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Mr. Marvin Mendonca
U.S. Nuclear Regulatory Commission
Project Manager
Nuclear Reactor Regulation
One White Flint North
11555 Rockville Pike
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Washington, DC 20852-2738

Reference: TAMU AGN Progress Summary and Plan

Dear Mr. Mendonca:

This letter is to inform you of the status of and the restart plans for the Texas A&M University (TAMU) AGN-201 reactor. As you know, the TAMU Nuclear Engineering Department (NUEN) is upgrading its AGN-201 teaching reactor. Concurrent with this, NUEN will provide the remaining documentation to complete the license renewal process.

We expect to have the entire upgrade process completed by September 15, 2003, and be ready for restart shortly thereafter. It is our intention to restart when the console is complete, installed and tested and the 10CFR50.59 review is complete. Please note that the timeline for updating the SAR and for completing the work on the console are not related. While we expect to be ready for restart on September 15, we are working to be ready by an earlier date.

AGN Upgrade and Restart

The TAMU Nuclear Science Center (NSC) electronics staff is performing a complete redesign and rebuild of the Reactor Console for the AGN-201 reactor. The five phases of work for the entire system and for each subassembly are: remove old equipment, design new circuits and systems, build new subassemblies, test subassemblies and finally assemble and test entire system. A summary description of each phase follows.

Phase 1: Removal of Old Equipment

The AGN-201 Control Console is at the Nuclear Science Center. All electronic circuits are removed and the new circuitry is installed.

The Control Rod Drive Mechanisms (CRDMs) and the detection circuitry are still in place. Since the CRDMs cannot be removed from the control rods, equipment removal and installation will take place in position. When phases 1 through 4 are done for many of the subassemblies, the NSC staff will move the entire console to the AGN control room where they will install and test the CRDM circuitry in place and conduct the final console tests. Phase 1 will not be completed for the CRDMs until phase 4 is completed on most other components.

Phase 1 is complete for all but the in-place components.

Phase 2: Design

After thorough investigation of the console equipment condition and design, the electronics staff decided to redesign and rebuild the entire reactor control system. The new system will include a computer program that records all recorded reactor parameters and provides indication of reactor parameters and control-rod height indications. The code for this program is complete and undergoing bench-testing at the NSC.

Solid-state circuits will replace the relay circuits that formerly provided SCRAM protection and alarm indication. The solid-state circuits are faster and more reliable than the previous circuits. An interface (input/output) circuit is designed that will convert the reactor power level and power rate parameters for computer input. A digital encoder system for control-rod position indication is designed and ready for testing.

We expect to complete the design and bench-testing phase by August 1, 2003.

Phase 3: Build or Assemble Subassemblies

All solid-state circuits are built. The nuclear instrumentation interface module is in the assembly process and the prototype rod-height indicator is mounted and ready for testing.

The next step is to design and build the control panels for the console. Installing the remaining electronics into the console will be part of this phase.

Finally, one of the connectors from the CRDM is at the NSC and will be electrically connected to the control console. Once this is done, the console will be complete and ready for initial testing.

We expect to complete building the console by August 10, 2003.

Phase 4: Test Subassemblies

The NSC electronics staff will test all of the operations of the console with the one CRDM connector as fully as possible at the NSC. All indications will be simulated and all responses verified. This step may include redesign and correction of any unexpected results; however, the assemblies are tested as they are produced. Any problems during this test phase will revolve around interface problems.

We expect to complete these tests by August 17, 2003.

Phase 5: Assemble and Test Entire System

In the last phase, the NSC staff will deliver the console to the AGN location and make all of the final connections. All final tests of the total system can be done in place and under the direction of the AGN licensed operators.

We expect the entire system to be tested and the AGN ready for restart by September 15, 2003.

10CFR50.59 Reviews

Concurrent with the five phases, NUEN will conduct comprehensive reviews in accordance with 10CRF50.59. These reviews will ensure that the fused link and electronic system functions are maintained in compliance with the original Technical Specifications.

We expect to complete this review by September 8, 2003.

AGN License Renewal

We will rewrite one section of the Safety Analysis Report (SAR). This will make the SAR represent the upgraded system and will replace the respective SAR section previously submitted to NRC for review. We expect to have this revision complete and ready for submittal to NRC by August 28, 2003.

I shall inform you promptly if these plans or schedules change. Please telephone me at (979) 845-1670 if you have questions.

Sincerely,

W E Burchill

William E. Burchill
Department Head and HRTI Professor
Nuclear Engineering

WEB/acw

xc: W.D. Reece, Director, TAMU NSC
Kenneth R. Hall, Chairman, TAMU Reactor Safety Board