UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555-0001

SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION

RELATED TO AMENDMENT NO. 217 TO FACILITY OPERATING LICENSE NO. DPR-50

METROPOLITAN EDISON COMPANY

JERSEY CENTRAL POWER & LIGHT COMPANY

PENNSYLVANIA ELECTRIC COMPANY

GPU NUCLEAR, INC.

THREE MILE ISLAND NUCLEAR STATION, UNIT 1

DOCKET NO. 50-289

1.0 INTRODUCTION

By letter dated June 29, 1999, as supplemented August 27, October 29, and November 3, 1999, GPU Nuclear, Inc. (the licensee) submitted a request for changes to the Three Mile Island Nuclear Station, Unit 1 (TMI-1) Facility Operating License No. DPR-50. The requested changes would clarify authority to possess certain types of radioactive materials and components at Unit 1 as well as at Unit 2, and to possess certain radioactive waste material generated from Unit 2 at Unit 1, so that following the sale of the Unit 1 facility to AmerGen (the Unit 2 license would remain with GPU), radioactive materials may continue to be moved between the TMI-1 and TMI-2 units as they currently are. This would include movement of radioactive materials between the units and common facilities, the staging of contaminated apparatus used at either unit, and the temporary staging of radioactive materials generated by the operation of Unit 1 and the monitoring of Unit 2. For example, the process of handling TMI-2 contaminated protective clothing and radwaste generated in TMI-2 includes temporarily staging these materials in the TMI-1 facility. Also, liquid radwaste processing involves movement between the units. The August 27, October 29, and November 3, 1999, letters provided clarifying information that did not change the initial proposed no significant hazards consideration determination or expand the amendment beyond the scope of the original notice.

2.0 BACKGROUND

TMI is a dual unit site with two adjacent units. TMI Units 1 and 2 have adjoining fuel handling buildings and both units share the same loading/unloading bay. Since the two units are operated or maintained by the same licensee, GPU Nuclear, Inc., each unit has similar license conditions (2b(3) and 2b(4) for Unit 1 and 2B(4) and 2B(5) for Unit 2) which effectively permit the possession and movement of radioactive materials between the units and common facilities, including the staging of contaminated apparatus used at either unit and temporary staging of radioactive material generated by the units. In anticipation of the forthcoming license transfer of the TMI-1 operating license to Amergen, the licensee has requested that TMI-1 License Conditions 2b(3) and 2b(4) be amended to clarify the authority to possess

radioactive materials at both units. The licensee has also proposed to modify the Unit 2 license in a separate parallel license amendment request.

3.0 EVALUATION

The licensee has made several modifications to the wording of License Conditions 2b(3) and 2b(4) since the licensee originally submitted these proposed revised license conditions in its letter dated June 29, 1999. The final proposed version of these license conditions appears below.

2b(3) GPU Nuclear, Inc., pursuant to the Act and 10 CFR Parts 30, 40, and 70, to receive, possess at either TMI-1 or TMI-2, and use in amounts as required for TMI-1 any byproduct, source, or special nuclear material without restriction to chemical or physical form, for sample analysis, testing, instrument calibration, or associated with radioactive apparatus or components. Other than radioactive apparatus and components to be used at TMI Unit 2 in accordance with the TMI-2 License, the radioactive apparatus and components that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall be limited to: (1) outage-related items (such as contaminated scaffolding, tools, protective clothing, portable shielding and decontamination equipment); and (2) other equipment belonging to TMI Unit 1 when storage of such equipment at TMI-2 is deemed necessary for load handling or contamination control considerations:

2b(4) GPU Nuclear, Inc., pursuant to the Act and 10 CFR Parts 30 and 70, to possess at the TMI Unit 1 or Unit 2 site, but not separate, such byproduct and special nuclear materials as may be produced by the operation of either unit. Radioactive waste may be moved from TMI Unit 2 to TMI Unit 1 under this provision for collection, processing (including decontamination), packaging, and temporary storage prior to disposal. Radioactive waste that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall be limited to: (1) dry active waste (DAW) temporarily moved to TMI Unit 2 during waste collection activities, and (2) contaminated liquid contained in shared system piping and tanks. Radioactive waste that may be moved from TMI Unit 1 to TMI Unit 2 under this provision shall not include spent fuel, spent resins, filter sludge, evaporator bottoms, contaminated oil, or contaminated liquid filters.

