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SNRC-743

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U.S. Nuclear Regulatory Commission, Region I
631 Park Avenue
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NRC Inspection No. 82-04
Shoreham Nuclear Power Station, Unit No. 1
Docket No. 50-322

Dear Mr. Martin:

This letter responds to your letter of May 12, 1982, which forwarded the report of the special "as-built" inspection of activities authorized by NRC License No. CPPR-95, conducted by a team led by Dr. L. Bettenhausen of your office on February 8-26, 1982. Your letter stated that it appeared that some of our activities were not conducted in full compliance with the NRC requirements and that several program weaknesses were observed. The apparent noncompliances, observations, and our responses follow.

Appendix A

1. Apparent Noncompliance with 10CFR50, Appendix B, Criterion III, and 10CFR50, Appendix A, Criterion 56

10CFR50, Appendix B, Criterion III requires that measures shall be established to assure that applicable regulatory requirements are correctly translated into specifications and drawings.

1. Apparent Noncompliance with 10CFR50, Appendix B, Criterion III, and 10CFR50, Appendix A, Criterion 56 (Cont'd.)

10CFR50, Appendix A, Criterion 56, states, in part, "...Each line that connects directly to the containment atmosphere and penetrates primary containment shall be provided with containment isolation valves... A simple check valve may not be used as the automatic isolation valve outside containment."

Contrary to the above, a one-inch diameter High Pressure Coolant Injection steam drain line penetrates primary containment and connects directly to the containment atmosphere with only two simple check valves outside containment for isolation.

LILCO Position

LILCO contends that the use of two simple check valves outside the containment is justifiable. The rationale for this decision is as follows:

Function

When initiating the steam condensing mode of RHR, it is required to open 1E11*MOV049 which will allow steam from the HPCI system to be directed to the RHR heat exchangers. In series with this MOV are pressure control valves 1E11*PCV003 A&B which regulate the pressure buildup in the RHR heat exchangers. A potential exists for water accumulation between the PCVs and the MOV which could cause dynamic effects such as water hammer when the system is put in operation. This condition could occur if steam leakage past the MOV condenses and accumulates just upstream of the closed PCVs and at a low point just downstream of the MOV.

To prevent this from occurring, continuously sloped lines are required to provide drainage. To prevent steam (radioactive) release to the secondary containment, (i.e.: floordrain), to provide continuously sloped drainage, and to provide a quenching capability, the pipe must be routed to the suppression pool. Tying this drain line into the RHR heat exchanger relief valve discharge line accomplishes all of the above, without imposing new requirements or restrictions.

Area of Concern

The two check valves in series, both located outside primary containment, are not in literal compliance with GDC56. The two areas of noncompliance are:

1. Area of Concern (Cont'd.)

1) A simple check valve on this influent line is not provided inside the primary containment, and

2) The outboard containment isolation valve is not an automatic valve (simple check valve is not considered an automatic valve).

Item 1)

As discussed in FSAR section 6.2.4, the GDC does not reflect consideration of the BWR suppression pool. It is preferable not to locate isolation valves inside the suppression chamber air space of the primary containment because of environmental conditions and suppression pool dynamics. Therefore, in the case of BWR influent lines to the suppression chamber, it will be beneficial to locate the inboard isolation valve outside the primary containment as was done in this case.

Item 2)

In LILCO's case, the HPCI steam drain lines impact containment isolation involving two penetrations X-43 and XS-5. Each is independently discussed below:

X43

Containment isolation criteria for this penetration is justified in FSAR Section 6.2.4.3.3. Since this arrangement is a special case, further justification must be provided where the HPCI drain line ties in. This justification is as follows:

The HPCI drain line is provided with isolation capabilities commensurate with the importance to the safety of isolating it. This line is orificed at the point of connection to the inboard side of the primary containment penetration to ensure that in the event of a postulated failure of the piping, or of any component in the line outside the primary containment, that the leakage is reduced to the maximum extent practical, the integrity and functional performance of the secondary containment and associated safety systems will be maintained, and the potential offsite exposure will be a small fraction of the guidelines

1. X43 (Cont'd.)

of 10CFR100. In addition, a normally locked open manual valve between the check valves and the primary containment penetration is provided. This manual valve and the check valves are located as close as practical to the penetration.

