U.S. NUCLEAR REGULATORY COMMISSION
REGION I

Report No. 50-322/84-14

Docket No. 50-322

License No. CPPR-95 Priority -- Category B

License: Long Island Lighting Company
175 East Old Country Road
Hicksville, New York 11801

Facility Name: Shoreham Nuclear Power Station

Inspection At: Shoreham, New York

Inspection Conducted: April 16-27, 1984

Inspectors:

A. Finkel	A. Finkel, Lead Reactor Inspector	6/6/84 date
A. E. Lhuff for D. Napuda	G. Napuda, Lead Reactor Inspector	6/6/84 date
H. Nicholas	H. Nicholas, Lead Reactor Engineer	6/7/84 date
A. E. Lhuff for J. Raval	J. Raval, Reactor Engineer	6/7/84 date
A. E. Lhuff for P. Wen	P. Wen, Reactor Engineer	6/7/84 date
C. Woodard	C. Woodard, Reactor Engineer	6/7/84 date
J. Hodson	J. Hodson, Reactor Engineer	6/6/84 date
P. Bissett	P. Bissett, Reactor Engineer	6/6/84 date
Leonard S. Cheung	L. Cheung, Reactor Engineer	6/6/84 date

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William Oliveira 6/6/84
W. Oliveira, Reactor Engineer — date

E. Thomas Shaub 6·6·84
E. Shaub, Reactor Engineer — date

Approved By: Clifford J. Anderson 6/25/84
C. J. Anderson, Plant System Section — date
Engineering Protection Branch, DETP

Inspection Summary:

Inspection on April 16-27, 1984 (Report Number 50-322/84-14)

Areas Inspected: Routine announced inspection of licensee's action on previous inspection findings and NRC Bulletins and Circulars. The inspection involved 440 inspector-hours onsite by eleven region-based inspectors.

Results:

No violations were identified.

DETAILS

1. Persons Contacted

   1.1 Long Island Lighting Company

   * M. Basford, Field Quality Assurance
   * G. Gisonda, Compliance Engineer
   * G. Gogates, Compliance Engineer
   * L. Henry, Operation Quality Assurance
   * J. McCarthy, Field Quality Assurance Supervisor
   * J. Morin, Supervisor of Compliance Engineering
   * J. Rose, Operation Quality Assurance
   * W. Steiger, Plant Manager
   * J. Wynne, Compliance Engineer

   1.2 Stone and Webster Corporation

   * A. Dobrzeniecki, Startup Engineer

   1.3 United States Nuclear Regulatory Commission

   * C. Petrone, Resident Inspector

   * Denotes those present at exit interviews on April 25 and 27, 1984.

2.0 Licensee Action on Previous Inspection Findings, NRC Bulletins and Circulars

(Closed) Bulletin 77-05/05A - Failure of Electrical Connectors During Environmental Testing. The licensee has identified the equipment that is safety-related with qualification data submitted as part of their IE Bulletin 79-01B qualification submittal to the NRC. The NRC is presently reviewing the licensee's submittal as part of the qualification evaluation program.

(Closed) Bulletin 78-14 - Deterioration of Buna-N Components in ASCO Solenoids. The licensee has reviewed their safety systems and identified areas where this type of component is used. A maintenance program has been established to replace parts prior to end of life usage.

(Closed) Circular 80-10 - Failure to Maintain Environmental Qualification of Equipment. Pertaining to the maintenance of qualified equipment through the licensee's maintenance cycle. To comply with this criteria the licensee has issued the following documentation.

-- Procedure SP No. 31.004.01, May 16, 1983, titled Implementation of Environmental Qualification Requirements - Maintenance. This procedure provides guidance to the maintenance section and describes methods by which maintenance personnel identify environmentally qualified equipment. Reference is made to Procedure SP No. 12.020.01 titled Environmental Qualification - Program.

-- Procedure SP No. 41.007.01, March 16, 1983, titled Implementation of Environmental Qualification Requirements I&C. This procedure provides guidance for station personnel to provide environment qualification program requirements to the station preventive maintenance program. The I&C engineer is responsible for ensuring the implementation of this procedure.

(Closed) Circular 81-14 - Main Steam Isolation Valve Failures to Close. Pertaining to two main causes for MSIV failures, (1) poor quality control air to the pilot valves and (2) binding of the MSIV valve stems with the valve stem packing.

The licensee has completed an analysis of their air system and for those MSIV valves in the system. The combination of moisture separators, filters and air dyers removes water and solids down to one micron with a dryness equivalent of a -40°F dew point. Instrument air is used on the outer MSIV's.