The storage of radioactive materials or radwaste generated at TMI Unit 2 and stored at TMI Unit 1 shall not result in a source term that, if released, would exceed that previously analyzed in the UFSAR in terms of off-site dose consequences.

The storage of radioactive materials or radwaste generated at TMI Unit 1 and stored at TMI Unit 2 shall not result in a source term that, if released, would exceed that previously analyzed in the PDMS SAR for TMI Unit 2 in terms of off-site dose consequences.

Currently, both TMI-1 and TMI-2 are operated or maintained by the same licensee, GPU Nuclear, Inc. and have the same owners. As such, their licenses permit the movement and staging between units of radioactive apparatus (i.e., outage-related items such as scaffolding,

tools, protective clothing, portable shielding, and decontamination equipment) and components that are used at either unit. GPU Nuclear is proposing to revise License Condition 2b(3) for TMI-1 so that it will permit the continued shared possession of specified radioactive apparatus and components at either unit following the sale of TMI-1 to Amergen.

The radioactive apparatus covered under License Condition 2b(3) will be limited to outage-related items such as scaffolding, tools, protective clothing, portable shielding, and decontamination equipment. This proposed license condition will allow the storage of this equipment at either unit. Storage of contaminated apparatus, such as outage-related equipment, at TMI-2 would also represent a smaller personnel contamination/occupational dose problem since the work force at TMI-2 is much smaller than at TMI-1. However, outage-related equipment such as scaffolding, tools, portable shielding, and decontamination equipment typically does not represent a significant source of radiation for personnel.

The proposed revised License Condition 2b(3) will also permit the storage of equipment belonging to TMI-1 at TMI-2 when deemed necessary for load handling or contamination control considerations. GPU Nuclear replaced the internals package on a TMI-1 reactor coolant pump (RCP) during the last refueling outage. This revised license condition will permit the licensee to store the old TMI-1 RCP internals package in the spent fuel area in the TMI-2 spent fuel pool area for possible refurbishment and reuse sometime in the future at TMI-1. The licensee plans on purchasing a used, contaminated RCP motor as a spare for TMI-1. The licensee's desired location for storing this spare motor would also be the TMI-2 spent fuel pool area. As part of the sale of TMI-1, AmerGen also purchased several other motors currently installed at TMI-2 for possible eventual use as replacement motors for TMI-1 components. The proposed license condition would permit these motors to remain installed at TMI-2 until they would be needed for use at TMI-1. Proposed License Condition 2b(4), discussed in more detail below, will ensure that staging of materials such as the contaminated reactor coolant pump and motor components in the TMI-2 spent fuel pool area will not result in a source term that, if released, would exceed that previously analyzed in the Post Defueling Monitored Storage (PDMS) Safety Analysis Report (SAR) for TMI-2 in terms of off-site dose consequences. The storage of these components in the TMI-2 spent fuel pool area would also improve accessibility in the TMI-1 spent fuel pool area and would present a smaller personnel contamination/occupational dose problem than if stored at TMI-1 (since the work force at TMI-2 is much smaller than at TMI-1).

For the reasons discussed above, License Condition 2b(3) is acceptable.

TMI-1 and TMI-2 currently share the same joint waste processing facility which utilizes portions of both the TMI-1 and TMI-2 facilities. This joint waste processing facility currently processes and packages all radioactive wastes generated at TMI Units 1 and 2. Radioactive materials generated at TMI Units 1 and 2 are also temporarily stored at and moved between the units. Following the license transfer, the common waste processing facilities will be part of TMI-1. Therefore, the revised License Condition 2b(4) will permit all radioactive waste generated by either unit to be possessed at either the TMI-1 or TMI-2 site. This will permit the radioactive waste generated at TMI-2 to be processed, packaged, and staged temporarily prior to disposal, utilizing common site facilities which fall under the TMI-1 license.