This containment isolation system, including isolation check and manual valves and piping, is designed and constructed to ASME Section III - Code Class 2 and meets Seismic Category I requirements. Thus, the valves and piping meet the same quality standards as the primary containment. All containment isolation piping and valves located outside the primary containment are accessible for inservice inspection during plant operations and are located in the secondary containment, a leakage control area serviced by the RBSVS. Also all piping, equipment, and valves within systems considered closed outside the outermost isolation valve are accessible for inservice inspection during plant operations, designed and constructed to ASME Section III - Code Class 2, and meet Seismic Category I requirements. Thus, closed systems outside containment are of the same quality standards as the primary containment and are located in the secondary containment which is a leakage control area. If an automatic isolation valve were added in the line outside of the primary containment, and if it inadvertently closed while going into the steam condensing mode, the drainage arrangement would not function and reliability of the RHR heat exchanger and associated piping would be degraded, reducing the present high reliability of the system and compromising the overall design.

XS-5

Containment isolation criteria for this penetration is justified in FSAR Section 6.2.4.3.3. Since this also is a special case, further justification must be provided where the HPCI drain line ties in. This justification is as follows:

Refer to the above comments for X-43 except that, in this case, the orifice at the point of connection to the inboard side of the primary containment penetration (X-43, which is open to the

1. XS-5 (Cont'd.)

suppression chamber) does not exist. However, the criteria is satisfied to a greater extent, since the piping discharge point located inside the primary containment is below the suppression pool water surface, and is thus already provided with isolation from the suppression chamber air space by a water seal.

Corrective Action and Results

FSAR Section 6.2.4.3.3 "Evaluation Against Criterion 56" will be revised to include this HPCI steam drain line. Table 6.2.4-1, "Process Pipelines Penetrating Primary Containment" will also be revised. No change is required for FSAR Fig. 6.2.4-2 "Criterion 56 Containment Isolation Valves" since this line is already depicted.

Steps Taken to Prevent Recurrence

LILCO considers this case to be a deviation from FSAR requirements in that the as-built conditions and justification were not included in the FSAR. LILCO has initiated a Shoreham Plant Configuration Review Program to determine differences between the as-built station and FSAR descriptions. The findings derived from this program will be used to revise the FSAR to match the as-built configuration.

Date Full Compliance Will Be Achieved

The FSAR revision noted in "Corrective Action" above is scheduled for early August, 1982.

2. Apparent Noncompliance with 10CFR50 Appendix B Criterion III, 10CFR50.55a(h), and FSAR Chapter 7

10CFR50, Appendix B, Criterion III states, in part, "Measures shall be established to assure that applicable regulatory requirements... as specified in the license application... are correctly translated into specifications, drawings, procedures and instructions".

10CFR50.55a(h) states that protection systems shall meet requirements of Institute of Electrical and Electronics Engineers Standard 279 (IEEE-279). Paragraph 4.17 of IEEE-279-1971 requires that protection systems include means for manual initiation of each protective action at the system level.

2. Apparent Noncompliance with 10CFR50 Appendix B Criterion III, 10CFR50.55a(h), and FSAR Chapter 7 (Cont'd.)

a. Shoreham Final Safety Analysis Report (FSAR) paragraph 7.3.2.1.2.19 states that the Emergency Core Cooling System (ECCS) meets Regulatory Guide (RG) 1.62, which describes an acceptable method of complying with IEEE-279 Paragraph 4.17. Paragraph C.2 of RG 1.62 states that manual initiation of a protective action at the system level should perform all actions performed by automatic initiation, such as starting auxiliary or supporting systems and sending signals to appropriate valve-actuating mechanisms to assure correct valve position.

Contrary to the above, the manual initiation circuitry for the Low Pressure Coolant Injection (LPCI) System (a portion of ECCS) does not provide signals to start and assure correct valve position for the following LPCI auxiliary systems: Reactor Building Closed Loop Cooling Water (RBCLCW) for LPCI pumps seal coolers, area coolers for air-cooled LPCI pump motors, or chilled water to these area coolers. Additionally, eight LPCI valves are not sent signals to assure correct valve position upon manual initiation.

b. Shoreham FSAR paragraph 7.6.2.5.2.12 states that the RBCLCW system meets RG 1.62.

