



GPU Nuclear Corporation
Post Office Box 480
Route 441 South
Middletown, Pennsylvania 17057-0191
717 944-7621
TELEX 84-2386
Writer's Direct Dial Number:

(717) 948-8461

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April 2, 1985

TMI Program Office
Attn: Dr. B. J. Snyder
Program Director
US Nuclear Regulatory Commission
Washington, DC 20555

Dear Dr. Snyder:

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

To ensure the completeness and accuracy of the record concerning the polar crane refurbishment, this letter provides a synopsis of the public record as it currently exists and additional information developed since the initial record was established.

By NRC letter dated July 18, 1983, Dr. B. J. Snyder to Mr. B. K. Kanga, GPU Nuclear was requested to provide certain information concerning modifications applied to the polar crane during the refurbishment program. GPU Nuclear responded via Letters 4410-83-L-0175 dated August 16, 1983 and 4410-83-L-0205 dated September 2, 1983.

In the initial response, GPU Nuclear reported that the polar crane's two (2) main hoist brakes were replaced in-kind and were the only replacement parts for load bearing components of the main hoist. Also, three (3) modifications related to the polar crane (i.e., the Jib Crane; Trolley Power/Control Bypass Cables; Pendant/Festoon Cable) were reported as

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having been performed in a manner not in compliance with administrative procedures. As a result of the administrative noncompliances associated with polar crane refurbishment work packages, GPUNC Quality Assurance reviewed those refurbishment work packages which performed inspection, repair, replacement or testing. This work was identified as Not Important to Safety per the Polar Crane Functional description and would not normally have been within QA Scope. The QA review performed was specifically oriented to Work Packages based on concerns relative to non-compliance with administrative controls and did not include Maintenance Job Tickets. Administrative deficiencies noted during the review were documented on a Quality Deficiency Report (QDR). Finally, it was reported that non-fusible links were installed in the polar crane main disconnect in accordance with Administrative Procedure (AP 1013), "Bypass of Safety Function and Jumper Controls". The second response provided information concerning corrective actions initiated as a result of the QDR.

Subsequent to GPU Nuclear's initial responses, Letter NRC/TMI-83-061, Mr. L. H. Barrett to Mr. B. K. Kanga, advised GPU Nuclear that the NRC staff was continuing its review of the polar crane refurbishment, including information provided at the September 27, 1983, public meeting at Middletown, PA, and requested additional information. GPU Nuclear responded by Letter 4410-83-L-0244 dated October 11, 1983, reaffirming that the Quality Assurance (QA) Department had performed a review of the fifty-two (52) Work Packages used to accomplish refurbishment of the polar crane and identified no material or design problems. Also reaffirmed was that "administrative controls for modification and testing were not complied with in all cases", discrepancies had been so noted, and corrective actions had been initiated.

Subsequent to the above, NRC Notice of Violation EA83-89 dated February 3, 1984, identified four (4) modifications as having been performed by BNoC Work Packages rather than as required by GPU Nuclear-approved Engineering Change Memorandum (ECM) or Work Permit. GPU Nuclear Letter 4410-84-L-0031, dated February 28, 1984, acknowledged that the activities were initially performed via Work Packages; however, the problem had been identified and documented by GPU Nuclear Quality Assurance and appropriate corrective action had been initiated to prevent recurrence. It is noteworthy that the reported issuance of an ECM to document elimination of the polar crane main disconnect fuses constituted a further modification and revised the status of this issue which was previously reported in GPU Nuclear Letter 4410-83-L-0175.

The summary report for the load test of the polar crane was forwarded by GPU Nuclear Letter 4410-84-L-0085 dated June 5, 1984. In that report, it was noted that "The most significant mechanical refurbishment was the replacement in-kind and adjustment of the main hoist brakes". This statement was made in "good faith" with the understanding that all improper modifications or replacements not-in-kind had been identified and reported previously.

On August 16, 1984, during an inspection of the polar crane, it was observed that one of a redundant set of main hoist brakes was inoperable. A detailed inquiry into the cause of the malfunction, as reported in GPU Nuclear Letter 4410-84-L-0159, dated October 5, 1984, led

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to discovery that, although the main hoist brakes had been replaced in-kind as previously reported, a hand release mechanism had been added to each assembly prior to installation; this fact had not been reported previously.

The results of an in-depth inquiry into the matter of the polar crane main hoist brakes and hand release mechanisms were described in GPU Nuclear Letters 4410-84-L-0169 dated October 8, 1984, 4410-84-L-0177 dated October 12, 1984, and 4410-84-L-0181 dated October 18, 1984. In response to a recommendation of the GPU Nuclear Polar Crane Review Group, established specifically to inquire into the matter, a review of all documentation related to the polar crane refurbishment was conducted. The results of that review, which was significantly expanded in scope compared to the previously reported QA work package review, were reported in GPU Nuclear Letter 4410-84-L-0220 dated December 14, 1984.


During the course of the document review, it was discovered that, in addition to installation of the hand release mechanisms, three (3) minor modifications had been applied to the polar crane which had not been previously reported. Those items were:

- Removal/reinstallation of target alignment markers
- Partial removal of the original pendant festoon track and lighting conduit
- Drilling of a 1/4" hole in the floor of the cab

A summary description of each modification was included in GPU Nuclear Letter 4410-84-L-0220. An ECA (Engineering Change Authorization) has been issued and approved documenting these three (3) items.

On January 9, 1985, by NRC Letter, B. J. Snyder to F. R. Standerfer, GPU Nuclear was advised that a review of the matter of the polar crane main hoist brakes and hand release mechanisms by the TMIPO had resulted in a conclusion that "the crane has been demonstrated to be operable and safe to use for load conditions". Therefore, the polar crane was approved for use up to the limits of its current load rating.

Sincerely,



F. R. Standerfer
Vice President/Director, TMI-2

FRS/RER/vjf

cc: Deputy Program Director - TMI Program Office, Dr. W. D. Travers