CDR 81-10-07

LONG ISLAND LIGHTING COMPANY
SHOREHAM NUCLEAR POWER STATION
P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

November 16, 1981

SNRC-1549

Mr. Boyce H. Grier
Office of Inspection and Enforcement
Region I
U.S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

LONG ISLAND LIGHTING COMPANY
Shoreham Nuclear Power Station - Unit 1
Docket No. 50-322

Dear Mr. Grier:

On September 14, 1981 in accordance with 10CFR50.55(e), we reported verbally to Region I a potentially reportable deficiency concerning the impact a failure of our liquid CO_2 storage tank and/or its associated piping might have on the operability of our Emergency Diesel Generators. Since, no additional information was available concerning this subject on the "due date" of our 30-day letter, we requested extensions of the filing date in telecons with Mr. L. Narrow on October 13th and Mr. H. Kister on November 5th, 1981. This letter serves as our 30-day written report of this deficiency.

Description of Potential Deficiency

An analysis has been performed by our Architect Engineer, Stone & Webster Engineering Corp. to determine the potential hazard to the operability of the emergency diesel generators posed by the relative location of the CO_2 storage tank and the diesel air intakes. The diesel generators for the Shoreham Station are located in adjacent rooms in the Control Building. The air intakes for the diesels are lined up on the west wall of the Control Building. The CO_2 tank for the fire protection system is located in the yard, west of the Control Building, about 40 feet north of the nearest diesel air intake.

Seismic design requirements are not specified for fire protection systems, except for piping supports in the areas of safety related structures, systems, and components. Since the CO_2 tank is not seismically designed, possible system interaction with the diesel generators has been considered.

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An analysis was performed to determine the likelihood that the diesel generators could be adversely affected by CO_2 due to tank damage. The analysis concludes that the diesels would not be affected. A summary of the analysis is presented below.

The CO_2 tank supports are not seismically designed. Analysis shows that for the Design Basis Earthquake (DBE), the internal tank supports could fail. In that event, the tank will drop about one foot to the pad below. For this condition, it has been determined that the tank itself remains unaffected. It could be assumed that piping connected to the tank would rupture; however, it has been determined that the piping would deform, and at worst develop minor leaks releasing insignificant amounts of CO_2. Even if it were to be assumed that the line were to rupture, specific and unlikely unfavorable meteorology would have to exist for one diesel generator (or, far less likely, two diesel generators) to be affected. Even in this event, at least one, and probably two, diesels would operate as expected. If a diesel were affected, which is not predicted, the effect would be limited to a slight delay in starting, with no long term impact on diesel performance or plant response.

Conclusion/Corrective Action

Since the analysis indicates that the CO_2 tank will have no adverse effect on safety of operation, no corrective action is required and we have concluded that this situation is not reportable under 10CFR50.55(e). No further reports will be forthcoming on this issue.

Very truly yours,

M. H. Milligan
Project Engineer
Shoreham Nuclear Power Station
TJS/pd

cc: Mr. Victor Stello, Director
NRC Office of Inspection and Enforcement
Division of Reactor Operations Inspection
Washington, D.C. 20555

M. J. Higgins
Site NRC Trailer