Contrary to the above, there is no system level manual initiation for the RBCLCW system.

LILCO Position

LILCO does not concur that this finding constitutes a violation. The rationale for this decision is as follows:

a. It is true that LPCI, a subsystem of RHR (one of the ECCS), does not provide signals to place the Reactor Building Closed Loop Cooling Water (RBCLCW) system in the accident mode. The RBCLCW system receives its manual initiation signal from the core spray system logic due to the fact that this is the system from which all the automatic initiation circuitry is developed. Therefore, the manual initiation signal activates all equipment/systems that are activated by the corresponding automatic activation signal, and thus is in compliance with Regulatory Guide 1.62, paragraph C.2 and IEEE-279-1971, paragraph 4.17.

2. LILCO Position (Cont'd.)

References:

SWEC Drawings 11600.02-ESK-6P4205 to 6P4207, 6P4207A, 6P4208, 6P4208A, 6P4213 to 6P4226, 6P4228, and 6P4201 to 6P4203.

GE Drawings 791E419TF Sheets 1, 2, 3, 4, and 7.

SWEC Valves 1P42*MOV031A&B, 032A&B, 033A&B, 034A&B, 041A&B, 042A&B, 043A&B, 044A&B, 231 to 240, 147 & 148, SOV001W to 001Z, SOV202, 293, 294, and pumps 1P42*P005A&B.

It is also true that LPCI, a subsystem of RHR (one of the ECCS), does not provide signals to place the area coolers for air-cooled LPCI pump motors or chilled water to these area coolers in the accident mode. These systems receive their manual initiation signals from either the Nuclear Steam Supply Shutoff System (NSSSS) logic or Reactor Building Standby Ventilation System (RBSVS) logic due to the fact that these are the same systems from which all of the automatic initiation circuitry is developed. Therefore, the manual initiation signal activates all equipment/systems that are activated by the corresponding automatic activation signal and thus is in compliance with Regulatory Guide 1.62, paragraph C.2 and IEEE-279-1971, paragraph 4.17.

References:

SWEC Drawings 11600.02-ESK-11T4601, 11T4602, 6T4619, 6T4620, 13T4605, 13T4606, 13T4607, 13T4608, 5M5001A, 5M5002A, 6M5001, 6M5009, 6M5010, 5M5003A, 5M5004A, 6M5002.

GE Drawings 791E401TF Sheets 1, 2, 6, 7 and 8.

SWEC Valves 1T46*TOV022A&B, 023A&B, 1M50*AOV068A&B, 069A&B

SWEC Pumps 1M50*P137A&B, 1M50*P138A&B

SWEC Unit Coolers 1T46*UC-002A&B, 1T46*UC-003A&B

SWEC Chiller 1M50*WC-003A&B, 1M50*WC-004A&B

The eight RHR system valves listed below also do not receive a signal for manual initiation from LPCI, a subsystem of RHR. These valves receive their manual initiation signal from the NSSSS logic since this is the same

2. LILCO Position (Cont'd.)

system from which all of the automatic initiation circuitry is developed. Therefore, the manual initiation signal activates all equipment/systems that are activated by the corresponding automatic activation signal and thus complies with Regulatory Guide 1.62.

References:

SWEC Drawings 11600.02-ESK-6E1106, 6E1107, 11E1102, and 11E1103.

GE Drawings 791E401TF Sheets 1, 2, 6 to 9, 13 and 14.

SWEC Valves 1E11*MOV051 to 054 and 1E11*AOV061A&B and 1E11*AOV062A&B.

b. It is true that there is no system level manual initiation for the RBCLCW system due to the fact that manual initiation of the RBCLCW system gets its signal from the core spray system logic and therefore meets Regulatory Guide 1.62, paragraph C.2 and IEEE-279-1971, paragraph 4.17, for the same reasons as stated in item a. above.

NOTE: The NSSSS logic operates the RBSVS and CRAC chilled water systems at a different level ahead of the corresponding system logic which operates all of the RBCLCW system components at different reactor level and pressure setpoints.

