

Three Mile Island Nuclear Station, Unit 2 (TMI-2)  
Operating License DPR-73  
Docket No. 50-320

Technical Specification Change Request (TSCR) No. 63 - Revision 1

The Licensee requests that the attached changed pages of the Appendix B Technical Specifications (Tech. Specs.) (i.e., pages 3-1, 5-3, 5-4, 5-5, 5-6, and 5-7) replace Section 3.1 and the corresponding pages of Section 5 (i.e., pages 5-3 through 5-9) in the Appendix B Tech. Specs.

Description of Change

Sections 3.1, 3.1.1.a.(4), 3.1.2.a.(1), 5.5.1, 5.5.4.C and D, 5.5.5, 5.5.6, 5.6.1.A (1) and 5.6.1.B have been deleted in their entirety. Sections 5.5, 5.5.2, 5.5.3, 5.5.4 and 5.5.4.A were revised to reflect these deletions. Section 5.4 was revised to reflect the continuing effectiveness of the National Pollutant Discharge Elimination System (NPDES) permit.

Reason for Change

This change is requested to delete those pages of Appendix B which consist of non-radiological monitoring requirements, studies, and reporting requirements. The decision by the licensee to dispose of the accident-generated water (AGW) by controlled evaporation obviates the need to continue the non-radiological monitoring that use of the river discharge alternative would have required. In addition, the licensee has completed 15 years of non-radiological monitoring [i.e., ten (10) years since the 1979 accident] with no findings of significant impact upon the environment.

Environmental Evaluation Justifying Change

The primary reason for requiring continuance of the non-radiological monitoring program is stated in Reference 1 as follows: "Those studies [General Ecological Survey of the York Haven Pond] are necessary to document the continuing health and status of the biotic community and the impacts of radiological effluents, should the river alternative be chosen for disposal of the processed accident water." Further: "These studies should continue at least until a decision is reached on the ultimate disposal of the PAW [Processed Accident Water]." The decision by the licensee to dispose of the AGW by controlled evaporation obviates the necessity to continue the non-radiological studies that have continued for over 15 years.

These studies originated in 1974 as a "discovery" program designed to build the aquatic sampling program. In 1977, TMINS commenced a pondwide survey of York Haven Pond with a scope that remained unchanged through 1982. A reduced scope, implemented in 1983, continued the pondwide survey by sampling stations consistent with prior sampling programs. In essence, TMI has performed a pondwide aquatic monitoring program consistent in scope for over 12 years and, for varying degrees, for over 15 years. The over 15 years of non-radiological monitoring have confirmed the continued absence of adverse environmental impact from the TMINS on the aquatic biota of the Susquehanna River. Aquatic sampling of fish and sediments will continue for radiological sampling.

The following is a section by section justification for deleting the non-radiological technical specifications contained in Sections 3 and 5.

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### Section 3.1 Non-radiological Monitoring

The bases for continuing the non-radiological monitoring program include the following statements:

- A. The Programmatic Environmental Impact Statement (PEIS) states: "These programs monitor the aquatic biota and sport fishery in that segment of the Susquehanna River where the TMI effluent first enters, in the last [sic] dilute, and where effects, if any, would be seen first."
- B. A fishery is made of three essential components: (1) the fish, (2) their environment or habitat, and (3) the people who exploit or depend on the biota. A disruption of any of the components could affect the fishery.
- C. Knowledge of the effects of TMINS operation on aquatic biota "will be invaluable in allaying the fears of resource users downstream, including the Chesapeake Bay."

