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May 14, 1996
C311-96-2167

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555

Dear Sir:

Subject: Three Mile Island Nuclear Station, Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
GPU Nuclear Response to NRC Bulletin 96-02, "Movement of Heavy
Loads Over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-
Related Equipment," dated April 11, 1996

NRC Bulletin 96-02 requested that licensees review plans and capabilities for handling heavy loads while the reactor is at power in accordance with existing regulatory guidelines, determine whether the activities are within the licensing basis or whether changes to Technical Specifications will be required. The GPU Nuclear response to each of the items requested is described in the attachment.

Sincerely,

L.G. Noll for J. Knubel

J. Knubel
Vice President and Director, TMI

MRK

200040

Attachment

cc: Region I Administrator, NRC
Senior Project Manager, TMI-1, NRC
Senior Resident Inspector, TMI-1, NRC

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GPU Nuclear Response to NRC Bulletin 96-02

The subject NRC Bulletin requested certain written information to be submitted. GPU Nuclear responses to the requested items are as follows:

- (1) For licensees planning to implement activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment within the next 2 years from the date of this bulletin, provide the following:
 - A report, within 30 days of the date of this bulletin, that addresses the licensee's review of its plans and capabilities to handle heavy loads while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) in accordance with existing regulatory guidelines. The report should also indicate whether the activities are within the licensing basis and should include, if necessary, a schedule for submission of a license amendment request. Additionally, the report should indicate whether changes to Technical Specifications will be required.

GPU Nuclear Response

GPU Nuclear evaluations and commitments regarding heavy load handling operations at TMI-1 in accordance with NUREG-0612 are documented in our submittal dated February 24, 1984. Our response addresses both Phase I and Phase II of Generic Technical Activity A-36, however only those aspects of the response that were considered part of Phase I were reflected in the NRC's Safety Evaluation Report (SER) dated January 11, 1985.¹ Commitments which address Phase II have not been formally reviewed by the NRC. Even though NRC Generic Letter (GL) 85-11 dated June 28, 1985 stated that the Phase II was considered complete without NRC review and that licensee implementation of any actions to address Phase II was not a requirement, GPU Nuclear has continued to treat our entire response including the Phase II response as part of the licensing basis for TMI-1.

As part of the GPU Nuclear evaluation, the Reactor Building (RB) and Fuel Handling Building (FHB) were divided into impact regions and an assessment was performed to determine the load drop consequences for heavy loads dropped in each impact region. Commitments regarding the control of heavy loads (and specifically the potential drop of a fuel cask) were incorporated into TMI-1 Technical Specifications (TS) Section 3.11, "Handling of Irradiated Fuel," by License Amendment 109, dated July 30, 1985. All heavy load operations are reviewed against each of the evaluations described above.

TS Section 3.12, "Reactor Building Polar Crane," defines the requirements for polar crane operation over safety-related equipment in the RB. Refueling Procedure (RP) 1507-1, "Polar Crane Operation," ensures that any crane operations meet these

¹ Subsequently, heavy load movements to permit reracking of the "A" Spent Fuel Pool were approved in the SER (Section 2.4, "Heavy Loads Concerns") for License Amendment No. 164, dated April 27, 1992.

requirements, as evaluated by GPU Nuclear and approved by the NRC. No RB polar crane operations involving heavy load lifts are planned to occur prior to plant being in a safe shutdown condition.² While not specifically planned, certain loads may be moved in the RB during a shutdown sequence prior to reaching cold shutdown. Any heavy load movements at conditions other than during cold shutdown would be prohibited from paths over fuel or more than one train of safety related equipment. All such movements are considered to be bounded by the licensing basis for TMI-1.

GPU Nuclear has also reviewed its plans and capabilities for handling heavy loads in the FHB. Within the next 2 years there is a possibility that three (3) heavy load lifts may be required in the FHB; two could occur over safety-related equipment, but none would occur directly over irradiated fuel. The three potential heavy load movements currently planned over the next two years are described as follows:

- 1) Movement of the Dry Fuel Storage Area (DFSA) lid will be in accordance with TMI-1 RP 1507-2, "Fuel Handling Building Crane Operation." This lift has been evaluated for potential impact to safety-related equipment during power operation, and meets the GPU Nuclear commitments and NRC requirements as documented in NRC Inspection Report (IR) 85-08, dated April 19, 1985.
- 2) Receipt of new fuel shipping casks in accordance with RP 1503-1, "Receipt of New Fuel and Control Components" and 1507-2 has also been evaluated for potential impact to safety-related equipment during power operation, and meets GPU Nuclear commitments and NRC requirements as approved in the January 11, 1985 SER and IR 85-08. The procedures assure that no shipping cask lifts will occur over more than one train of safety-related equipment. Electrical interlocks restrict crane movement to only the approved travel areas in the FHB while lifting loads greater than 15 tons as described in FSAR §9.7.1.1.
- 3) Lifting of a Fuel Transfer System (FTS) modification platform will require additional procedural guidance to specify the load path, lift height, rigging instructions and any other restrictions necessary to ensure that the operation is bounded by the previous GPU Nuclear evaluations and approved by the NRC for lifts of up to 15 tons in the anticipated area of travel of the platform above the FHB operating floor. Lifting the platform over the Fuel Pool will not occur above irradiated fuel assemblies.

Therefore, the heavy load movements currently planned over the next two years will be accomplished within that which is considered to be the current license basis for TMI-1. No TS changes are required.

² Note: Safe Shutdown for TMI-1 is defined to be the hot shutdown condition.

- (2) For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) and that involve a potential load drop accident that has not previously been evaluated in the FSAR, submit a license amendment request in advance (6-9 months) of the planned movement of the loads so as to afford the staff sufficient time to perform an appropriate review.

GPU Nuclear Response

Although not all heavy load lifts are specifically discussed in the FSAR, the planned movements listed above would not constitute potential load drop accidents not previously analyzed. The NRC's January 11, 1985 SER, which approved Phase I of the GPU Nuclear report, specifically evaluated the DFSA lid movement and fuel shipping cask lifts; and current accident analyses bound the potential drop of the FTS platform, as described above. Any polar crane operation permitted by TS 3.12 and TMI-1 procedures is also bounded by previously analyzed conditions.

- (3) For licensees planning to move dry storage casks over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled) include in item 2 above, a statement of the capability of performing the actions necessary for safe shutdown in the presence of radiological source term that may result from a breach of the dry storage cask, damage to the fuel, and damage to safety-related equipment as a result of a load drop inside the facility.

GPU Nuclear Response

Although cask movements have been evaluated satisfactorily as described in the referenced documents, no lifts of this type are currently planned at TMI-1.

- (4) For licensees planning to perform activities involving the handling of heavy loads over spent fuel, fuel in the reactor core, or safety-related equipment while the reactor is at power (in all modes other than cold shutdown, refueling, and defueled), determine whether changes to Technical Specifications will be required in order to allow the handling of heavy loads (e.g., the dry storage canister shield plug) over fuel assemblies in the spent fuel pool and submit the appropriate information in advance (6-9 months) of the planned movement of the loads for NRC review and approval.

GPU Nuclear Response

As stated in (1) above, no Technical Specification changes are required. No potential load lifts will occur over spent fuel. All handling will occur above clear areas of the fuel pool or the DFSA area, which contains only new fuel. Previous Technical Specification Amendments (Nos. 34, 48, and 109) have been evaluated and approved in implementation of the NRC's requirements for movement of heavy loads at TMI-1. Operation of the polar crane must comply with TS 3.12 to prevent any potential impact on fuel or safety-related equipment.

METROPOLITAN EDISON COMPANY
JERSEY CENTRAL POWER AND LIGHT COMPANY
PENNSYLVANIA ELECTRIC COMPANY
GENERAL PUBLIC UTILITIES NUCLEAR CORPORATION

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

GPU Nuclear Response to NRC Bulletin 96-02

This letter is submitted in response to NRC Bulletin 96-02, "Movement of Heavy Loads Over Spent Fuel, Over Fuel in the Reactor Core, or Over Safety-Related Equipment." All statements contained in this response have been reviewed, and all such statements made and matter set forth therein are true and correct to the best of my knowledge.

L.G. Note for J. Knobel
J. Knobel
Vice President and Director, TMI

Signed and sworn before me this

14th day of May, 1996.

Linda L. Ritter

Notarial Seal
Linda L. Ritter, Notary Public
Middletown Boro, Dauphin County
My Commission Expires Feb. 16, 1998
Member, Pennsylvania Association of Notaries