The inner MSIV's are actuated using nitrogen from the Primary Inerting System which is backed-up with banks of bottle nitrogen.

Procedure No. 35.116.01, Revision 3, May 6, 1983 has been changed to require specific torque requirements with caution notes when working on the valve stems of the MSIV's.

(Closed) Unresolved Item 83-21-01 - Pertaining to Instrumentation Mounting. During component mounting reviews conducted in response to NRC Item No. 82-30-03, the licensee identified a number of instruments that were not properly fastened. Further review determined that these instruments had been properly mounted initially by construction, but that during reinstallation after removal for calibration by Startup, some instruments were not properly attached. The licensee began a review of this area and determined that procedural guidance for reinstallation was insufficient. On July 18, 1983, the licensee approved, Revision 2 to SP 41.012.01, "Instrument Isolation and/or Removal for Servicing" to address these procedural weaknesses. The licensee subsequently embarked on a program to inspect and correct instrument mountings. Initial results of this program show that while some instruments may be lacking locking devises, the majority are mounted as good or better than that required by specifications.

The licensee has completed a 100% inspection of safety-related instrumentation mounting and verified the hardware and the torque values of the installation.

Procedure SP No. 41.012.01, has identified the criteria that was used by the organization in performing the re-inspection of the installed equipment. In addition to revising the above procedure, the licensee has revised the Instrument Malfunction and Calibration History Cards to include hardware, torque values, reference procedures, and type of qualified tools required for this equipment.

(Closed) 82-00-08 - Use of Teflon Materials For Electrical Connectors and Threaded Fittings for Use in Safety-Related Systems. The licensee performed a walkdown inspection of their safety systems using Procedure No. PES-201. The results of this walkdown inspection is documented on E&DCR F-42706A, F-42945, F-42033A, F-42033B, F-45919, F-45786, F-42033E and F-42033D. The licensee's documentation of August 4, 1982, September 20, 1982 and December 1 and 3, 1982 states the problem and corrective actions taken by the licensee.

The licensee has revised various procedures with a statement that Teflon is to be removed from and not to be use in safety-related systems.

(Closed) Unresolved Item 81-17-01 - Pertaining to separation requirements for different color divisions with internal panel wiring modification of vendor supplied panels.

During the inspection of 1H11*620, the NRC inspector noted that several wires associated with Division I were bundled with wires from Division II internal to the panel. Subsequent investigations by the inspector determined that separation requirement for wiring changes associated with General Electric FDDR/FDI's are defined in E&DCR No. F-28317. This E&DCR states that ".....Internal wiring separation shall be as specified by G.E. as identified on applicable drawings." The inspector's findings indicated that there was some confusion as to the separation requirements for FDDR/FDI changes to vendor equipment.

General Electric was directed (GEC-411) to evaluate the apparent discrepancy between the wiring revisions, performed under this FDDR and separation requirements between wiring of redundant divisions. General Electric's review of this finding determined that this wiring performed under FDDR KS-01-535 for HPCI panel H11-P620 and similar wiring performed under FDDR KS-01-537 for RCIC panel H11-P621 were not in accordance with General Electric's separation specification 22A5902. As originally built, these two panel contained equipment in only one ECCS division each and, therefore, did not have references on their connection diagrams requiring separation be maintained between redundant divisional wiring. Panel wiring changes by FDI or FDDR must be done in accordance with the requirements called for on the panel connection diagrams. Since the changes made by FDDR's K-01-535 and 537 introduced a second division to each panel, these FDDR's should have added a note to the wiring diagrams requiring separation. This oversight was corrected by issuance of FDDR's KS-01-2084 and 2086.

In order to insure that no other FDDRs/FDIs were issued which mistakenly permitted no separation be maintained between wires of different division in a common NSSS panel, G.E. conducted a complete review (RLL-T-104) of all FDDR's issued to date and has determined that only one other FDDR/FDI contained a similar error. In this case, corrective actions were issued to the field via FDDR KS-01-2089.

All field work required by the above documents was completed by April 27, 1983.

To further insure that the electrical separation within the Nuclear Steam Supply System (NSSS) panels installed at Shoreham are consistent with Shoreham's licensing commitments and in particular with IEEE-279-1971 an evaluation was performed by G.E. of suspected deviations from electrical separation requirement. This evaluation consisted of a detailed inspection of all Shoreham's NSSS panels by G.E. systems engineering personnel. This report ("NSSS Panel Design Evaluation for Electrical Separation 1E to 1E Interface") concludes that the divisional separation of electrical wiring inside the NSSS panels is entirely adequate. This report does make one recommendation to further enhance the reliability of the Standby Liquid Control System (SLCS). This recommendation to install redundant circuit protection in the wiring for both SLCS circuits will be incorporated by E&DCR No. P-4359.

