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Docket No. 50-320

K. Kniel, Chief, Light Water Reactors Branch #2, RL

REGULATORY STAFF POSITIONS: THREE MILE ISLAND NUCLEAR STATION, UNIT 2:  
QUALITY ASSURANCE, INITIAL TEST PROGRAM

Plant Name: Three Mile Island Nuclear Station, Unit 2  
Licensing Stage: OL  
Docket Number: 50-320  
Responsible Branch: LWR #2-2  
Project Manager: B. Washburn  
Requested Completion Date: February 14, 1975  
Review Status: Awaiting Information

The Quality Assurance Branch has completed its review of Section 14 of the FSAR (through Amendment #24) for Three Mile Island Nuclear Station, Unit 2.

Our positions on Section 14 are enclosed.

Original signed by:  
Richard H. Vollmer

Richard H. Vollmer, Chief  
Quality Assurance Branch  
Division of Reactor Licensing

Enclosure:  
As stated

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QUALITY ASSURANCE PROGRAM

413.1  
(14.1)  
(RSP)

Your response in Amendment 23 to our RAI item 41.6 is not sufficient to complete our review. Our review disclosed that test abstracts have not been submitted for a total of 21 tests identified in Tables 14.1-1, 14.1-2, and 14.1-3. The NRC staff's position is that test abstracts should be submitted for all preoperational, low power and power ascension tests. Describe your plans to conform to this position.

413.2  
(14.1)  
(RSP)

Certain of your responses in Amendment 21, to our RAI item 41.7, are not sufficient to complete our review. The numbers of the items listed below are keyed to your responses to item 41.7:

Item 6 It is the NRC staff's position that preoperational testing should be conducted to verify proper load group assignments of redundant onsite electrical power systems in accordance with the measures described in Regulatory Guide 1.41. State your plans to conform to this position or provide specific justification for deviating from this guide.

Item 7 It is the NRC staff's position that preoperational in-place testing of the HEPA and activated carbon filters used in the atmospheric purge system should be conducted in accordance with Regulatory Guide 1.52. State your plans to conform to this position or provide specific justification for deviating from this guide.

Item 9.c The information provided in your response is inconsistent with information provided in Table 14.1-3 relating to testing power levels. It is the NRC staff's position that suitable testing should be conducted to demonstrate the capability of the plant to operate within design limits following a turbine trip from 100 percent of rated power. State your plans to conform to this position or provide specific justification for not performing this test.

Item 10 It is the NRC staff's position that preoperational testing of the Emergency Core Cooling Systems for the facility should be conducted in accordance with all Regulatory positions contained in Regulatory Guide 1.79. State your plans to conform to this position or provide specific justification for not following this guide.

- 413.3  
(14.1)  
(RSP) Your response in Amendment 21 to our RAI item 41.13 is not sufficient to complete our review. The NRC staff's position is that all core alterations, including initial fuel loading shall be directly supervised by a Senior Licensed Operator. State your plans to conform to this position. Include in your response, your minimum qualification requirements for the position of the CPU Initial Fuel Loading Supervisor.
- 413.4  
(14.1)  
(RSP) The description in Amendment 21 of your program for review of abnormal occurrence reports from operating reactors, provided in response to Item 41.17, is not acceptable. The AEC Reactor Plant Operating Experience reports referenced in your reply were discontinued in late 1974. The NRC staff's position is that operating and testing experiences of operating power reactors should be appropriately utilized in the development and conduct of initial test programs. State your plans to conform to this position. In your reply, describe the scope of your program and address the source(s) of information that will be utilized and the types of facilities or specific reactors that will be included in your program.
- 413.5  
(14.2)  
(RSP) Your response in Amendment 21 to our RAI item 41.19, was not acceptable. The NRC staff's position is that the application should demonstrate the adequacy of personnel for performance of the test program. Therefore, provide a description of your plans for staffing during each major phase of the initial test program (preoperational, fuel loading and low power testing, and power ascension testing.)
- 413.6  
(14.1)  
(RSP) Your responses in Amendment 21, to our RAI item 41.20 were not totally adequate. The NRC staff's position is that each nuclear power plant should be thoroughly tested during the initial test program. The NRC staff considers that suitable testing should be conducted to demonstrate proper operation of; 1) systems and design features utilized to support normal operation of the facility, and 2) standby systems or design features provided to prevent, limit or mitigate the consequences of postulated accidents. Therefore, modify or clarify your application for the items or issues described below to provide assurance that suitable testing will be accomplished. The number of the items below are keyed to your responses to Item 41.20 contained in Amendment 21.
- (3) TP 160/4 does not provide for appropriate tests of the thermal recombiner system.
- (7) Provide assurance that the entire system will be appropriately tested during the preoperational test phase.
- (12) TP 600/10 does not provide for appropriate tests of all reactor coolant system leak detection systems.

- (14) Provide assurance that the system will be appropriately tested.
- (17) Provide assurance that the systems will be appropriately tested.
- (20) The information pertaining to safety classification that was provided in your response is inconsistent with other information provided in Section 10 of the FSAR. Provide assurance that suitable tests will be conducted to demonstrate proper operation of main steam line isolation valves.
- (23) Provide assurance that those portions of the communications systems that are utilized for evacuation and other alarms and for public address within the plant will be preoperationally tested.
- (25) Provide assurance that the irradiated fuel transfer system will be preoperationally tested.
- (26) Provide assurance that the system will be preoperationally tested.
- (28) Provide assurance that the systems will be preoperationally tested.
- (31) Provide assurance that appropriate expansion and restraint tests for the power conversion system and the emergency core cooling systems will also be conducted for piping and components located outside of the reactor building.
- (33) Provide assurance that the entire ventilation system will be preoperationally tested.
- (34) Provide assurance that the atmospheric steam dump valves will be appropriately tested.

413.7  
(14.1)

Our comparison of your initial test program with your accident analyses disclosed that certain components, systems, and design features are not scheduled to be tested. The NRC staff's position is that your initial test program should include sufficient tests to demonstrate the operability of components, systems, and design features assumed to operate, to prevent, limit, or mitigate postulated accidents as described in the accident analyses provided in the FSAR.

Therefore, provide assurance that the below listed components, systems, and design features will be preoperationally tested to the extent practicable, to demonstrate their capability to operate as designed.

- (1) Integrated control system

- (2) Turbine by-pass valves
- (3) Condensate and main feedwater systems
- (4) Turbine stop valves.

413.8  
(14.1)  
(RSP)

Your response in Amendment 21, to our RAI item 41.7, stated compliance with Regulatory Guide 1.68 with certain noted exceptions. However, our review of your power escalation testing program provided in Table 14.1-3 discloses differences in test power levels for certain tests than provided in Regulatory Guide 1.68. Modify or clarify your application to establish the degree of conformance with Regulatory Positions D.1.e, D.1.f, D.1.h, D.1.l, and D.1.r contained in Appendix A to Regulatory Guide 1.68.