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November 9, 1984
5211-84-2279

Office of Nuclear Reactor Regulation
Attn: J. F. Stolz, Chief
Operating Reactor Branch No. 4
Division of Licensing
U.S. Nuclear Regulatory Commission
Washington, D. C. 20555

Dear Mr. Stolz:

Three Mile Island Nuclear Station Unit 1 (TMI-1)
Operating License No. DPR-50
Docket No. 50-289
NUREG-737, Supplement 1 - Regulatory Guide 1.97
Revision 3

Section 6.2 of Supplement 1 of NUREG-737 pertaining to Regulatory Guide 1.97, requires each licensee to submit a report describing how it meets the recommendations of Regulatory Guide 1.97, "Instrumentation for Light Water Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident". In the GPU Nuclear Corporation transmittal on the subject dated October 1, 1984, we provided a report detailing comparison of the specific recommendations of Regulatory Guide 1.97 with the Three Mile Island Unit 1 design. With respect to the Regulatory Guide 1.97 recommendation regarding neutron flux monitoring instrumentation we identified that our review of this variable was continuing, and that the Commission would be informed.

TMI-1 is equipped with a neutron flux monitoring system composed of power, intermediate and source range monitors. The only post accident design basis functions provided by the neutron flux monitoring system are reactor trips involving high neutron flux (power range monitor). Of the spectrum of postulated accidents resulting in harsh environmental conditions inside containment, a high flux signal is the principal initiator of a reactor trip for the rod ejection accident only. The trip signal is generated in a time period small in comparison with the time required for the containment atmosphere to become a harsh environment.

The design basis events evaluated for TMI-1 as part of the license application (Chapter 14 of the Final Safety Analysis Report) do not postulate as credible a return to criticality following shutdown resulting from any design basis accident. Thus, the source and intermediate range monitors are not required to perform any safety related post accident function.

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Therefore, the existing TMI-1 neutron flux monitoring system is deemed appropriate for its functions within the design basis, and is not required to be qualified for harsh post accident environmental conditions. However, for accidents beyond the design basis and in response to the Regulatory Guide 1.97 recommendation, GPUN is committing to install "post-accident" neutron flux monitoring capability which will be installed during the second refueling outage following restart (Cycle 7 Refueling). This new monitoring equipment will be qualified to withstand post accident environmental conditions. Accordingly, page 1 of the Regulatory Guide 1.97 comparison which identifies NRC's Regulatory Guide 1.97 criteria for neutron flux monitoring, has been revised to include this commitment, and the justification on page 1a of the original report has been deleted.

Also attached is a revision to page 31 (Primary System Safety Relief Valve Position or Flow Through or Pressure in Relief Valve) of the Regulatory Guide 1.97 report, correcting a typographical error.

Sincerely,



D. M. Kill
Director, TMI-1

HDH/SK/CWS/kds
Attachments

R.G. 1.97 REVISION 3 - INVENTORY & COMPLIANCE TABLE

<u>Variable</u>	<u>Type</u>	<u>Category</u>
Neutron Flux	B	1
>System Identification	> Nuclear Instrumentation System	>
>	>	>
> CRITERIA	> NRC	> PLANT SPECIFIC
>Environmental Qualification	> Yes	> See Comments (Below)
>	>	>
>Environment	>	>
>	>	>
>Seismic Qualification	> Yes	>
>	>	>
>Redundancy	> Yes	>
>	>	>
>Number of Redundant Channels	> 2	>
>	>	>
>Power Source	> 1E	>
>	>	>
>Channel Availability	> Yes	>
>	>	>
>Quality Assurance	> Yes	>
>	>	>
>Control Room Display	>	>
> Indicated	> Continuous	>
>	>	>
> Recorded	> Continuous/On Demand	>
>	>	>
>Range	>	>
>	> 10 ⁻⁶ to 100% full power	>
>	>	>
>Interface	> Yes	>
>	>	>
>Servicing, Testing & Calib.	> Yes	>
>	>	>
>Human Factors	> Yes	>
>	>	>
>Direct Measurement	> Yes or no	>
>	>	>
>SCHEDULE:	Post accident neutron flux monitoring capability will be provided	>
>	during the second refueling outage following restart. Details of	>
>	system design will be developed as part of the design process.	>
>		>
>COMMENTS:	TMI-1 currently does not have post accident neutron flux monitoring	>
>	capability. This function is not required as part of the TMI-1	>
>	design basis.	>
>		>
>		>
>		>
>		>
>		>

() As per attached notes
* non-compliant
** not applicable

R.G. 1.97 INVENTORY & COMPLIANCE TABLE

JUSTIFICATION

Variable: Neutron Flux

DELETED

R.G. 1.97 REVISION 3 - INVENTORY & COMPLIANCE TABLE

<u>Variable</u>	<u>Type</u>	<u>Category</u>
Primary System Safety Relief Valve Positions or Flow Through or Pressure in Relief Valve	D	2
>System Identification	>	>
>	>	>
> CRITERIA	> NRC	> PLANT SPECIFIC
>Environmental Qualification	> Yes	> No*(9)
>	>	>
>Environment	>	> Harsh
>	>	>
>Seismic Qualification	> No	> No
>	>	>
>Redundancy	> No	> No
>	>	>
>Number of Redundant Channels	>	>
>	>	>
>Power Source	> Non-1E/UPS	> 1E Inverter
>	>	>
>Channel Availability	> Yes or no	> Yes (10)
>	>	>
>Quality Assurance	> Yes	> Yes (11)
>	>	>
>Control Room Display	>	>
> Indicated	> Continuous/On Demand	> Continuous
>	>	>
> Recorded	> No	> On Demand
>	>	>
>Range	> Closed - not closed	> Closed - not closed
>	>	>
>	>	>
>Interface	> Yes	> Yes (12)
>	>	>
>Servicing, Testing & Calib.	> Yes	> Yes (13)
>	>	>
>Human Factors	> Yes	> Yes (14)
>	>	>
>Direct Measurement	> Yes or No	> Yes (15)
>	>	>
>SCHEDULE: Installed.		
>		
>		
>COMMENTS:		
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() As per attached notes
 * non-compliant
 ** not applicable