(Closed) CDR 82-00-14 - Containment Pressure Water Leg Seal. Pertaining to drywell pressure line slopes for those instruments which sense the primary containment atmospheric pressure.

The licensee issued the following documentation to correct the instrument line design problem. The modification work with design, installation, test and quality control procedures and records are in System Modification (SM83-022) Data Package.

-- E&DCR-P-4305, LDR-1010, P-4305A, P-4035C.

-- Procedure SP No. 12.023.02, November 18, 1982, Requirements for Cleaning and Maintenance of Cleanliness.

The following drawings were revised to reflect the above changes and additions.

-- S&W Drawing 11600.02-FM-20A, B, FK-1D, 1E, 1F, 1T, FP-21D and FV-1F.

(Closed) Bulletin 78-04 and Bulletin 79-28 - Bulletin 78-04 pertained to qualification failures of NAMCO limit switches used as stem mounted devices inside reactor containment, while Bulletin 79-28 pertained to possible malfunction of NAMCO Model EA180 limit switches at elevated temperatures.

To address those two NRC Bulletins, the licensee did a drawing review of their safety-related systems to locate their limit switches. A walkdown inspection of the identified systems to verify the switch type, part and serial number and location was performed and documented in a Environmental Qualification Summary Report.

Items that were identified as being a potential problem were replaced with qualified equipment.

(Closed) Bulletin 77-07 - Containment Electrical Penetration Assemblies pertaining to electrical shorts between conductors due to a moisture accumulation.

Failures of the General Electric (GE) Series 100 Low Voltage Electrical Penetrations was due to internal connection which caused shorting of electrical voltages between insulated connections of the penetration. The licensee's analysis of their system indicated that none of the G.E. Series 100 LVEP are in their systems.

(Closed) Unresolved Item 81-12-04 - Core Spray installed system differs from description contained in the Final Safety Analysis Report (FSAR). This item described in IE Inspection Report 50-322/81-12-04 was closed in IE Inspection Report 50-322/83-08 with the exception of a method to determine that indication of protective actions has occurred. Modification No. 84-14 was issued which provided annunciations in the control room to comply with the criteria requirements of IEEE-279.

The inspector verified that the modification was completed and a review of the I&C test data indicated that the testing was in accordance with the procedure SP No. 87.001.06, Revision 0, March 10, 1983, titled Checkout of Low Voltage Control Circuits.

(Closed) Unresolved Item 83-10-01 - Pertaining to procedure changes to the 125 volt station battery system. Changes were made to the listed site battery procedures to comply with items identified in IE Inspection Report 50-322/83-10.

-- SP No. 34.315.01, Revision 4, January 3, 1984, titled 125 Volt Station Battery Quarterly Surveillance,

-- SP No. 34.315.02, Revision 3, April 2, 1984, titled 125 Volt Station Battery Capacity Test,

-- SP No. 34.315.03, Revision 8, February 8, 1984, titled 125 Volt Station Battery Weekly Surveillance,

-- SP No. 34.315.04, Revision 2, March 30, 1984, titled 125 Volt Station Battery 18 Month Surveillance,

-- SP No. 34.315.05, Revision 4, April 16, 1984, titled 125 Volt Station Battery Changer Load Tests; and,

-- SP No. 23.410.01, Revision 6, November 1, 1983, titled HVAC Battery Rooms.

(Closed) NITS 84-08-02 - Pertaining to the operability of the onsite meteorological instrumentation station. The building of the new diesel generator building interfered with the function of the existing onsite meteorological system.

The licensee relocated the Meteorological Monitoring Tower per E&DCR L-354. The move was completed per station modification (SM84-005) and retested per MWR 84-1325 utilizing procedures SP No. 87.001.06, No. 44.659.03 and No. 44.659.01.

The inspector reviewed the test data sheets associated with the above SP Numbers and verified that the attributes of the test data sheets had been verified and signed. Licensee document change requests (DCR's) had been submitted to revise the applicable documents to reflect the present design configuration.

(Closed) Construction Deficiency Report 82-00-13 - Pertaining to the qualification failure of the Brand Rex Triaxial cable used with the Kaman High Range Radiation Monitors. The license has forwarded to the NRC a data package with a Justification for Continued Operation (JCO) with the data submitted. This subject will be addressed by the NRC in a Safety Evaluation Report (SER).