Corrective Action and Results

The Shoreham design is in compliance with the guidance provided in NRC Regulatory Guide 1.62, as described above, so no corrective action is necessary.

3. Apparent Noncompliance with 10CFR50 Appendix B Criterion II

10CFR50, Appendix B, Criterion II states, in part, "... The quality assurance program shall provide control over activities affecting the quality of the identified structures, systems, and components, to an extent consistent with their importance to safety...".

3. Apparent Noncompliance with 10CFR50 Appendix B Criterion II (Cont'd.)

Contrary to the above, on February 25, 1982, pipe support P42*PSST-056 on the Reactor Building Closed Loop Cooling Water system was not properly maintained in its as-built configuration in accordance with drawing requirements after final inspection and acceptance, in that one of the struts was at least 5½ degrees out of the vertical, in excess of the design tolerance of 4 degrees.

This violation was corrected prior to completion of the inspection.

Steps Taken to Prevent Recurrence

It was determined that the out-of-tolerance attitude of hanger P42*PSST-056 was caused by contractor personnel attaching a scaffold to the installation. The contractor responsible for the installation of temporary scaffolding has, by means of written memorandum, reinstructed his supervisory personnel against the practice of utilizing permanent plant components to support scaffolding.

Date of Full Compliance

The above memorandum was dated March 3, 1982.

4. Apparent Noncompliance with 10CFR50 Appendix B Criterion V

10CFR50, Appendix B, Criterion V, states, in part, "Activities affecting quality shall be prescribed by documented instructions, procedures ...". Stone & Webster Engineering Corporation Construction Site Instruction 13.1, states, in part, "Work areas shall be kept sufficiently clean and orderly so that construction activity can proceed in an efficient manner ... excess material shall not be allowed to accumulate and create conditions that will adversely affect quality ... Equipment and instructions for the protection from the prevention of damage by fire shall be provided ...".

Contrary to the above, these examples of inadequate housekeeping and fire protection were found:

a. On February 12, 1982 and again on February 24, 1982, these fire hazards were identified in Fuel Oil Transfer Rooms: fuel leaking from pumps; fuel oil in drip trays, wells and buckets; combustible fumes in rooms while transfer pumps running and room vents taped closed. On February 25, 1982 welding of fuel oil transfer pump check

4. Apparent Noncompliance with 10CFR50 Appendix B Criterion V

a. (Cont'd.)

valves in transfer room "C" was observed with no fire extinguishers present, no fire watch designated and no cleanup of fire hazards identified on February 24, 1982.

Corrective Actions and Results

Repairs were made to the fuel oil transfer pumps to stop leaks from the packing glands. Loose oil was cleaned from areas around the fuel oil transfer pumps. Temporary closures on room vents, left over from Construction activities, were removed.

Steps Taken to Prevent Recurrence

Personnel have been assigned to keep areas around the fuel oil transfer pumps free of standing fuel oil. Contractor has been notified to have fire extinguishers in place prior to starting work.

Date of Full Compliance

This item is complete.

b. On February 12, 1982 and again on February 24, 1982, these fire hazards were identified in Emergency Diesel Generator (EDG) Rooms: fuel oil overflowing from plastic hoses on the fuel oil day tank, fuel oil in open buckets and fuel oil on floor and foundations under engine and generator. On February 25, 1982, welding was observed on EDG's A and C with fuel oil still under engines and generators.

Corrective Actions and Results

Personnel were assigned to the Emergency Diesel Generator Rooms to remove open buckets of fuel oil and fuel oil drippings from the floor and foundation around the engines/ generators. Temporary drainage hoses were removed from the fuel oil day tank.

4. Apparent Noncompliance with 10CFR50 Appendix B Criterion V

b. (Cont'd.)

Steps Taken to Prevent Recurrence

Personnel have been assigned to the Emergency Diesel Generator Rooms to keep these areas free of standing fuel oil in and around the engines/generators.

Date of Full Compliance

This item is complete.

c. On February 24, 1982, both rooms of the Screenwell Pumphouse were observed to have accumulated excess material and were extremely dirty. Material blocked access to electrical panels and hindered work.

