



# LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

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

Direct Dial Number

April 8, 1983

SNRC-871

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

Response to the NRC Staff Positions  
Regarding Post Accident  
Sampling Representativeness  
Shoreham Nuclear Power Station - Unit 1  
Docket No. 50-322

Reference: NRC letter (R. L. Tedesco) to LILCO (M. S. Pollock)  
entitled, "Staff Positions", dated August 31, 1981.

Dear Mr. Denton:

In response to items 1 and 2 of the referenced letter please find  
enclosed the following postions on NUREG-0737, Section II.B.3:

Attachment 2 - "Post Accident Sampling at Low Decay Heat Power  
Levels"

Attachment 3 - "Post Accident Sampling, Assurance of a  
Representative Water Sample in the Suppression  
Chamber"

In a related issue, LILCO has committed to implement a post accident  
sampling program to ensure the capability to obtain and analyze  
reactor coolant, gaseous effluents and containment atmosphere samples  
under accident conditions. As stated in the administrative section  
of the Shoreham technical specifications (Section 6.8.4) the program  
will address the training of personnel and provisions for main-  
tenance of sampling and analysis equipment.

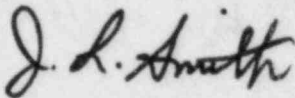
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LILCO believes the information enclosed is sufficient to constitute compliance with the staff positions on the aforementioned subjects as documented in Supplement No. 1 to the SER.

Very truly yours,



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

RT:bc

Enclosure

cc: J. Higgins  
All Parties Listed in Attachment 1

ATTACHMENT 1

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## Attachment 2

### II.B.3 - Post Accident Sampling at Low Decay Heat Power Levels

The Post Accident Sampling System (PASS) is designed to provide site personnel with the capability of promptly drawing and analyzing samples in less than 3 hours from the time a decision is made to take the sample. As a component of PASS, the jet pump sampling point is designed to be operable at times when the reactor pressure is greater than 100 psig. Below this pressure a reactor water sample is extracted from the RHR system. After a small break or non-break accident, the reactor vessel pressure can be reduced either by operation of ADS in a matter of minutes, or by controlled cooldown in approximately two to three hours whereupon low pressure systems can provide makeup and decay heat removal.

After a scram it can take as long as five hours for decay heat power to decrease to the 1% level. During the early hours of an accident, a representative jet pump sample is assured due to the higher level of mixing within the core plenum that is associated with decay heat power levels above 1%. In the later phases of an accident when the decay power is less than 1%, a representative sample will be obtained from the sample point in the RHR system while in the shutdown cooling mode.

If, for some unexpected reason, the reactor remains pressurized for longer than the time it takes to reach 1% decay heat power, some amount of jet pump sample dilution may be experienced. However, this represents a highly unlikely circumstance as one of the operator's prime objectives after an accident is to bring the reactor to a cold shutdown condition. In addition, since the operator is directed in the Emergency Shutdown Procedure (SP29.010.01) to attempt to restart the reactor recirculation pumps, this sample dilution may not occur. In either event, there are no detrimental consequences due to this potential dilution because the personnel on shift will already have had several hours of good data on RPV water radiochemistry. The sampling personnel will be instructed that dilution is possible under certain peculiar post-accident conditions and will not be misled by it.

It should be noted that the jet pump sample data, although helpful, is not essential to accident mitigation. Other redundant, class IE instrumentation can provide indications of core damage. Finally, the period of concern will, if it exists at all, be very brief; a representative sample will be assured once the reactor goes into RHR shutdown cooling mode.



Attachment 3

II.B.3 - Post Accident Sampling, Assurance of a Representative Water Sample in the Suppression Chamber,

Suppression pool samples will be obtained from the Residual Heat Removal system, with the selected loop aligned in the suppression pool cooling mode. The sampling lines are located on the discharge sides of the RHR pumps, downstream of the pump check valves.

Since no SRVS discharge directly into the RHR suction and the SRV discharge locations facilitate pool mixing, the pool sampling locations will provide adequately mixed samples. Following a large energy release to the suppression pool, the RHR system would normally be operating in the pool cooling mode during the sampling process to provide decay heat removal. If it is not necessary to provide suppression pool heat removal, representative samples of the pool inventory will be assured by operating the selected RHR loop for approximately 30 minutes prior to the taking of a sample.