(Closed) Unresolved Item 82-04-05 - During a previous inspection, several RHR system labeling deficiencies were identified. The licensee took appropriate actions on this item and presented them to the inspector. The inspector reviewed records and verified these through a control room tour. The inspector noted the following:

-- Alarm Response Procedure ARP 1122 has been revised. The alarm response procedure (ARP 1122, Revision 2) shows that the alarm pressure setpoints are 450 psig (from PS-136A) and 100 psig (from PS-137). The alarm setpoint of 100 psig is for the shutdown cooling mode RHR pump suction pressure high alarm. Depending on the reactor coolant system pressure, the reactor operator is able to identify the cause of this alarm.

-- The mimic for E11*MOV-50 and B-loop drywell spray has been corrected. The subject mimics in control room and remote shutdown panel are now consistent with the flow diagram (M-10112-18).

-- Based on a letter (SNRC-824), the licensee has elected to delete the Steam Condensing Mode (SCM) of RHR system operation. Valves E11*PCV-007A and B are therefore not mimicked on the panel.

-- The label on the Shutdown Cooling Isolation Reset Button for E11*MOV-037 was relabeled and is now clear.

-- The controller for E11*PCV-003B was relabeled to reflect its intended function.

-- The licensee stated that the control room labels are subject to a continuous review by the operating staff. Any labels found to be confusing will be replaced.

Based on the above information, this item is closed.

(Closed) Unresolved Item 83-02-21 - Specific administrative controls for locking selected safety-related valves.

The inspector reviewed procedure SP 21.007.01, Control of Operations Section Locks and Keys, Revision 5, and noted the following:

-- The procedure has been modified to include all types of sealing mechanisms, not just padlocks.

-- A color coding system has been included in the locking mechanisms.

-- The procedure has been revised to indicate which keys will not be kept on the equipment operator's key ring.

Further, through the control room tour, the inspector verified that the Reactor Mode Switch Key has been designated as Key #23 and Standby Liquid Control Initiation (SLCI) Key as Key #1. The SLCI Key was kept in the control room key locker per the procedure.

Based on the above information, this item is closed.

(Closed) Inspector Follow Item 81-04-05 - The information to justify the Normal Station Service Transformer (NSST) and Reserve Station Service Transformer (RSST) tap settings was not available during previous inspection.

The inspector discussed the subject with a licensee representative. The inspector was told that NSST and RSST tap settings were derived based on AC Station Service Study (LIL 17278), dated January 30, 1981. This analytical model was verified by actual measurement as documented in AC Electric System Verification Test Studies Final Report LIL-23923 dated August 8, 1983. The comparisons of the voltages tested and calculated are within the acceptance criteria.

This item is closed.

(Closed) Bulletin 79-18 - "Audibility Problems Encountered on Evacuation of Personnel From High Noise Areas". In response to this IE Bulletin, the licensee has taken the following actions:

-- Gaitronics system in Diesel Fire Pump (FP) Room, Diesel Generator (DG) Rooms and elevation 8' in the Reactor Building has been modified to include the installation of a new 50 KHZ transmitter and tone decoder relay cards.

-- Strobe lights controlled by the tone decoder relay cards were added in the DG Rooms and FP Room.

The inspector reviewed E&DCR No. F-45003 modification package and the associated test results (PT 319.001-1, R51-003, Gaitronics Communications) and noted that the above modifications have been implemented and tested. The licensee also plans to install these modifications in the new emergency diesel generator (EDG) building. The inspector reviewed the purchase order #310572 and EDG drawing (FE-8CW-0-EDGGA-2) and verified these activities. Further plant survey will be conducted according to startup test procedure STP-823, Audibility of the Evacuation Alarm System. Any required modification will be implemented after completion of that survey.

This item is closed.

(Closed) Unresolved Item 82-00-07 - Pertaining to the turbine building service water pumps corrosion problem. The licensee reported verbally on June 9, 1982 and subsequently submitted a report (SNRC-732), dated July 16, 1982 to NRC describing a potential deficiency concerning an apparent accelerated corrosion on the four (4) Reactor Building Service Water Pumps (RBSWP), in accordance with 10 CFR 50.55(e).

