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TMI Program Office
Attn: Dr. W. D. Travers
Acting Director
US Nuclear Regulatory Commission
c/o Three Mile Island Nuclear Station
Middletown, PA 17057

Dear Dr. Travers:

Three Mile Island Nuclear Station, Unit 2 (TMI-2)
Operating License No. DPR-73
Docket No. 50-320
Heavy Load Handling Safety Evaluation Report

Attached is supplemental information relevant to the Heavy Load Handling Safety Evaluation Report (SER). The attachment provides additional information on the Canister Handling Bridge (CHB) Shield Collar design and testing. This information is provided based on the discussions with members of the TMI Program Office on October 29, 1985. This information supports the GPU Nuclear contention that the shield collars on the Reactor Building and Fuel Handling Building CHB's are integral components of the CHB's, which are not heavy loads as defined by NUREG 0612, "Control of Heavy Loads at Nuclear Power Plants". Therefore, the shield collars should not be considered as heavy loads susceptible to load drops within the context of NUREG 0612.

Sincerely,

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

FRS/RBS/eml

Attachment

A035
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ATTACHMENT
(4410-85-L-0222)

COLLAR DRIVE SYSTEM
DESIGN AND TEST INFORMATION

A. What are the factors of safety used in the collar drive system? What loads were used in the design?

1. Factors of safety of 3 and 5 were used for yield and ultimate respectively.

2. The full collar weight (9325 pounds - Reactor Building (RB), 6275 pounds - Fuel Handling Building (FHB)) was used as the design load for each independent collar drive.

3. Dynamic effects of raising or stopping the collar, or the load transfer, if one drive fails, were not an original design basis. However, design calculations have been reviewed and confirm that the factors of safety of 3 and 5 are maintained for each independent collar drive even if a 15% dynamic load factor is considered. The evaluated dynamic factor due to load transfer in the event of drive system failure is less than 15%. The vertical motion load factor based on maximum collar speed is calculated to be 1 1/2% based on the CMAA-70 method for determining load factors for hoists.

B. What codes were used for basis in the design of the collar drive system?

ANSI B30.2 - 1983 was applied to the design of the structural members of the collar drive system. Additionally, ANSI N14.6 - Section 3.2.1 was applied to incorporate factors of safety of 3 and 5 for yield and ultimate respectively into the design.

C. What components of the collar drive system were proof-tested and to what loads?

Figure 1 shows a schematic of the key components.

Jackscrew Actuator - Tested to 200% collar weight - static
(19,000 lbs - RB, 13,000 lbs - FHB)

Support Bar and Pins - Tested to 200% collar weight - static
(19,000 lbs - RB, 13,000 lbs - FHB)

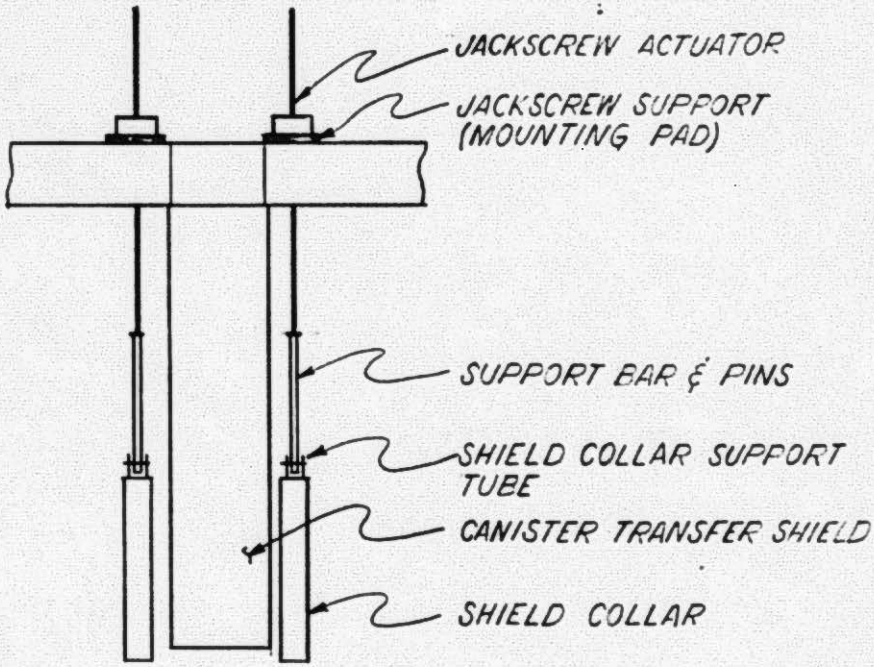
Shield Collar Support Tube - Tested to 100% collar weight - static
(9325 lbs - RB, 6275 lbs - FHB)

Jackscrew Support (Mounting) Pad on Canister Transfer Shield - Tested to 100% collar weight - static

Jackscrew actuators, support bars, and pins were proof-tested in a test fixture using a hydraulic cylinder to apply the test load.

Shield collar support tubes and the jackscrew support (mounting) pad on the canister transfer shield were proof-tested after assembly by disconnecting one of the support bars and allowing the full collar weight to be supported on one collar drive.

FIGURE 1


JACKSCREW ACTUATOR
JACKSCREW SUPPORT (MOUNTING PAD)
SUPPORT BAR & PINS
SHIELD COLLAR SUPPORT TUBE
CANISTER TRANSFER SHIELD
SHIELD COLLAR