#### Justification of Change

- A. As previously stated, the TMINS Aquatic Monitoring Program has continued in varying degrees for over 15 years. In that time, changes to the aquatic ecosystem generally reflected changes in environmental conditions and the dynamic interactions of organisms and their habitats. The wealth of data collected failed to establish any adverse environmental impact resulting from the operation of the TMINS. The NRC acknowledged this lack of impact in their written bases for Amendment 21 of the TMI-2 Tech. Specs.
- B. (1) The fish: With over 15 years of sampling data, both fish and macroinvertebrate populations in the vicinity of TMINS are well documented. Population estimates, condition factors, movement studies, thermal plume response and impingement/entrainment effects were studied to a degree that greatly exceeds typical requirements in the nuclear industry. These studies documented the natural variations in the aquatic ecosystem and failed to demonstrate an adverse impact from the TMINS.
- (2) Their environment or habitat: Similarly, the historical data failed to establish habitat variability or adverse impact resulting from TMINS operation. Natural phenomenon such as river flow, depth, substrate and velocity determine the type and diversity of the habitat. Aquatic organisms respond to the habitat conditions created by these natural phenomenon.
- (3) The people who exploit or depend on the biota: Creel survey results collected since 1975 indicate a healthy and thriving fishery in the TMINS vicinity. Four species dominated the catch and harvest during the study period: channel catfish, rock bass, smallmouth bass and walleye. Their relative abundance in creel data appear unrelated to TMINS operation. After the TMI-2 accident, 7.6% of the anglers surveyed reported a change in use of their catch because of TMI. This number, though never large, steadily declined over the years. In 1988, none of the anglers interviewed reported a change. This indicates that anglers exploiting the fishery near TMI are not significantly impacted by the operation of the TMINS.

C. The enormous amount of data collected since 1974 provide a wealth of scientific knowledge unequalled for most aquatic systems. Adult population estimates and movement studies showed no relation to TMINS operation. Larval fish densities are only minimally impacted by TMINS operation and no significant, adverse impact to adult populations were measured as a result of impacts to larval fish. Juvenile fish densities and movements correspond to habitat preferences and natural environmental conditions, not to TMINS operation. Thermal and physical impacts of the TMINS liquid effluent are minor, extremely localized and do not result in adverse impact to the benthic or fish populations near the TMINS. In addition, monitoring programs conducted by the Maryland Power Plant and Environmental Review Division have never detected evidence of the TMINS liquid effluents in the lower Susquehanna River. In short, the wealth of knowledge gathered to date on the effects of the TMINS operation is sufficient and continues to demonstrate no adverse impact to the aquatic environment.

#### Section 3.1.1.a.(4) Water Quality Analysis

The bases for examination of the water quality cite a need to obtain pH, temperature, dissolved oxygen and total dissolved solids data to evaluate trends and unusual occurrences suggested by biological observations.

#### Justification of Change

Aquatic monitoring conducted since 1974 has shown strong relationships between fish populations and select water quality parameters. These relationships are well documented and further reflect the dynamic interactions of aquatic systems. No adverse impacts on water quality resulting from the TMINS operation were documented. Rather, natural weather and river conditions dictate water quality variables. It is noteworthy that water quality measurements of site discharges to the Susquehanna River will continue in accordance with the TMINS National Pollutant Discharge Elimination System (NPDES) permit issued by the Pennsylvania Department of Environmental Resources (Pa DER).

#### 3.1.2.a.(1)(a) Benthic Macroinvertebrates

The bases state that benthic organisms are sedentary and, therefore, cannot avoid potential impacts of the TMINS effluents.

#### Justification of Change

In the bases to Amendment 21, the NRC acknowledged that data collected through 1982 failed to show evidence of significant, adverse impacts from TMINS operation on the benthic community. Data collected since 1982 verify this conclusion. These data document the high variability in benthic populations resulting from natural fluctuations of environmental phenomena.



### 3.1.2.a.(1)(b) Ichthyoplankton

The bases state that TMINS operation may impact ichthyoplankton populations in Lake Frederick.

#### Justification of Change

The bases of Amendment 21 also state: "All studies have indicated that no significant, adverse impacts resulted from the activities at the TMINS." Additional studies since Amendment 21 confirm the absence of adverse impacts. These data strongly correlate variability of ichthyoplankton densities to natural spacial and temporal distributions of species rather than to any influence of the TMINS discharge.

### 3.1.2.a.(1)(c) Fish

The bases state that TMINS operation may impact fish populations by impinging on adult and juvenile fish and by entraining eggs and larvae.