The licensee has identified the cause of the corrosion problem and concluded that the galvanic or stray electrical currents caused an accelerated cathodic/anodic reaction to occur. The licensee replaced the major corroded components with those manufactured by the original manufacturer, Bingham Williamette, and implemented modifications as stated in their report (SNRC-732) to preclude recurrence of the corrosion problems. The inspector audited the following documents to verify the implemented modifications on RBSWPs are in compliance with LILCO's approved procedures and found them satisfactorily resolved:

a. SP 35.122.01, Revision 2 - Service Water Pump Rotating Assembly Removal and Installation.

b. Stone & Webster Engineering Corporation (SWEC) E&DCRs:

   (1) E&DCR-F-41700A

   (2) E&DCR-F-41920B

c. Repair Reworks Requests (RRR):

(1) RRR-P41-139, RBSW Pump "A" for corrosion repair

(2) RRR-P41-140, RBSW Pump "B" for corrosion repair

(3) RRR-P41-141, 500, and 501, RBSW Pump "C" for corrosion repair

(4) RRR-P41-299, RBSW Pump "D" for corrosion repair

(5) RRR-P41-309, RBSW Pumps "A", "B", "C" and "D" for installation of permanent brush grounds

d. PT.122.001-2, Preop Test Reactor Building Service Water System.

e. Checkout and Initial Operations (C&IOs) Test Procedures:

(1) C&IO P41-94, Initial test prior to corrosion repair for Pump "A"

(2) C&IO P41-94F, Retest after implementation of modifications for Pump "A"

(3) C&IO P41-95, Initial test prior to corrosion repair for Pump "B"

(4) C&IO P41-95G, Retest after implementation of modifications for Pump "B"

(5) C&IO P41-52, Initial test prior to corrosion repair for Pump "C"

(6) C&IO P41-52E, Retest after implementation of partial modifications for Pump "C"

(7) C&IO P41-52F, Retest after implementation of all modifications for Pump "C"

(8) C&IO P41-53, Initial test prior to corrosion repair for Pump "D"

(9) C&IO P41-53E, Retest after implementation of all modifications for Pump "D"

f. SP 24.122.01, Service Water Pump Flow Rate Test and Valve Operability Test.

The licensee's station procedure SP No. 35.122.01, Revision 2, specifically states that the following disassembly/reassembly of the RWSW Pump(s) for routine maintenance, a complete visual inspection of the internals be performed. Further, a test shall be scheduled to compare the pump performance characteristics versus ASME Section XI reference values. This will be performed in accordance with their procedure SP 24.122.01.

Based on the satisfactory analysis and review performed for the above mentioned documents, it was concluded that the Unresolved Item No. 82-00-07 was closed.

(Closed) Bulletin 79-15 - Pertaining to deep draft pump deficiencies. The inspector audited the licensee's responses against the actions to be taken per BU-79-15 items and found them adequately addressed based on current Shoreham plant status.

The licensee provided the adequate responses for the BU-79-15 items as follows:

a. BU-79-15 Items 1 thru 6 except Item 5 were addressed in their letters SNRC-428, dated September 11, 1979, SNRC-436, dated October 9, 1979, SNRC-626, dated October 13, 1981, and SNRC-950, dated August 9, 1983.

b. BU-79-15, Item 5, pertaining to the major repair efforts and the operational problems which were the result of the galvanic or stray electrical currents caused by an accelerated cathodic/anodic reaction. This item was addressed under the previously Unresolved Item 82-00-07, in this report and was subsequently considered closed based on the inspector audit of the related documents involved.

The inspector also audited the following documents pertaining to BU-79-15 Item 1 thru 6 which were to be made available for the inspection at the plant site and found them adequately addressed:

a. Bingham/P41-3, Bingham Williamette Company Pump Installation, Operation and Maintenance Procedures.

b. SP 12-013.1, R.16, Maintenance Work Requests.

c. SH1-057, R.2 (SWEC), Service Water Pumps, ASME Class III, Division 2, Class 3.

d. SP35.122.01, R.2, Service Water Pump Rotating Assembly Removal and Installation.

e. SP 12.015.01, R.5, Preventive Maintenance Program

f PT.122.001-2, Preop Test Reactor Building Service Water System.

g. C&IO P41-94, 94F, 95, 95G, 52, 52E, 52F, 53 and 53F, Checkout and Initial Operations (C&IOs) Test Procedures.

h. SM 84-033, Station Modifications Package.

It was concluded, based on the above document audit performed at the plant site, that the licensee was in conformance with the BU-79-15 item requirements corresponding to the current plant status.

BU-79-15 was closed.

(Closed) Violation 83-26-01 - Pertaining to the final quality control bolt torquing inspections of hanger 1P41-PSR-5332 inconsistency with the hanger as-built condition. The inspection record indicated that the bolts and nuts were torqued whereas the actual installation utilized studs and nuts.

The inspector audited the following documents concerning the involved hangers:

a. Stone and Webster Engineering Corporation (SWEC) E&DCRs:

   (1) E&DCR P-3672V, dated April 30, 1982

   (2) E&DCR F46102, dated August 16, 1983.

