



## LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

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

JOHN D. LEONARD, JR.  
VICE PRESIDENT - NUCLEAR OPERATIONS

SNRC-1222

JAN 16 1986

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

Fire Protection  
Shoreham Nuclear Power Station  
Docket No. 50-322

Reference 1: LILCO letter SNRC-1141 (J. D. Leonard) to NRC  
(Dr. T. E. Murley) dated January 29, 1985

Dear Mr. Denton:

The purpose of this letter is to provide information in response to concerns expressed by the NRC subsequent to receipt of Reference (1). These concerns and our response are:

1. Prevention of spurious operation of multiple safety relief valves (S/RV's).

The Shoreham design provides that 3 of the 11 S/RV's are controllable from the Remote Shutdown Panel (RSP). All of the Automatic Depressurization System (ADS) valves are included in the other 8 valves. A suggestion has been made that plant procedures be revised to require that the 8 valves not controlled from the RSP be disabled in the event of a control room evacuation due to a fire.

With the information presently available, LILCO does not fully understand the technical bases and justification to purposely disable an Emergency Core Cooling System (the ADS). Also, this action would conflict with basic operator training philosophy at Shoreham and is, to a degree, reminiscent of operator action during the accident at TMI

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Unit 2 (i.e., not allowing an ECCS to perform its intended function). The ADS was designed to protect the plant under a certain set of circumstances and it is conceivable that those circumstances could develop following a control room fire.

LILCO understands the NRC's concern for positive control over the operation of the plant. However, we are not convinced that the required control over the S/RVs and ultimately the safe shutdown of the plant is best served by deliberately disabling an emergency core cooling system. We are willing to discuss this further should the NRC deem it appropriate.

The effect of spurious operation of any S/RV's can be controlled automatically by the ADS system or responded to manually by electrically disabling the errant valve. Note that this electrical disabling will not prevent these valves from operating as safety valves.

2. With respect to Reference (1), Attachment 4, Table 1, Note 5, are permissives for the interlocks located outside of the control and relay rooms?

The permissives for these interlocks are located as indicated on the attached table. There are four redundant channels arranged in a one out of two taken twice logic. Also, within each channel, there is some redundancy, (e.g., main steam line area temp high and low steam line press).

3. Ability to verify that MSIV's are closed from outside the control room.

Additional information will be included in the procedures to inform the operator that MSIV position can be determined through the use of local Main Steam Line Flow differential pressure indicator in the Reactor Building. The procedures will also stipulate means to close the MSIV's by opening logic power supply breakers in the relay room should this become necessary.

It is important to note that the MSIV's do not constitute a high/low pressure interface.

4. Response to I.E. Information Notice 85-09.

The concerns regarding isolation of the alternate shutdown system from main control room (MCR) fires have been studied. The isolation methodology has been described in Attachment 4 to Reference 1. Shoreham is in compliance with all guidelines and can achieve a shutdown of the reactor after a MCR fire.

The concerns expressed in IE Information Notice 85-09 regarding the potential lack of redundant fuses in the alternate shutdown system circuits do not apply to the Shoreham Nuclear Power Station. All of the alternate shutdown system circuits contain redundant fuses which could not be blown by events during an MCR fire. The redundant fuses would be utilized by the alternate shutdown systems subsequent to switchover to the remote shutdown panel. All of the system switchover is accomplished at the remote shutdown panel.

Another aspect of this hypothetical MCR fire has been considered. Even though a loss of offsite power is not a consideration in this incident, it is remotely conceivable that the plant could lose the ability to use offsite power.

In this event, the diesel generators (D/G) would automatically start to provide the necessary power. Should the fire open the start circuit prior to loss of offsite power, the D/G's can be manually started from the local panel. Should a MCR fire cause a shorted D/G control circuit, the 4 KV D/G output breakers can be mechanically operated at the switchgear. This design was reviewed by the NRC during Shoreham's Appendix R review and found generally satisfactory in Inspection 84-46.

For the D/G control circuit interfaces with the MCR in both manual starting circuits and the manual stop circuit involve a switch contact. A MCR fire will either short or open the switch with the following consequences:

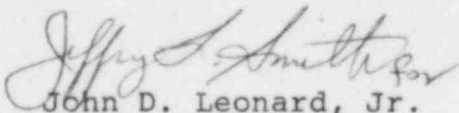
- o Start circuit (shorted switch) - if all other starting permissives are present, the D/G will attempt to start. This condition can be bypassed at the D/G control panel by switching to local control. No damage will occur in the local control portion of the circuit.
- o Start circuit (open switch) - loss of the ability to manually start the D/G from the MCR. Since the MCR is assumed uninhabitable, this condition is of no consequence. No damage will occur in the local control portion of the circuit.
- o Stop circuit (shorted switch) - energize the D/G shutdown solenoid. This condition can be bypassed at the D/G control panel by switching to local control. No damage will occur in the local control portion of the circuit.
- o Stop Circuit (open switch) - loss of ability to manually stop the D/G from the MCR. Since the MCR is assumed inoperable, this condition is of no consequence. No damage will occur in the local control portion of the circuit.