This violation was corrected prior to completion of the inspection.

Corrective Actions and Results

Unused excess material was removed from the Screenwell Pumphouse. Ladders and tables were removed from blocking cabinets R23MCC1110 and MCC11B4.

Steps Taken to Prevent Recurrence

Personnel have been assigned to keep areas around the building Motor Control Centers clear of material blockages.

Date of Full Compliance

This item is complete.

Appendix B

1. Apparent Noncompliance with the Final Safety Analysis Report (FSAR) Section 3.10.2.1.1B and Table 3.10.2.B-1

FSAR Section 3.10.2.1.1B and Table 3.10.2.B-1 establishes approved criteria for installation of Standard Cabinets using a specified number of 5/8-inch mounting bolts.

Contrary to the above, Standard Cabinet H11*PNL-608 was installed with twenty 5/8-inch bolts instead of forty bolts and Standard Cabinets H11*PNL-635 and H11*PNL-636 were each installed with eight 5/8-inch bolts instead of twelve 5/8-inch bolts.

Corrective Actions and Results

The above mentioned cabinets were installed in accordance with their associated General Electric assembly drawing bolting patterns:

for H11*PNL-608	20 - .75"	diameter bolt hole sites (Ref. GE file No. 791E5978B, Rev. 0)
for H11*PNL-635/636	8 - .75"	diameter bolt hole sites (Ref. GE file No. 828E481TF, Rev. 6)

Table 3.10.2B-2 titled "Seismic Verification Data Sheet", referenced in FSAR Section 3.10.2.1.1B, will be revised to reflect the as-built configuration of the Startup Neutron Monitor and Power Range Monitor Standard Cabinets.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program to determine conformance of as-built configurations to FSAR descriptions. The program results will be used to make necessary corrections in the FSAR.

Date Full Compliance will be Achieved

The FSAR revision is scheduled for early September, 1982.

2. Apparent Noncompliance with FSAR Chapter 6 and Figure 6.2.5-7

FSAR Chapter 6.2 and Figure 6.2.5-7 describe Primary Containment Spray and specify the number of spray nozzles. A number of drywell spray nozzles are permanently blocked by ventilation duct work, reducing the effectiveness of the containment spray system.

Corrective Action and Results

LILCO has determined that approximately five percent of the drywell spray nozzles are blocked by duct work. A conservative assumption is that the spray flow rate (effectiveness) is dropped by five percent. This reduction does not have a significant effect on DBA, steam bypass, or environmental qualification analyses.

In the DBA, the peak pressure is reached before spray actuation, so the reduction in flow has no impact on peak pressure. For steam bypass, no credit has been taken for the first 30 minutes for the drywell spray. Therefore, the peak pressure is independent of drywell spray. In the analysis for the environmental qualification program, double-ended rupture of the recirculating line was used for peak pressure with no credit for the spray system. Therefore, the five percent reduction has no impact on the long-term pressure calculation.

Steps Taken to Prevent Recurrence

Not Applicable

Date Compliance Will be Achieved

The above explanation indicates that the five percent reduction of spray flow rate is an acceptable condition.

3. Apparent Noncompliance with FSAR Page 7.3-22 Item b.iii

FSAR, p.7.3-22 states that valves from other Residual Heat Removal (RHR) modes are automatically positioned so that water is correctly routed during Low Pressure Coolant Injection (LPCI) operation.

Contrary to this E11*MOV-055 and 056, one-inch RHR Heat Exchanger vents to Suppression Pool, and E11*MOV-057, RHR cooling water to Hydrogen Recombiner, are not automatically positioned.

3. Apparent Noncompliance with FSAR Page 7.3-22 Item b.iii (Cont'd)

LILCO Position

LILCO does not agree that this finding constitutes a deviation from FSAR requirements. The explanation follows:

All valves required to be used for design RHR flow conditions are positioned automatically in the event of a LOCA. The RHR Hx vents (MOVs 55 and 56) are only opened when the reactor is in a hot standby condition and is isolated from the main condenser (RHR steam condensing mode). If a LOCA were assumed to occur during this time, the minor flow through these vents would not affect LPCI performance since it returns to the suppression pool via a closed path. The reduction in LPCI flow would not be significant to system performance.