   (3) E&DCR P-3672A, dated November 19, 1983.

b. LILCO Letter No. SNRC-969 with Attachments, dated September 30, 1983.

c. LILCO LDR No. 1559, dated August 16, 1983.

d. LILCO Maintenance Work Request 83-4619, dated August 16, 1983.

e. LILCO Interoffice Correspondence from M. Corbin of QCO to Mr. G. Nicholas of FQA, reply dated April 27, 1983.

f. SWEC Quality Control Inspection Report, dated August 17, 1983.

The inspector derived the following from the above documents:

a. The studs installed were in conformance with the approved installation requirements. The stud material A193GR.B7 was an approved stud material and was compatible with the AWCO nuts. The torque verification, required by LDR No. 1559, was within the specified limits for this hanger installation.

b. The verification program audit and the additional 23 similar hangers quality control inspections audit indicated that the LILCO hanger installations were in accordance with the design documents and the involved hanger installation was an isolated occurrence.

The licensee will addend their response contained in SNRC-969, dated September 30, 1983 to properly reflect the installed stud material as A193GR.B7 versus A193GR.97 which was believed to be a typographical error.

It was concluded, based on above analysis and review performed for the involved hanger, that the violation 83-26-01 was closed.

(Closed) Unresolved Item 82-02-02 - Pertaining to leakage return pump not listed in the licensee's first submittal. The pump and valve list associated with the program for Pump and Valve Inservice Testing did not include the leakage return pump (suppression pool). The licensee has added the above pump to the Pump and Valve Inservice Testing Program Plan.

The inspector reviewed the Pump and Valve Inservice Testing Program Plan Document #80A2903, Revision 3 to determine if the pump had been included. The pump was included and the item therefore is closed.

(Closed) Violation 82-04-06 - Pertaining to the licensee's design for manual initiation of the LPCI mode of RHR and the RBCLCW system which did not comply to Reg. Guide 1.62. The licensee's design was referred to NRR for further review. The licensee made additional submittals and presentations to NRR. Inspection Report 83-10 indicates that NRR required control room relabeling for LPCI to more clearly explain the current design and operating procedures and training which provide specific guidance in this area. (Reference Unresolved Item 82-04-05).

The inspector reviewed Maintenance Work Request No. 83-5653 and E&DCR L-0125 which provide details of the relabeling. The inspector also reviewed Operating Procedure No. 23.203.01 which provides guidance on both manual and automatic system initiation. The inspector also discussed operator training with LILCO personnel. Revisions to procedures are reviewed for significance by the SNPS training group. Based upon the significance of the revisions, retraining of personnel may be required. This item is closed.

(Closed) Circular 78-19 - Pertaining to manual override (bypass) of safety systems actuation signals.

The above circular addresses the manual override of safety system actuation signals. This item was also addressed in Bulletin 79-08 which was closed in Inspection Report 84-10. This item is therefore closed.

(Closed) Unresolved Item 83-08-05 - Pertaining to the addressing of the surveillance and operability of the core spray sparger pipe break instrumentation, ECCS keep full instrumentation, and suppression pool water level instrumentation.

The above instrumentation which had been included in the Standard Technical Specifications was deleted from the SNPS Tech. Specs. due to an NRR resolution. The resident inspector, however, still questioned how the surveillance and operability would be addressed. The licensee decided to include the core spray sparger pipe break instrumentation in the SNPS Tech. Specs. even though not required by NRR. The ECCS keep full instrumentation and suppression pool water level instrumentation have since been deleted from the Standard Tech. Specs. The inspector reviewed a draft copy of the SNPS Tech. Specs. (Section 4.5.1). This item is now closed.

(Closed) Circular 80-04 - Pertaining to events at nuclear plants wherein safety-related valves and pumps were declared inoperable due to loose or missing nuts.

The licensee has done a review of threaded locking devices on safety-related equipment. All equipment relevant to the circular except for four Gould model 3735 pumps and motor operated valves were found to be free of the potential problems described in the circular. The pumps have been backfitted with a locking device to prevent loosening of the impeller retaining cap screws. The potential problem of loose stem nuts on the motor operated valves has been addressed by plant staff procedure 35.052.01 for the proper staking of stem nuts in accordance with the manufacturer's recommendation.

The inspector reviewed QC inspection reports (memo dated December 6, 1982) which verified the installation of the locking device. The inspector also reviewed Procedure 35.052.01, Revision 1, dated May 13, 1983. Based upon this review, this item is closed.