#### Justification of Change

Impingement and entrainment studies were deleted by the NRC in Amendment 21. The NRC also stated in the amendment that all studies indicated that no significant, adverse impacts on adult and juvenile fish result from the TMINS operation. Additional studies since Amendment 21 confirm this lack of impact. The electrofishing and seine data show fish abundance is affected by seasonal changes in river flow, water temperature, habitat difference and the natural variations inherent in fish populations. Creel surveys, conducted since 1975, indicate a healthy sport fishery in the TMINS vicinity. Based on these studies there is little evidence that TMINS has significant, adverse impact to fish populations in the Susquehanna River.

### 5.4 State and Federal Permits and Certificates

The sole revision is to delete the expiration date of the TMI-2 NPDES permit.

#### Justification of Change

The NPDES permit is renewed prior to expiration; the current permit expiration date is September 16, 1991. The change to Section 5.4 reflects the continuing effectiveness of the NPDES permit.

### 5.5 Procedures

The sole revision is to specify that this section refers to "radiological" procedures.

#### Justification of Change

The purpose of this change is clarification.

### 5.5.1 Environmental Program Description Document

This section details the contents of the environmental program description document necessary to implement the environmental monitoring and special programs requirements of Sections 3.1 and 4.

#### Justification of Change

Section 3.1 is being deleted in its entirety. In addition, the remaining special program requirements of Section 4 do not necessitate an environmental program description document. Therefore, this section should also be deleted.

### 5.5.2 Quality Assurance of Program Results

The sole revision is to specify that this section refers to "radiological" procedures.

#### Justification of Change

The purpose of this change is clarification.

### 5.5.3 Compliance With Procedures

The sole revision is to specify that this section refers to "radiological" procedures.

#### Justification of Change

The purpose of this change is clarification.

### 5.5.4 Changes in Procedures, Station Design or Operation

The changes proposed in this section are comprised of the following:

- a. Specifying that this section refers to "radiological" procedures; and
- b. Deleting the references to Sections 4, 5.5.1, and 5.5.5.

#### Justification of Change

- a. The purpose of this change is clarification.
- b. This subsection is not germane to the remaining special programs in Section 4. In addition, Sections 5.5.1 and 5.5.5 are being deleted in their entirety. Therefore, references to these sections should also be deleted.

### 5.5.5 Consistency With Initially Approved Programs

This section is concerned with modifications or changes to the environmental program description document discussed in Section 5.5.1.

### Justification of Change

Section 5.5.1 is being deleted in its entirety; therefore, this section should also be deleted.

### 5.5.6 NRC Authority to Require Revisions

This section is concerned with modifications or revisions to the environmental program description document discussed in Section 5.5.1.

### Justification of Change

Section 5.5.1 is being deleted in its entirety; therefore, this section should also be deleted.

### 5.6.1.A.(1) Annual Environmental Operating Report Part A Nonradiological

This section details the contents of the non-radiological environmental monitoring program report required by Sections 3.1 and 4.

### Justification of Change

Section 3.1 is being deleted in its entirety; Section 4 consists of Subsection 4.6, "Exceptional Occurrences," only. In the event that a nonradiological exceptional environmental occurrence as defined in Subsection 4.6 occurs, a nonroutine report will be submitted in accordance with Section 5.6.2. Any changes made to relevant state and federal permits and certifications will be reported to the NRC within 30 days in accordance with Section 5.7.2. Therefore, there is no need for an annual radiological environmental operating report and this section should be deleted.

### 5.6.1.B Data Reporting Formats

This section is concerned with the results of analysis of non-radiological environmental data collected in accordance with Section 3.1.

### Justification of Change

Section 3.1 is being deleted in its entirety; therefore, this section should also be deleted.



### No Significant Hazards Consideration

10 CFR 50.92 provides the criteria which the Commission uses to evaluate a No Significant Hazards Consideration. 10 CFR 50.92 states that an amendment to a facility license involves No Significant Hazards if operation of the facility in accordance with the proposed amendment would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated, or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated, or
3. Involve a significant reduction in a margin of safety.