Concerning MOV 57, RHR water is used to cool the post LOCA Hydrogen Recombiners required to be operable after a LOCA. These valves would only be open during system testing. The minor RHR flow to the recombiner (10 gpm) is insignificant compared to normal LPCI flow and would not impair system operation. Auto closure of the valves is not required.

Corrective Action

For the sake of clarity, the FSAR will be revised to indicate that "all valves required to ensure LPCI flow are positioned automatically whenever LPCI is required to be available".

Steps Taken to Prevent Recurrence

Not Applicable

Date When Full Compliance Will Be Achieved

The FSAR revision noted above is scheduled for early September, 1982.

4. Apparent Noncompliance with FSAR Figure 7.3.1-6 and Table 7.3.2-4

FSAR Figure 7.3.1-6 and Table 7.3.2-4 describes LPCI Loop selection logic and instruments.

Contrary to this description, the logic has been deleted and is not a design feature.

4. Apparent Noncompliance with FSAR Figure 7.3.1-6 and Table 7.3.2-4 (Cont'd)

Corrective Action and Results

The RHR logic shown on FSAR Figure 7.3.1-6 will be revised to delete the LPCI Loop selection logic shown.

The LPCI Loop selection instruments and 2/3 core height interlock for containment spray instruments will be deleted from FSAR Table 7.3.2-4 to reflect the latest design.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program described in the response to Item 1 of Appendix B.

Date Full Compliance Will Be Achieved

Early September, 1982.

5. Apparent Noncompliance with FSAR Tables 6.3.3-6 and 7.3.1-4

FSAR Table 7.3.4 (sic) shows trip set points of 2 psig for drywell pressure and 500 psig for LPCI low pressure. Page 6.3-12 and Table 6.3.3-6 also give the LPCI low pressure set point of 500 psig.

Contrary to this, the present setpoints are 1.69 psig and 409 psig, respectively.

Corrective Action and Results

FSAR Table 7.3.1-4 trip settings will be updated to reflect the latest design. The primary containment high pressure (LPCI initiation) changes from 2 psig to 1.69 psig and the LPCI reactor vessel low pressure changes from 500 psig to 409 psig.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program described in the response to Item 1 of Appendix B.

5. Apparent Noncompliance with FSAR Tables 6.3.3-6 and 7.3.1-4 (Cont'd)

Date Full Compliance Will Be Achieved

Early September, 1982.

6. Apparent Noncompliance with FSAR Figures 7.3.1-10 A&B

FSAR Figure 7.3.1-10 A&B are RHR piping and instrument drawings. Contrary to these drawings, the as-constructed plant deviates as follows:

- Loop fill on B Loop is between valves F015 and F017.
- Relief valves F030A-D go to floor drains, not controlled radwaste.
- Relief valve F025 is not a thermal relief as stated in Note 12.
- The line to Radwaste through valves MO-F040 and F049 is on the opposite side of valve MO-F010 as that shown.
- Cooling water for RHR pumps is Reactor Building Closed Loop Cooling Water, not Emergency Equipment Cooling Water.
- Drains from RHR pump suction and discharge do not tie together as shown.

Corrective Action and Results

Figures 7.3.1-10 A&B will be revised to agree with the as-constructed plant.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program as described in the response to Item 1 of Appendix B.

Date When Full Compliance Will Be Achieved

Early September, 1982.

7. Apparent Noncompliance with FSAR Section 5.5.7.3.1 re RHR Heat Exchanger Relief Valves

FSAR, p. 5.5-22 states that a relief valve on the RHR pump discharge and another on the RCIC steam supply protect the heat exchanger. Contrary to this one relief valve is on the discharge line into the heat exchanger, with two valves intervening from the RHR pump discharge, and the steam supply is from HPCI, rather than RCIC.

Corrective Action and Results

The FSAR will be corrected to state that one relief valve is on the discharge line into the heat exchanger, with two valves intervening from the RHR pump discharge, and that the steam supply is from HPCI, rather than RCIC.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program described in the Appendix B Item 1 response.

Date When Full Compliance Will Be Achieved

Early September, 1982.