(Closed) Circular 80-07 - Pertaining to problems with the HPCI turbine oil systems that have prevented the HPCI system from performing the intended function.

The licensee has developed the following per the recommended actions of Circular 80-07.

a. A preventive maintenance schedule worksheet to check the HPCI oil for contamination monthly after scheduled turbine operation.

b. A revised procedure (SP 35.202.01) to include seal leakage testing and overhaul of the stop valve.

c. A preventive maintenance schedule worksheet to replace the hydraulic cylinder seals every 5 years and to perform a hydraulic cylinder seal leakage test per G.E. Sil. No. 306, Revision 1 every year.

The inspector reviewed Document No. SP 35.202.01 Revision 3, dated December 15, 1983, and worksheets 1E41*120TU-002 and 1E41*32HOV-51-1001&2 for adherence to the circular recommendations. Based upon the review, this item is closed.

(Closed) Circular 79-05 - Pertaining to moisture leakage in stranded wire conductors. Circular 79-05 identifies possible moisture or steam leakage through the space between the cable conductors and cable sleeves for the following items when there is a differential pressure between the cable ends.

a Terminal block/junction box

b. Sensor transmitters

c. Motors

d. Electric motor operated valves

This is especially true during the LOCA condition when the reactor containment is under much higher pressure than the atmosphere.

Stone and Webster letter LIL-16295 dated July 9, 1980 explained the reasons why this problem would not occur in Shoreham due to the specific connection arrangement for those items listed above.

Based on this, NRC considers this item closed.

(Closed) Unresolved Item 81-02-03 - Pertaining to Shoreham FSAR paragraph 6.2.4.3.5 states that the instrument lines penetrating the containment comply with Reg. Guide 1.11. However, it was found that the instrument lines for the Primary Containment Cooling System differential pressure transmitters did not have excess flow check valves where they penetrate the primary containment.

In Shorehams SSER4 dated September 1983, NRC accepted the current design during the interim period until the first refuel outage.

Stone and Webster letter LIL-23462 dated June 17, 1983 outlined a modification schedule to correct these deficiencies. In addition, Shoreham's "Project Schedule Control Program" keeps track on these items.

Based on the above, this item is considered closed.

(Closed) Unresolved Item 82-05-01 - Pertaining to safety-related TIP CIV's which are not powered by safety-related power supplies.

Each Traversing Incore Probe (TIP) guide tube has 2 containment isolation valves. FSAR paragraph 7.3.1.2.2 states that these containment isolation valves are powered by safety-related power supplies. However, it is found that these valves are wired to non-safety related AC and DC power supplies. There are 4 such penetrations containing a total of 8 valves. These valves are normally closed and fail close.

This is a generic issue (multi-plant) currently under review by NRC. This item is considered closed at this time.

(Closed) Bulletin 83-03 - Pertaining to check valve failures in the Raw Water Cooling Systems of the Diesel Generators at Dresden and Quad Cities requires that LILCO take specific actions to assure implementation of a program adequate for monitoring operation and detecting check valve failure.

Specific actions required are the following:

a. Review the Valve-In-Service Test Program and modify if necessary to include check-valves in the diesel generators cooling water flow paths.

b. Verify that the test procedures will confirm proper operation and the integrity of check valve internals.

c. Physically perform initial check valve integrity verifications using the test procedures of 1 and 2.

d. Submit reports to NRC providing the information developed in items 1, 2 and 3.

LILCO letter SNRC-904 (June 30, 1983) identified the check valves in the diesel generators cooling water system and also verified that Station Test Procedure SP 24.122.01 will provide the methodology to confirm proper check valve operation and integrity.

LILCO letter SNRC-958 (August 31, 1983) reported satisfactory completion of the check valve integrity verification tests under Test Procedure SP 24.122.01. The NRC inspector reviewed the completed test procedure including sign off sheets and found no evidence of failure or malfunction.

Based upon the above, this item is considered closed.

(Closed) Unresolved Items 83-02-15, 16, 17 and 18 - Pertaining to Instrument and Control Departments surveillance procedures and their technical adequacy to verify the operability of safety-related equipment.

