAR, to include the results of the completed plant radiation and contamination surveys just before entering PDMS.

GPU Nuclear Status: The SAR will be revised to include this information and submitted prior to entry into PDMS.



GPU Nuclear Status GPU Nuclear has collected two quarters of data in the Fuel Handling Building and four quarters of data in the Auxiliary Building. The worst case particulate release rate from the six quarters of data is less than 2% of the license condition criteria. We should have no problem collecting the requisite 1 year of pre-PDMS data.

- B. License Condition 2. E. "Unfiltered Leak Rate Test." The licensee needs to develop (and submit) a(n approved) surveillance requirement for the reactor building unfiltered leak rate test (Section 4.1.1.2) to demonstrate compliance with Limiting Condition for PDMS 3.1.1.2.

GPU Nuclear Status A proposed unfiltered leak rate test surveillance requirement will be submitted with PDMS SAR Amendment 16, which will be submitted by January 22, 1993.

- C. License Condition 2. F. "Additional Submittals Prior to Post-Defueling Monitored Storage." According to the proposed POL the following documents need to be submitted and in some cases approved before the facility can enter PDMS.

- a. Site Flood Protection Plan. Requires NRC review. The licensee plans to submit the plan by the end of 1992.

GPU Nuclear Status GPU Nuclear submitted this plan via GPU Nuclear letter C312-92-2091, dated January 4, 1993.

- b. Site Radiation Protection Plan. Requires NRC review. The licensee plans to submit the plan by the end of 1992.

GPU Nuclear Status GPU Nuclear submitted this plan via GPU Nuclear letter C312-92-2091, dated January 4, 1993.

- c. Offsite Dose Calculation Manual (ODCM). Requires NRC review and approval and a license amendment to TMI-2 license. On June 18, 1992, the staff received an acceptable ODCM from the licensee. The staff is processing a license amendment for TMI-2 which should be completed by the end of 1992. The staff should again review the ODCM just before the licensee enters PDMS to verify that references in the ODCM to the Mode 3 technical specifications have been removed and that information regarding the reactor building breather has been incorporated.

GPU Nuclear Status The ODCM will be revised and submitted next prior to entry into PDMS.

- d. Post-Defueling Monitored Storage Fire Protection Program Evaluation

2. Development of a procedure for NRC staff authorization to enter PDMS. The staff proposes that the PDMS Technical Specifications be issued at the time the POL is issued. The PDMS Technical Specifications would be in effect only after NRC staff authorization. The staff authorization would be granted once the licensee certifies that all requirements and commitments for PDMS (see III. below) have been satisfied.

GPU Nuclear Position: GPU Nuclear agrees with the staff proposal.

3. Development of a PDMS punchlist that lists requirements and commitments that were part of the PDMS SER and TER review. This list was initially developed by the NRC staff.

GPU Nuclear Position: This letter and staff acceptance of same creates the subject PDMS punchlist.

4. Development and licensee agreement of a standard of what constitutes completion and what is required for NRC verification of open items. During the open meeting to discuss each of the items in III. below the staff and licensee will agree upon what form of primary documentation is required for each item. This issue is further discussed in item III. L. below.

GPU Nuclear Position: GPU Nuclear agrees with the staff proposal in item III. L.

5. Development of a procedure for resolving deviations from the TMI-2 punchlist. Once the list of remaining activities has been agreed upon by both the licensee and the NRC, then future changes to the list will have to be documented, a safety evaluation performed by the licensee, and NRC staff review and approval of the deviation or change. This issue is discussed further in item III. M. below.

GPU Nuclear Position: GPU Nuclear agrees with the staff proposal in item III. M.

### III. REQUIREMENTS FOR ENTRY INTO PDMS (PDMS TECHNICAL SPECIFICATIONS BECOME EFFECTIVE)

1. The following are the conditions in the Proposed PDMS POL, contained in the February 20, 1992 letter, that must be met prior to the entry into PDMS:
- A. License Condition 2. D. "Special Auxiliary and Fuel Handling Building Ventilation Study." The monitoring program [that is required prior to terminating continuous operation of the AFHB ventilation systems] shall include at least 1 year of data before entry into PDMS. The licensee currently has collected two quarters of pre-PDMS data.

## ENCLOSURE 1

### Requirements for Issuance of the POL and PDMS Technical Specifications, and the PDMS License Conditions

#### I. REQUIREMENTS FOR ISSUANCE OF THE POL

1. Before the staff can issue the POL the licensee must submit the final Post-Defueling Survey Report [PDSR] for the Reactor Vessel [RV] that provides both an estimate of the quantity of remaining fuel and demonstrates that the fuel will remain subcritical. The staff will review the licensee's submittal and conduct an independent assessment of the criticality potential for both the steady state and accident scenarios.

GPU Nuclear Status: The RV criticality safety analyses were submitted via GPU Nuclear letter C312-92-2080, dated December 18, 1992. The RV PDSR will be submitted by February 1, 1993. They are being submitted separately to facilitate NRC review.

2. The statement, in paragraph 2.A. of the proposed POL, "... and is described in the Post Defueling Monitored Storage Safety Analysis Report as supplemented and amended and the Environmental Report as supplemented and amended" needs to be revised. The identified documents describe the facility as it would be configured during PDMS and not the current Mode 3 condition.

GPU Nuclear Status: A proposed revision to this statement will be submitted by January 22, 1993, along with PDMS SAR Amendment 16.

3. Paragraph 2.C (1) of the POL refers to the Technical Specifications contained in Appendix A only. This refers to the Technical Specifications that would be in force after the licensee enters PDMS. The current Technical Specifications still have a part A and part B. The proposed PDMS technical specifications has only an Appendix A. Therefore the POL would have to be changed to reference both A and B.

GPU Nuclear Status: A proposed revision to this portion of the POL will be submitted by January 22, 1993, along with PDMS SAR Amendment 16.

#### II. REQUIREMENTS FOR ISSUANCE OF THE PDMS TECHNICAL SPECIFICATIONS

1. Resolution of the amount of fuel remaining in the reactor vessel and the potential for recriticality.

GPU Nuclear Status: Same as item 1.1. above