8. Apparent Noncompliance with FSAR Section 7.3.1.1.4 Item 2

FSAR, p. 7.3-25 states that only the air-operated check valve and check bypass valve are located in containment. Contrary to this, a manual isolation valve and manual test, vent and drain valves and connections are located in primary containment.

Corrective Action and Results

The FSAR will be revised to state that a manual isolation valve and manual test, vent and drain valves and connections are also located in primary containment.

Steps Taken to Prevent Recurrence

LILCO has initiated a Shoreham Plant Configuration Review Program described in the Appendix B Item 1 response.

Date When Full Compliance Will Be Achieved

Early September, 1982.

Appendix C

1. Timely Incorporation of E&DCRs into Drawings and Specifications

No specific requirements were evident for timely incorporation of approved Engineering and Design Change Reports (E&DCRs) into drawings and specifications. As an example, the two flow diagrams for the Residual Heat Removal System used for this inspection were last revised December 10, 1980. There were 34 E&DCRs outstanding against these two drawings at the time of inspection; some date back to 1978. While no violations were identified as a result of the practice, the number of E&DCRs and affected drawings and specifications lead to a concern for timely incorporation of changes as construction nears completion. The primary concern is that drawings be completed and readily usable by Plant Staff for Plant operations.

LILCO Actions and Results

Shoreham Project procedures dictate the drawings that are to be updated by Fuel Load. In total, the outstanding E&DCRs for these drawings average one E&DCR for three drawings. The program in place will result in the incorporation of E&DCRs by Fuel Load to the extent that the documents are readily usable by Plant Staff for Plant operations.

Flow diagram updates lag the other types of drawings due to the extensive review cycle. Currently, approximately 400 E&DCRs are outstanding against 120 flow diagrams, which is a manageable number, on average.

Residual Heat Removal (RHR) Flow Diagrams FM-20 A&B, cited in the Observation, are an exception due to the numerous changes to a complex system. Revision 14 was issued on April 16, 1982, incorporating 16 E&DCRs on FM-20A and 12 on FM-20B. Currently, all outstanding E&DCRs (13 and 9, respectively) have been incorporated and are starting the review cycle for issue.

Flow Diagram FM-52A, Primary Containment Atmospheric Control System, is the only other identified abnormality, with 13 E&DCRs having recently been similarly incorporated. Three flow diagrams have 6 or 7 unincorporated E&DCRs, with all of the balance having 5 or less.

The E&DCR tracking system identifies outstanding E&DCRs and an active program is in-place that will ensure that the critical diagrams are readily usable by the Plant Staff.

2. Adequate Electrical Separation

E&DCR F-27961 established requirements for separation of Class 1E and non-Class 1E electrical cables in transit between raceways. Four examples were found that did not comply with these requirements. The Final Safety Analysis Report description of cable tray separation did not agree with recommendations of Institute of Electrical and Electronics Engineers Standard 384-1974. The licensee is engaged in a major program to ensure adequate electrical separation throughout the plant. The concern is that the program for ensuring electrical separation adequately address all aspects of separation, including redundancy and fire hazard considerations.

LILCO Actions and Results

Separation of cables in transition between raceways or raceways and equipment are presently being addressed. If they do not comply with the 1 ft. X 3 ft. X 3 ft. X 5 ft. separation of IEEE 384-1974 the cables will be wrapped with a suitable barrier material as discussed in SNRC-712. These areas will be inspected after the contractor has installed wrapping as determined by Engineering.

A walkdown will also be performed of all areas, which have Category I cables, to determine and mark locations where installed cables do not comply with the requirements of IEEE 384-1974. Cables so marked will be wrapped and inspected per E&DCR F-41238 with a suitable barrier material, thereby complying with IEEE-384. Open ladder type cable trays that do not comply with IEEE-384 will be covered or enclosed in order to comply.

The FSAR will be updated or corrected, if necessary. With respect to the response to Request 223.12, it does address the differences between Reg. Guide 1.75 and IEEE-384-1974 and has been updated recently to further clarify some areas.