The proposed change to delete non-radiological monitoring requirements from the TMI-2 Recovery Technical Specifications has no impact on the safety of the evolutions occurring at TMI-2. Over 15 years of non-radiological monitoring have confirmed the continued absence of significant adverse environmental impact on the aquatic biota of the Susquehanna River from the TMINS. In addition, the decision to dispose of AGW by controlled evaporation removed the major mechanism for potential environmental impact used as a basis in License Amendment 21 to continue the non-radiological monitoring program.

Therefore, the proposed changes do not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated. In fact, the licensee decision not to discharge AGW directly into the Susquehanna River reduces the potential for environmental impact; the proposed changes incorporate that decision into the TMI-2 Tech. Specs.; or
2. Create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes only involve deleting non-radiological studies that are unnecessary considering the AGW decision; or
3. Involve a significant reduction in a margin of safety. There is no impact on any margin of safety. In fact, with regard to the aquatic biota of the Susquehanna River, the licensee decision to evaporate the AGW obviates the need to continue the non-radiological monitoring that the river discharge alternative would have required.

Based on the above analysis, it is concluded that the proposed changes involve no significant hazards considerations as defined by 10 CFR 50.92.

### References

1. Memorandum from Ronald L. Ballard, Chief, Environmental Engineering Branch, DE, to Oliver D. T. Lynch, Jr., Section Leader, Environmental Review Section, TMI Program Office, NRR, "Review of GPU Technical Specifications Change Request No. 38, Re: TMI-2 Aquatic Monitoring Program," dated October 1, 1982.

3.0 ENVIRONMENTAL MONITORING

3.1 NON-RADIOLOGICAL MONITORING

Deleted



### 5.3.2 AUDIT RESPONSIBILITY

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### 5.4 STATE AND FEDERAL PERMITS AND CERTIFICATES

Section 401 of PL 92-500, the Federal Water Pollution Control Act Amendment of 1972 requires any applicant for a Federal license or permit to conduct any activity which may result in any discharge into navigable waters to provide the licensing agency a certification from the State having jurisdiction that the discharge will comply with applicable provisions of Sections 301, 302, 306, and 307 of the FWPCA. Section 401 of PL 92-500 further requires that any certification provided under this section shall set forth any effluent limitations and other limitations, and monitoring requirements necessary to assure that any applicant for a Federal license or permit will comply with the applicable limitations. Certifications provided in accordance with Section 401 set forth conditions on the Federal license or permit for which the certification is provided. Accordingly, the licensee shall comply with the requirements, with respect to Section 2, if applicable, and 3 of these ETS, set forth in the 401 certification dated November 9, 1977 or its currently applicable revision, issued to the licensee by the Pennsylvania Department of Environmental Resources, which requires, among other things, that the licensee comply with effluent limitations stipulated in NPDES permit PA-0009920, effective January 30, 1975. Subsequent revisions to the permits and/or certifications will be accommodated in accordance with the provisions of Subsection 5.7.2.

### 5.5 PROCEDURES

Detailed written procedures, including checklists and instructions, shall be prepared and followed to implement the environmental technical specifications. Radiological procedures shall include sampling, data recording and storage, instrument calibration, measurement and analyses, and actions to be taken when limits are exceeded. Testing frequency of any alarms shall be included. These frequencies shall be determined from experience with similar instruments in similar environments and from manufacturers' technical manuals.

Station standard operating procedures shall include provisions, in addition to the procedures specified above, to ensure that all station systems and components are operated in compliance with the appropriate limiting conditions for operations established as part of the environmental technical specifications.

#### 5.5.1 ENVIRONMENTAL PROGRAM DESCRIPTION DOCUMENT

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### 5.5.2 QUALITY ASSURANCE OF PROGRAM RESULTS

Radiological procedures shall be established which will assure the quality of ETS program results, including analytical measurements. These radiological procedures shall document the program in policy directives, designate responsible organizations or individuals, describe purchased services (e.g., contractual laboratory or other contact services), and provide for audits of results and procedures by licensee personnel. In addition, these quality assurance procedures shall provide for systems to identify and correct deficiencies in technical monitoring programs or related administrative activities, to investigate anomalous or suspect results, and to review and evaluate program results.

