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March 7, 1983

Docket No. 50-320

Mr. B. K. Kanga, Director
Three Mile Island Unit 2
GPU Nuclear Corporation
P.O. Box 480
Route 441 South
Middletown, PA 17057

Dear Mr. Kanga:

Subject: Reactor Building Polar Crane Functional Description

Reference: Letter dated 10/12/82, Polar Crane Refurbishment

The TMIPO has reviewed your subject letter dated February 17, 1983. In the Functional Description the main items discussed are crane movements, crane components, QA/QC, crane maintenance and modifications, licensing, structure and hoisting components, and tests. The following is a discussion of your functional requirements for these items.

Crane Movement

The crane movement allowed by the load test and for subsequent movements including head lift is from azimuth 295 degrees clockwise to azimuth 90 degrees. Full trolley and main hoist movement is required. Auxiliary hoist movements have not been reviewed by the NRC and therefore any use or movement of the auxiliary hook will not be permitted pending a thorough review of the auxiliary hook by the TMIPO. All crane movements will be controlled administratively by NRC approved procedures.

Crane Components

Two bridge drive trains with electric brakes, one at each end of the bridge, are required. The main trolley drive with brake, and the main hoist, including all components of the main hoist drive train and hoist unit are also required. This includes the inching drive and all brakes. As previously stated, the auxiliary hoist and its specific components will not be operated during this load test.

OFFICE	TMIPO:NRR	TMIPO:NRR	TMIPO:NRR	PD:TMIPO:NRR		
SURNAME	TCPoindexter	bg LGage	RAWeller	BJSnyder		
DATE	3/ /83	3/4/83	3/7 /83	3/ /83		

It is the staff's understanding that the existing conductor/collector systems were extensively damaged as a result of the March 28, 1979 accident and were not refurbished. Power will be supplied by a single set of crane controls that are presently installed on a pendant to support crane operation.

QA/QC Requirements

The crane structure has been classified as Important to Safety. Visual examinations of the crane have been performed and are planned after the load test. Prior to and immediately following the QA witnessed load test, the main hook will be nondestructively examined in accordance with ANSI B30, 10-1975 and ASNT-TC-1-A, as applicable. The wire rope and brakes have also been inspected by GPU and judged as being acceptable.

Maintenance and Modifications

A QC source/receipt inspection is required for any replacement part for load bearing components of the main hoist. QA/QC requirements will be identified in the document approved by GPU Engineering for all repairs made.

Licensing

The original safety features identified in the TMI-2 FSAR are being restored with the same quality of components. These features include the main hoist redundant brakes, main hoist upper limit switches, and separate main hoist control and drive devices.

Tests

The operational test (no load) has been completed and was performed in accordance with ANSI B30.2-1976, Paragraph 2-2.2.1. The main hoist load test will be performed in accordance with ANSI B30.2-1976 except for the test load weight and test load travel distance requirements. ANSI B30.2 recommends that the load rating should not be more than 80 percent of the actual load test weight (estimated at 212 tons). Since your proposed weight will not be less than 200 tons, the load rating of 170 tons could be at most, 85% of the test load weight (5% rating above the recommended value). It is the staff's opinion that in conjunction with the inspections that have been performed on the crane, the anticipated frequency of use, and the original design rating of 500 tons that a 170 ton rating is acceptable.

Although discussed in the subject document, the auxiliary hoist will not be tested or moved during the upcoming load test. If use of the auxiliary hook is required at a later date, the NRC staff will review appropriate documents at that time.

Summary

The NRC staff concurs with the Functional Description as it relates to the Reactor Building Polar Crane Load Test using the main hoist system. QA/QC has been involved at all stages of the refurbishment process in addition to NRC staff. Safety considerations have been addressed under a separate letter.

Sincerely,

/s/ Richard A. Weller for

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

cc: J. Barton
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J. Byrne
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