



METROPOLITAN EDISON COMPANY SUBSIDIARY OF GENERAL PUBLIC UTILITIES CORPORATION

POST OFFICE BOX 542 READING, PENNSYLVANIA 19603

TELEPHONE 215 - 929-3601

December 1, 1978
GQL 1940

Director of Nuclear Reactor Regulation
Attn: R. W. Reid, Chief
Operating Reactors Branch No. 4
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Sir:

Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289

This letter is in response to your letter of October 16, 1978, concerning the consequences of crane failures when handling heavy loads.

Question No. 1:

In your letters of February 14, 1976 and January 31, 1978, you define a transfer path for moving a fuel cask from the transporter to elevation 348'-0". In your letter of January 31, 1978, you also define a "Unit 1 main hook travel area for loads over 15 tons." Among other uses, this travel area could be used for transporting a shipping cask to the Receiving/Shipping Area. Inasmuch as the cask transfer path was selected to assure the safety of that specific movement, provide the basis for the acceptability of moving casks or other loads weighing from 15 to 110 tons anywhere within the "Unit 1 main hook travel area for loads over 15 tons."

Response:

In both of the above submittals, criteria was developed and analyses were performed to determine an acceptable area where a spent fuel cask of 110 tons could be moved in the vicinity of the railcar and shipping/receiving area. Within this area a preferred path of travel was specified which optimized the margin of safety when moving the 110 ton cask. The January 31, 1978 submittal presented the region of travel for heavy loads and the preferred cask travel path.

The criteria which were developed for determining the acceptable movement area for loads up to 110 tons were presented on page IV-2 of the February 14, 1976 submittal. In review, they were:

A single cask drop accident should not be permitted to damage engineered safeguard circuits of more than one color. Damage to any number of circuits of the same color is acceptable as long as circuits of another color are not affected.

7812050098

A001
11/10

P

P

Damage to multicolored circuits (e.g., red/green) along with damage to circuits to one of those two colors is acceptable since the multicolored circuits are protected interconnections between two redundant channels.

These criteria ensure that no more than one channel of engineered redundant safeguard systems could be damaged by single cask drop accidents, so that the safety function can still be carried out by the undamaged channels. Movement anywhere in the "Unit 1 main hook travel for loads over 15 tons" with a 110 ton cask is acceptable per the above criteria.

Question No. 2:

Inasmuch as no restrictions are placed on the limits of travel for loads weighing between 3000 pounds and 15 tons (except in the vicinity of the spent fuel pools), either: (1) provide an analysis demonstrating that dropping a 15 ton load at any point in the permissible area of travel (outside the "Unit 1 main hook travel area for loads over 15 tons") from the maximum permissible height would not damage redundant channels of safety related equipment or electrical cables, or (2) define a restricted area of travel and a restricted lift height and provide a similar analysis for these more restrictive conditions.

Response:

The area adjacent to the railcar can be divided into these areas:

- a. Between the tracks and the south wall of the pool is a walkway area which is kept free of large and/or heavy objects. The only lifts performed over that area would be for a spent fuel cask and this movement will be within the shaded area.
- b. The area south of the tracks is the receiving/shipping area. There are no limitations for any lifts of any size in this area since a drop of any weight will not sever circuits of more than one color and thus compromise plant safety. The only limitations on moving objects in this area are the result of physical limitations on the crane and hook movements themselves. Some items are temporarily stored in this area: new fuel assemblies and their shipping casks, sleeves from the radwaste system, and the 305' elevation forklift bridge over the tracks when it is moved out of the way. Each of the above weigh less than 15 tons.
- c. The railcar slab itself has lifts of various weights passing over it. The movement of the spent fuel casks and the position of the railcar and their interactions concerning cask drops were discussed in other submittals. The radwaste liners are lifted onto a truck for shipment from the plant. They are raised to an elevation sufficient to clear the sides of the truck. The truck is never positioned over circuits of more than one color. There is a footbridge over the tracks that

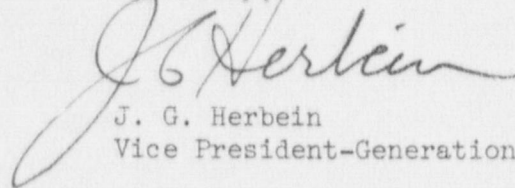
December 1, 1978
GQL 1940

prevents any truck or trailer from being positioned over both red and green circuits. The new fuel assemblies and their shipping casks are lifted off of the truck trailers. These items are raised sufficiently high enough to clear the truck and then placed in the receiving area. At no times are the objects over circuits of more than one color.

The only area where an impact would damage circuits of two colors at once would be east and north of the tracks. As stated previously, no objects are put in this area whose weight, shape or lift height would violate the safety criteria, and this area must be clear since it is a walkway. As a result, there are no lifts of 15 tons or less from the maximum possible height, and there are no lifts over two redundant channels of equipment. Therefore, no further analysis is necessary, and no restrictions are placed on loads less than 15 tons.

Based on the above, no amendment to our Technical Specification Change Request No. 38 is considered necessary.

Sincerely,



J. G. Herbein
Vice President-Generation

JGH:DGM:cjg