### 5.5.3 COMPLIANCE WITH PROCEDURES

In addition to the radiological procedures specified in Subsection 5.5, the station standard operating procedures shall include provisions to ensure that each unit and all its systems and components are operated in compliance with the conditions established in these ETS.

### 5.5.4 CHANGES IN PROCEDURES, STATION DESIGN OR OPERATION

Changes in radiological procedures, station design or operation as described in Appendix B Technical Specifications Section 2 and 5 may be made subject to conditions described below, provided such changes are independently reviewed and approved by the appropriate management level and groups (as defined in Appendix A Tech. Spec. Section 6.0) prior to implementation. Changes to monitoring programs as described in Appendix B Technical Specifications Section 3 may be made subject to the conditions described below, and must be reviewed and approved by the Manager, Environmental Controls prior to implementation.

- A. The licensee may make changes in the station design and operation without prior Commission approval, unless the proposed change, test or experiment involves a change in the objectives of the ETS or an unreviewed environmental question.
- B. A proposed change, test or experiment shall be deemed to involve an unreviewed environmental question if it concerns (1) a matter which may result in a significant increase in any adverse environmental impact previously evaluated in the final environmental impact statement as modified by staff's testimony to the Atomic Safety and Licensing Board, supplements thereto, environmental impact appraisals, or in initial or final adjudicatory decisions; or (2) a significant change in effluents or power level as specified in Paragraph 51.5(b)(2); or (3) a matter not previously reviewed and evaluated in the documents specified in (1) of this section which may have a significant adverse environmental impact.
- C. Deleted
- D. Deleted

5.5.5 CONSISTENCY WITH INITIALLY APPROVED PROGRAMS

Deleted

5.5.6 NRC AUTHORITY TO REQUIRE REVISIONS

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5.6 STATION REPORTING REQUIREMENTS

5.6.1 ROUTINE REPORTS

A.(1) ANNUAL ENVIRONMENTAL OPERATING REPORT PART A NONRADIOLOGICAL

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A.(2) ANNUAL ENVIRONMENTAL OPERATING REPORT PART B RADIOLOGICAL\*

Routine Radiological Environmental Operating Reports covering the operation of the unit during the previous calendar year shall be submitted to the Commission prior to May 1 of each year.

The Annual Radiological Environmental Operating Reports shall include summaries, interpretations, and an analysis of trends of the results of the radiological environmental surveillance activities for the report period, including a comparison with preoperational studies, with operational controls as appropriate, and with previous environmental surveillance reports, and an assessment of the observed impacts of the plant operation on the environment. The reports shall also include the results of land use censuses required by Specification 3.2.2.

The Annual Radiological Environmental Operating Reports shall include the summarized tabulated results of analysis of all radiological environmental samples and environmental radiation measurements required by Table 3.2-1 taken during the period pursuant to the locations specified in the Table and Figures in the ODCM in a format similar to the table in the Radiological Assessment Branch Technical Position, Revision 1, November 1979. In the event that some individual results are not available for inclusion with the report, the report shall be submitted noting and explaining the reasons for the missing results. The missing data shall be submitted as soon as possible in a supplementary report.

The reports shall also include the following: a summary description of the radiological environments monitoring program; a map(s) of all sampling locations keyed to a table giving distances and directions from a point that is midway between the Reactor Buildings of TMI-1 and TMI-2; the results of license participation in the Interlaboratory Comparison Program, required by Specification 3.2.3; discussion of all deviations from the sampling schedule of Table 3.2-1; discussion of all the required analyses in which the LLD required by Table 3.2-2 was not achievable.

\*A single submittal may be made for a multiple unit station.



