



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 618, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

Direct Dial Number

August 2, 1983

SNRC-940

Mr. Harold R. Denton, Director
Office of Nuclear Reactor Regulator
U.S. Nuclear Regulatory Commission
Washington, D.C. 20555

SER Issue No. 48-High Energy Line Breaks
Shoreham Nuclear Power Station- Unit 1
Docket No. 50-322

Reference: 1. Letter SNRC-786 dated 11/8/82
2. Letter from NRC (A. Schwencer) to LILCO
(M.S. Pollock) dated 1/24/83
3. Letter SNRC-887 dated 5/11/83

Dear Mr. Denton:

In response to SER Issue No. 48 "High Energy Line Breaks" (HELB), LILCO submitted the reference (1) letter forwarding a report entitled "High Energy Line Break/Control System Failure Analysis". It was concluded that conditions resulting from HELB and subsequent non-safety control system failures are bounded by the accident analyses contained in Chapter 15 of the FSAR.

In the reference (2) letter, the staff requested that the HELB study consider an additional single failure within the systems used to mitigate the event. In response, as stipulated in reference (3), two worst-case scenarios were evaluated for Shoreham:

Case I

- a) HELB occurs in Turbine Building
- b) Loss of feedwater heating occurs, causing reactor power increase to 117% of rated
- c) Turbine generator trip occurs coincident with peak reactor power

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- d) Scram occurs as a result of turbine generator trip
Loss of offsite power also occurs
- e) HPCI fails (Single failure)
- f) RCIC operates
- g) Reactor water level is restored by RCIC

Case II

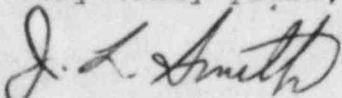
- a) Steps a through d are the same as Case I
- e) Loss of turbine bypass to condenser (Single failure)
- f) RCIC operates
- g) Reactor water level is restored by HPCI

The occurrence of these events is extremely unlikely as concluded in reference 3. Regardless, these two scenarios were analyzed quantitatively using the conservative Chapter 15 analysis models. The results indicate that the short term part of the Case I event with bypass (turbine trip at the thermal power monitor set-point power) is enveloped by the FSAR Chapter 15 Accident Analysis. In this case, the peak fuel cladding temperature is less than 900° F as compared to the 2200° F limit. The second event (Case II) imposed a failure of the turbine bypass system on the initial scenarios. The peak cladding temperature was estimated to reach approximately 1200° F, again well within the FSAR Chapter 15 accident limits.

Based on further discussions with Mr. J. Mauck of your staff, further assessment has been done and it has been determined that the radiological consequences for these events will be less than 10% of the 10CFR 100 limits.

We trust that this additional information is sufficient to completely close this issue. Should you have any questions, please contact this office.

Very truly yours,



J. L. Smith
Manager, Special Projects
Shoreham Nuclear Power Station

RWG:bc

cc: J. Higgins
All Parties Listed in Attachment 1

ATTACHMENT 1

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