3. Apparent Omissions from Proposed Technical Specifications

Proposed Technical Specifications did not include all Residual Heat Removal pipe restraints (snubbers), did not recognize multiple snubbers and did not appropriately classify "high radiation zone" or "especially difficult to remove" snubbers. The proposed Technical Specifications also omitted important, plant unique, safety-related systems such as Reactor Building Closed Loop Cooling Water and Low Pressure Coolant Injection Motor Generator Sets. The concern is that submittals reflect the complete detail of the constructed plant.

3. Apparent Omissions from Proposed Technical Specifications (Cont'd)

LILCO Actions and Results

Discussions and negotiations are ongoing with the NRC Staff as plant-specific requirements are incorporated into acceptable language. Technical Specifications have been revised to include the RBCLCW System and the LPCI Motor Generator Sets. In addition, LILCO is discussing acceptance criteria and surveillance requirements with the staff with the intention that Technical Specifications can be drafted for the Leakage Return System, the Drywell Floor Seal, and the Drywell Floor Seal Pressurization System. It is LILCO's position that a specification for RHR Area Coolers is not required since RHR is not located in an enclosure and temperature of the general area is already covered by Technical Specification 3.7.9.

Regarding the omission of some safety-related snubbers from the February 1 Draft, and discrepancies in the designation for "High Radiation Zone" and "Especially Difficult to Remove" snubbers, the NRC Standard Technical Specifications (STS) were under revision at the time of LILCO's February submittal to the NRC. Earlier draft versions of the STS had indicated major changes in the types of required information. Anticipating that LILCO would soon have to update Table 3.7.5-1 in the new format, recently installed snubbers were not included in the soon-to-be-outdated Table 3.7.5-1. The most recent STS Table 3.7.5-1 does not require the "High Radiation Zones" and "Difficult to Remove" designations. LILCO has included all previously omitted snubbers in the revised STS format.

Time of Completion

This concern will have been satisfied when the Technical Specifications for Shoreham are issued prior to Fuel Load.

4. Corroded Carbon Steel Bolting on Copper-Nickel Flanged Piping

Carbon steel bolting used on copper-nickel flanged piping, particularly the Service Water System, was observed to be corroded. The condition had been identified by nonconformance reports and a corrective action plan was verbally outlined by licensee representatives. There is a concern that the corrective action may not be thorough and may not preclude recurrence.

4. Corroded Carbon Steel Bolting on Copper-Nickel Flanged Piping (Cont'd)

Regarding the corrosion of bolts on flanged piping, this potential problem had been previously identified by LILCO and a program is presently underway which entails inspection of flanged joints and verification that the correct bolting material has been installed.

Specification SH1-056 has been addended by E&DCR F-25229C to clarify requirements for dissimilar flange and bolting materials and to specify those piping joints that entail the use of insulation kits and gaskets to prevent galvanic corrosion.

The responsible contractor has developed and is implementing a procedure to inspect all applicable bolted joints, using a checklist, in order to verify use of the proper insulation. It is emphasized that all applicable dissimilar metal joints are examined, not only those containing corroded bolting. These inspections are duly documented and, if a nonconformance is detected, corrective action is performed and verified by the contractor's Quality Control organization.

Very truly yours,

M. S. Pollock

M. S. Pollock
Vice President-Nuclear

/dls/mm

cc: Mr. J. Higgins
All Parties

STATE OF NEW YORK)
: ss.:
COUNTY OF NASSAU)

MILLARD S. POLLOCK, being duly sworn, deposes and says that I am a Vice President of Long Island Lighting Company, the owner of the facility described in the caption above. I have read the Observations and the Notices of Violation and of Deviation dated May 12, 1982, and also the responses thereto prepared under my direction dated July 29, 1982. The facts set forth in said responses are based upon reports and information provided to me by the employees, agents, and representatives of Long Island Lighting Company responsible for the activities described in said Observations, Notices of Violation and Deviation, and said response. I believe the facts set forth in said responses are true.

Millard S. Pollock

MILLARD S. POLLOCK

Sworn to before me this
28th day of July, 1982.

Leda M. Moncayo

LEDA M. MONCAYO
Notary Public, State of New York
No. 52-2746125
Qualified in Suffolk County
Commission Expires March 30, 1983