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NRC/TM1 87-012  
 April 3, 1987

Docket No. 40-350

Mr. F. W. Standerfer  
 Vice President/Director, TM1-2  
 CPU Nuclear Corporation  
 P. O. Box 450  
 Middletown, PA 17057

Dear Mr. Standerfer:

Subject: Seismic Design Criteria for Modified Containment Penetrations

The NRC staff has reviewed your request (reference 1) for deletion of the constraint of 20 ft.<sup>2</sup> of modified penetrations between the reactor building and auxiliary/fuel handling buildings given in our November 5, 1984 letter (reference 4). In our previous analyses the penetrations to the auxiliary and fuel handling buildings were not the limiting case. As discussed in the enclosure, if a total of 40 ft.<sup>2</sup> of these penetrations were modified the offsite dose consequences of the modeled accident would remain a small portion of the limits in 10 CFR 100. Thus the staff concurs with expanding the limit to 40 ft.<sup>2</sup>.

Any additional modifications for which the potential offsite dose consequences could be estimated to exceed a small portion of the 10 CFR 100 limits (references 5 and 6), however, will be evaluated on a case by case basis (reference 2). The staff will consider the nature of the modification, the duration of the modification, and any restriction of activities while the modification is in place in addition to the potential offsite dose consequences.

Sincerely,

ORIGINAL SIGNED BY  
 William D. Travers

William D. Travers, Director  
 TM1-2 Cleanup Project Directorate

Enclosure: As stated

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SAFETY EVALUATION FOR EXPANDING LIMITS ON  
MODIFIED CONTAINMENT PENETRATIONS

BACKGROUND

General Public Utilities Nuclear Corporation (GPLNC), the licensee, applied for an exemption from General Design Criteria 2, 50 and 51 in a letter dated April 16, 1985 (reference 7). This would allow modification of containment penetrations such that they would no longer be seismically qualified. The ARC staff analyzed the potential offsite dose consequences of accidents involving modified containment penetrations coincident with seismic events (reference 4). The staff concluded that the potential consequences did not represent a threat to the health and safety of the public and subsequently allowed GPLNC to modify containment penetrations, to a limit of 20 ft.<sup>2</sup>, based on this analysis and the granting of the exemption to criteria 2, 50, and 51.

GPLNC has subsequently requested deletion of the current 20 ft.<sup>2</sup> limit on modified penetrations. The ARC staff has reviewed its previous analysis and GPLNC's submittals (references 1 and 3) and has performed additional calculations in making a determination of what action to take on the licensee's request.

EVALUATION

In the staff's previous analysis modified containment penetrations to the auxiliary and fuel handling buildings (including the annulus area) were restricted to 20 ft.<sup>2</sup> in area. With this restriction they did not represent the limiting case in the staff's analysis. The staff evaluated doubling the amount of these penetrations and doubled the source leaving the reactor building via these penetrations. The resultant worst case involved a dropped fuel canister coincident with the failed penetrations. The potential offsite dose consequences for the maximally exposed individual were less than 0.5 rem (i.e., 387 mrem) whole body dose equivalent. With 40 ft.<sup>2</sup> of modified penetrations the licensee could reasonably effect temporary repairs and terminate the release within a few hours as was previously assumed. With an unrestricted modification this assumption would not be valid and potential offsite doses could exceed a small fraction of 10 CFR 100 guidelines.

CONCLUSIONS

The staff has evaluated the potential risks associated with modifying up to 40 ft.<sup>2</sup> of penetrations between the containment (reactor building) and the auxiliary and fuel handling buildings. The staff has determined that this action does not involve a significant increase in the probability or consequences of an accident previously evaluated or create the possibility of a new accident or involve a significant reduction in the margin of safety. This action does not authorize an increase in effluents from the facility and falls within the bounds of activities previously described in the Programmatic Environmental Impact Statement (PEIS). We therefore conclude that up to 40 ft.<sup>2</sup> of the described penetrations can be modified without significant risk to the health and safety of the public.

## REFERENCES

1. GPUM letter, F. R. Standerfer to W. D. Travers, 4410-86-L-0107, dated June 30, 1986, re Seismic Design Criteria for Modified Containment Penetrations.
2. NRC letter, W. D. Travers to F. R. Standerfer, NRC/TM 86-005, dated January 16, 1986, re Seismic Design Criteria.
3. GPUM letter, F. R. Standerfer to B. J. Snyder, 4410-85-L-0077, dated April 16, 1985, re Seismic Design Criteria.
4. NRC letter, B. J. Snyder to F. R. Standerfer, dated November 5, 1984, re Exemptions from General Design Criteria 2, 50 and 51.
5. Regulatory Guide 1.29 "Seismic Design Classification", Revision 3, September, 1978.
6. NUREG 0800 "Standard Review Plan".
7. GPUM letter, F. R. Standerfer to B. J. Snyder, 4410-85-L-0077 dated April 16, 1985, re Seismic Design Requirements.