In addition, License Condition 2b(4) states that radioactive waste that may be moved from TMI-1 to TMI-2 shall be limited to: 1) dry active waste (DAW) temporarily moved to TMI-2 during waste collection activities, and 2) contaminated liquid contained in shared system piping

and tanks. Radioactive waste that may be moved from TMI-1 to TMI-2 shall not include spent fuel, spent resins, filter sludge, evaporator bottoms, contaminated oil, or contaminated liquid filters. The license condition would not permit radioactive wastes from other sites to be stored at TMI Units 1 or 2.

The staff finds these limitations in the Unit 1 license amendment to be acceptable since they restrict the types of radioactive wastes that can be moved from TMI-1 to TMI-2 to DAW and contaminated liquid waste which must be processed in the shared radwaste processing system piping and tanks. The first paragraph of License Condition 2b(4) also places a time limit on the storage of TMI-2 generated radioactive wastes at TMI-1 prior to disposal by stating that radioactive wastes generated at TMI-2 may be moved from TMI-2 to TMI-1 for collection, processing (including decontamination), packaging and temporary storage prior to disposal with the wastes generated at TMI-1.

License Condition 2b(4) also states that the storage at TMI-1 of radioactive materials or radwaste generated at TMI-2 shall not result in a source term that, if released, would exceed that previously analyzed in the UFSAR for TMI-1 in terms of off-site consequences. In addition to radwaste generated at TMI-2, this license amendment would also permit the movement of contaminated equipment from TMI-2 to TMI-1 for repair. The amount of radioactivity that can be generated as radwaste or staged in the form of radioactive materials while performing activities allowed during PDMS at TMI-2 is insignificant when compared to the source terms associated with the various TMI-1 accident analyses. Therefore, the storage of any TMI-2 radioactive material at TMI-1 would not have a significant effect on any of those TMI-1 accident analyses. In addition, any radioactive materials and radwaste generated at TMI-2 which are stored at TMI-1 must be stored in locations which meet existing regulatory and procedural requirements.

Since the quantity of radioactive materials or radwaste generated at TMI-2 and stored at TMI-1 will not result in a source term that, if released, would exceed the source term previously analyzed in the Updated Final Safety Analysis Report for TMI-1 in terms of off-site consequences, the second paragraph of License Condition 2b(4) is acceptable.

The third paragraph of License Condition 2b(4) states that the storage at TMI-2 of radioactive materials or radwaste generated at TMI-1 shall not result in a source term that, if released, would exceed that previously analyzed in the PDMS SAR for TMI-2 in terms of off-site consequences. The third paragraph of License Condition 2b(4) is acceptable since it places an appropriate limit on the source term that can be transferred from TMI-1 to TMI-2.

On the basis of the above evaluation, the proposed revised TMI-1 License Conditions 2b(3) and 2b(4) are acceptable.

4.0 STATE CONSULTATION

In accordance with the Commission's regulations, the Pennsylvania State official was notified of the proposed issuance of the amendment. The State official had no comments.

5.0 ENVIRONMENTAL CONSIDERATION

Pursuant to 10 CFR 51.21, 51.32 and 51.35, an environmental assessment and finding of no significant impact has been prepared and published in the Federal Register on December , 1999 (64 FR 69046). Accordingly, based on the environmental assessment, the staff has determined that the issuance of the amendment will not have a significant effect on the quality of the human environment.

6.0 CONCLUSION

The Commission has concluded, based on the considerations discussed above, that: (1) there is reasonable assurance that the health and safety of the public will not be endangered by operation in the proposed manner, (2) such activities will be conducted in compliance with the Commission's regulations, and (3) the issuance of the amendment will not be inimical to the common defense and security or to the health and safety of the public.

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Date: December 9, 1999