In the case of valves that can be controlled from the Remote Shutdown Panel, a shorted or open thermal overload light will not effect the remainder of the circuit. A maximum current flow will occur with a shorted light. At this level of current, less than .1 amp, the control power fuse will not blow nor will the circuit be damaged.

In summary, the existing isolation methods are acceptable.

If you require additional information, please contact this office.

Very truly yours,



John D. Leonard, Jr.  
Vice President - Nuclear Operations

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Attachment

cc: J. A. Berry  
NRC Resident Inspector

<u>SWEC Mark No. GE MPL</u>	<u>Service</u>	<u>Location</u>	<u>RPS Chan</u>	<u>Interpos Equip/ Panel</u>	<u>Remarks</u>
1B21*LT155A (B21-N081A)	Reactor Wtr Level	1H21*PNL004, Rx Bldg 78'	A1	-	Signal to 1B21*LIS155A
1B21*LIS155A (B21-N681A)	Rx Low Low Wtr Level	1H21*PNL101A, Control Rm Bldg 63'	A1	K1A/H11-P609	
1D11*RE011A (D11-N006A)	Mn Stm Line "A" Radiation Detector	Stm Tunnel	A1	-	Signal to 1D11*RIS011A
1D11*RIS011A (D11-K603A)	Mn Stm Line "A" Radiation High	1H11*PNL635, Control Rm 63'	A1	C71-K7A/H11-P609	C71-K7A provides signal to K44A/H11-P609
1B21*PDS02A1 (B21-N006A)	Mn Stm Line "A" High Flow (Diff)	1H21*PNL006, Rx Bldg 40'	A1	K3A/H11-P609	
1B21*PDS02B1 (B21-N007A)	Mn Stm Line "B" High Flow (Diff)	1H21*PNL006, Rx Bldg 40'	A1	K3A/H11-P609	
1B21*PDS02C1 (B21-N008A)	Mn Stm Line "C" High Flow (Diff)	1H21*PNL006, Rx Bldg 40'	A1	K3A/H11-P609	
B21*PDS02D1 (B21-N009A)	Mn Stm Line "D" High Flow (Diff)	1H21*PNL006, Rx Bldg 40'	A1	K3A/H11-P609	
1B21*PS020A (B21-N015A)	Mn Stm Line Low Press	Turb Bldg	A1	K4A/H11-P609	
1B21*TE037A	Mn Stm Line Area Temp Hi	Stm Tunnel	A1	1B21*TIS037/ H11-635	Signal to K68A/ H11-P609
1N21*PS194A	Condenser Low Vac	Stm Tunnel	A1	K68A/H11-P609	



<u>SWEC Mark No. GE MPL</u>	<u>Service</u>	<u>Location</u>	<u>RPS Chan</u>	<u>Interpos Equip/ Panel</u>	<u>Remarks</u>
1B21*TE059A (21-N014A)	Mn Stm Tunnel High Temp	Stm Tunnel	A1	1B21*TS059A (B21-N600A) H11-P635	Signal to K2A/ H11-P609
1B21*TE43Ax (B21-N016A)	Mn Stm Tunnel High Temp	Stm Tunnel	A1	1B21*TS043A (B21-N603A) H11-P635	Signal to K2A/ H11-P609
1B21*TE43AY (B21-N010A)	Mn Stm Tunnel High Temp	Stm Tunnel	A1	1B21*TS043A (B21-N603A) H11-P635	Signal to K2A/ H11-P609

## NOTES:

1. Channel A1 instrumentation shown channels A2, B1, and B2 are similar except the equipment will be located in different panels/area.
2. The steam tunnel is the steam line pipe chase between the reactor building and the turbine building at the 78 ft level.
3. Panels 1H11\*PNL609 and 1H11\*PNL635 are located in the control room in the control building at 63 ft level.
4. Interlocks are wired to interposing equipment/logic relays in panels in the control room which are normally energized (i.e., fail safe). These panels have wiring for one division only or are barriered for electrical separation for two divisions.
5. Table for 1B21\*A07091A-D and 1B21\*A0V082A-D only. 1C11\*A0V081, 082, 050, and 052 would be similar.