



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

February 26, 1990

Docket No. 50-289

Mr. Henry D. Hukill, Vice President
and Director - TMI-1
GPU Nuclear Corporation
P. O. Box 480
Middletown, Pennsylvania 17057

Dear Mr. Hukill:

**SUBJECT: EXEMPTION FROM THE REACTOR COOLANT PUMP LUBE OIL COLLECTION
REQUIREMENTS OF SECTION III.0 OF APPENDIX R TO 10 CFR PART 50 -
THREE MILE ISLAND NUCLEAR STATION, UNIT NO. 1 - (TAC NO. 75303)**

The Commission has issued an exemption from the reactor coolant pump (RCP) motor lube oil collection requirements contained in Section III.0 of Appendix R to 10 CFR Part 50 in response to your letter dated October 20, 1989.

In the subject letter, GPU Nuclear requested an exemption from Appendix R in that it requires oil collection provisions capable of collecting lube oil from all potential pressurized and unpressurized leakage sites in the RCP lube oil systems. Although Three Mile Island Unit 1 has been in full compliance with these requirements in the past, your request relates to a piping modification planned for the January-February 1990 (8R) refueling outage that results in areas of piping not having oil collection provisions. The purpose of these modifications is to reduce radiation exposure and personnel hazards associated with adding oil to the RCP oil supply reservoirs by extending the oil fill piping beyond the secondary shield walls. Due to practical considerations, the modification does not provide for leakage collection systems beneath the entire length of the lube oil fill system, as modified. Your request proposed seven compensatory measures in lieu of full compliance with Appendix R. It is noted that the sections of piping in question are considered to be unpressurized.

We have reviewed your request and the supporting technical information contained in your October 20, 1989 letter. We considered the compensating features, both design and procedural, and agree that a level of safety equivalent to that achieved by literal interpretation of Appendix R, Section III.0 will result from the compensatory measures. Therefore, an exemption from the RCP oil collection requirements of Section III.0 of Appendix R to 10 CFR Part 50 is granted for those sections of piping referred to in your October 20, 1989 request.

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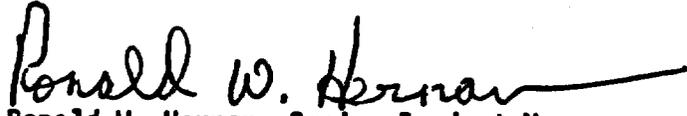
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Mr. Henry D. Huk111

- 2 -

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Sincerely,

A handwritten signature in black ink that reads "Ronald W. Hernan". The signature is written in a cursive style with a long horizontal stroke at the end.

Ronald W. Hernan, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosure:
Exemption

cc w/enclosure:
See next page

Mr. Henry D. Hukill
GPU Nuclear Corporation

Three Mile Island Nuclear Station,
Unit No. 1

cc:

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Mr. Henry D. Hukill

- 2 -

February 26, 1990

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Sincerely,

/s/

Ronald W. Hernan, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:
Exemption

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Mr. Henry D. Hukill

- 2 -

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Sincerely,

Ronald W. Hernan, Senior Project Manager
Project Directorate I-4
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Enclosures:

- 1. Exemption
- 2. Safety Evaluation

cc w/enclosures:
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One of these 15 subsections, III.0, is the subject of this exemption request. This subsection specifically states that "the reactor coolant pump shall be equipped with an oil collection system if the containment is not inerted during normal operation... Such collection systems shall be capable of collecting lube oil from all pressurized and unpressurized leakage sites in the reactor coolant pump lube oil systems.... Leakage points to be protected shall include lift pump and piping, overflow lines, lube oil cooler, oil fill and drain lines and plugs, flanged connections on oil lines, and lube oil reservoirs where such features exist on the reactor coolant pumps."

TMI-1 has, in the past, been considered to be in full compliance with Section III.0 of Appendix R. However, a plant modification to reduce radiation exposure to workers during normal operation and to improve the occupational safety aspects of adding oil to the RCP lube oil system has been undertaken by the licensee. The modification relocates the lube oil fill station to a remote location outside of the secondary radiation shield with a corresponding addition of significant lengths of fill piping and tubing. Existing drip pans are retained as part of the oil collection system and new drip pans are added beneath reservoirs, drains and overflows. However, collection trays/pipes are not provided for the entire length of each pipe and beneath each fitting. By letter dated October 20, 1989, the licensee requested an exemption from the Appendix requirement to provide collection systems from all potential leakage sites and listed a number of compensatory considerations regarding design and operation of the modified system which would reduce the likelihood of fire.

IV.

The purpose of Appendix R is to accomplish safe shutdown in the event of a single fire and maintain the plant in a safe condition. Section III.0 requires collection of oil leakage from RCP lube oil system fill lines. At TMI-1, the intent of this section will be satisfied by both the design of the modification and procedurally controlled activities involved in adding oil to the RCPs. Concerns related to fire caused by carelessness or material failure and resultant lube oil leakage during a seismic event are mitigated although highly unlikely. The additional considerations listed below will reduce the likelihood of fire even further during oil additions without concurrent seismic events. In the absence of drip pans located below the entire portion of added fill piping/tubing, the licensee proposed minimizing the potential for and controlling leakage and spillage by:

1. using welded joints at fill piping/tubing connections as much as possible;
2. preventing oil from standing in piping outside the drip collection system by sloping the piping/tubing to drain completely into the RCP lube oil reservoirs;
3. locating fill line connections to oil reservoirs above the reservoir's high level alarm set point and overflow line;
4. extending existing or installing additional drip pans to collect possible leakage from the sight glasses;
5. confirming after installation that added oil reaches the sump and is not trapped in the piping;

6. based on startup and test data, identifying sight glass level change versus volume of oil added and incorporate that information in oil addition procedures; and
7. revising operating procedures to require wipe-up of any spillage at the remote fill station local drip pans.

V.

Based upon its evaluation, the staff concludes that the licensee's proposed design achieves a level of safety equivalent to that which would be achieved by literal conformance with the requirements of Section III.0 of Appendix R to 10 CFR Part 50.

Accordingly, the Commission has determined pursuant to 10 CFR 50.12(a)(2)(ii) that (1) this exemption as described in Section IV is authorized by law, will not present an undue risk to the public health and safety, and is consistent with the common defense and security, and (2) special circumstances are present for this exemption in that application of the regulation in this particular circumstance is not necessary to achieve the underlying purposes of Appendix R to 10 CFR Part 50. Therefore, the Commission hereby grants the exemption request identified in Section IV above.

Pursuant to 10 CFR 51.32, the Commission has determined that the granting of this exemption will have no significant impact on the environment (55 FR 6717).

This exemption is effective upon issuance.

FOR THE NUCLEAR REGULATORY COMMISSION



Bruce A. Boger, Acting Director
Division of Reactor Projects - I/II
Office of Nuclear Reactor Regulation

Dated at Rockville, Maryland
this February 26, 1990