B. DATA REPORTING FORMATS

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C. QUARTERLY RADIOLOGICAL RELEASES AND ESTIMATED DOSE REPORT

The following information shall be submitted in accordance with 10 CFR 50.4. This information shall be submitted on a calendar quarter basis (January-March, April-June, July-September, and October-December) and shall be submitted no later than 60 days following the end of each calendar quarter.

- (1) Estimates of the amounts and types of radioactivity that were released to the environment during the quarter and during the calendar year. This shall include estimates of the total activity of each nuclide and time rate of release of each nuclide.
- (2) Estimates of populations and maximum individual doses which occurred during the calendar quarter and during the calendar year shall be provided. The estimates shall be based on actual hydrological and meteorological conditions which occurred during the releases. Computational methods shall be those of U.S. NRC Regulatory Guides 1.109 (Revision 1, October 1977), 1.111 (Revision 1, July 1977), 1.112 (Revision O-R, April 1976) and 1.113 (Revision 1, April 1977). These calculations shall be based on estimates of actual population distributions during the releases and shall take into consideration factors such as boating or fishing recreation.

5.6.2 NONROUTINE REPORTS

A report shall be submitted in the event that a Tech. Specs. Limiting Condition for Operation (Section 2), if applicable, is exceeded or if an "Exceptional Occurrence" as specified in Section 4.6 occurs. Report shall be submitted under one of the report schedules described below.

5.6.2.a PROMPT REPORT

Those events specified as prompt report occurrences shall be reported within 24 hours by telephone, telegraph, or facsimile transmission to the NRC followed by a written report to the NRC within 30 days.

5.6.2.b THIRTY DAY EVENT

Nonroutine events not requiring a prompt report as described in Subsection 5.6.2.a shall be reported to the NRC either within 30 days of their occurrence or within the time limit specified by the reporting requirement of the corresponding certification or permit issued pursuant to Sections 401 or 402 of PL 92-500, whichever time duration following the nonroutine event shall result in the earlier submittal.

### 5.6.2.c CONTENT OF NONROUTINE REPORTS

Written 30-day reports and, to the extent possible, the preliminary telephone, telegraph, or facsimile reports shall (a) describe, analyze, and evaluate the occurrence, including extent and magnitude of the impact, (b) describe the cause of the occurrence, and (c) indicate the corrective action (including any significant changes made in procedures) taken to preclude repetition of the occurrence and to prevent similar occurrences involving similar components or systems.

## 5.7 CHANGES IN ENVIRONMENTAL TECHNICAL SPECIFICATIONS AND PERMITS

### 5.7.1 CHANGE IN ENVIRONMENTAL TECHNICAL SPECIFICATIONS

Request for changes in environmental technical specifications shall be submitted to the NRC for review and authorization per 10 CFR 50.90. The request shall include an evaluation of the environmental impact of the proposed change and a supporting justification. Implementation of such requested changes in ETS shall not commence prior to incorporation by the NRC of the new specifications in the license.

### 5.7.2 CHANGES IN PERMITS AND CERTIFICATIONS

Changes or addition to required Federal, State, local, and regional authority permits and certificates for the protection of the environment that pertain to the requirements of these ETS shall be reported to the NRC within 30 days. In the event that the licensee initiates or becomes aware of a request for changes to any of the water quality requirements, limits or values stipulated in any certification or permit issued pursuant to Sections 401 and 402 of PL 92-500 which is also the subject of an ETS reporting requirement, NRC shall be notified concurrently with the authorizing agency. The notification to the NRC shall include an evaluation of the environmental impact of the revised requirement, limit or value being sought.

If, during NRC's review of the proposed change, it is determined that a potentially severe environmental impact could result from the change, that NRC will consult with the authorizing agency to determine the appropriate action to be taken.

## 5.8 RECORDS RETENTION

Records and logs relative to the following areas shall be made and retained throughout the term of the operating license. These records and logs shall be made available to NRC on request.

- a. Records and drawing changes detailing station and unit design changes made to system and equipment which could potentially affect the environment.
- b. Records of all data from environmental monitoring, surveillance and study activities required by these environmental technical specifications.