The licensee matched the existing surveillance procedures against the I&C Technical Specifications implementing procedures and identified that approximately 50 new procedures were required. In order to verify the adequacy of procedures, the licensee developed the following major attributes verification checklist.

a. Does the procedure adequately perform the testing required by the Technical Specifications (T.S.)?

b. Are the setpoints consistent with T.S.?

c. Are T.S. allowable values and limiting conditions given?

d. Does the procedure test the entire logic circuit; all logic circuits?

e. Does the procedure match the latest revisions of the instrumentation diagrams and specifications? Is it technically correct and complete?

f. Does the procedure include an independent verification checklist? Does it include final position of valves, jumpers removed, lifted leads re-installed, etc.? Does it require verification and sign off by someone who did not perform/sign off steps in the body of the procedure?

g. Does it include an instrument setpoint trending analysis data sheet?

h. Has the procedure been checked against other related procedures to ensure that there is no missing interface logic testing, that logic testing is not unnecessarily redundant?

i. Has the procedure been properly reviewed and signed off including sign off by OQA and the Review Operations Committee (ROC)?

j. Has the procedure been field verified (performed) to assure that T.S. testing is current and that the procedure is valid?

The current status of implementation of the licensee's I&C Surveillance Procedures Program is as follows:

Procedure Classification*	OC5	OC2A	OC2B	OC1	Total
Total Procedures	49	10	72	16	147
Written, OGA Review Comp.	49	6	62	10	127
ROC Approved	49	6	61	10	126
Field Verified	47**	3	31	5	86

* OC5 - Required for fuel load
OC2A - Required for initial criticality
OC2B - Required for heatup to rated temperature and pressure
OC1 - Required prior to turbine roll/generator synchronization

** Two remaining procedures are Source Range Monitoring Procedures which require sources installed to perform.

The licensee has two programs to ensure that all procedures are kept current, SP 12.010.02 and SP 11.004.01.

SP 12.010.02 Station Modification Procedure requires that the cognizant site engineer responsible for any modification to review all plant documents including Surveillance Procedures and initiate changes if required. The responsible section then performs a technical review of the proposed change, the change is reviewed and approved by ROC, and then the procedure is performed/modified as a part of the station modification closeout.

SP 11.004.01 Station Reference Tracking Program provides redundant backup to ensure proper and timely update of the I&C surveillance procedures.

The NRC concurs with the licensees program relative to the I&C Surveillance Procedures Program and concurs that outstanding items 83-02-15, 16, 17 and 18 should be closed accordingly.

(Closed) Unresolved Item 82-04-15 - Pertaining to two weaknesses in the licensees proposed technical specification for snubbers. The first weakness cited was the apparent omission of some snubbers from the specification. The second weakness was that some Plant Unique Features were described in the FSAR but were not included in the proposed technical specification.

The licensee has revised the technical specification to include all snubbers cited and others which had not been tested which are subject to the technical specification surveillance requirements. A copy was reviewed and no discrepancies were noted.

The licensee has also revised the technical specification to include all applicable Plant Unique Features. A parallel review was conducted by comparing the Pre-Operational Tests, the FSAR, and the Shoreham Technical Specifications.

The licensee has also established an on-going continuous review of Plant Unique Features for new items to include in the Technical Specifications.

The NRC concurs with the licensees actions taken and program established to overcome the two weaknesses cited in the technical specification and concurs that outstanding item 82-04-15 should be closed accordingly.

(Closed) Construction Deficiency Item 82-00-03 - Pertaining to Agastat 7000 series time delay relays loss of air from the volume chamber due to breakdown of the pneumatic timing diaphragm. The breakdown causes a reduction in the preset time delay. This relay deficiency was reported to the licensee by the vendor, Amerace Corporation and was also reported in IE Information Notice 82-04. The defective relays were reported to have been manufactured by Agastat between the 24th week of 1981 and the third week of 1982.

The licensee made a survey to determine all of the Agastat 7000 series relays purchased from Amerace and others either as relays or as a part of installed systems. A total of twelve suspect relays were found and were identified by serial number, location, and manufacturing era.

All of the suspect relays were replaced under Test Packages E32-53-2B and 4B, Repair Rework Request T46-201, and Maintenance Work Requests 83-2758, 2759 and 2760. Replacement relays were either new relays from spares or vendor repaired/reworked relays.

Of the twelve suspect relays removed, nine were returned to the vendor for rework, one was reworked by the vendor onsite, and two were lost.

The licensee tracks safety-related components including these relays on a computer system which provides indepth information for each relay including its serial number, model number, manufacturer, location, status, when installed and on what document. The serial numbers for the suspect relays have been removed from the system. Reworked relays are assigned new serial numbers. Therefore, the suspect relays and their serial numbers have been eliminated from the system.

The NRC concurs with licensees actions taken to replace the defective Agastat 7000 series relays and concurs that outstanding item 82-00-03 should be closed accordingly.

<u>(Closed) Bulletin 80-24</u> - Pertaining to prevention of damage due to water leakage inside the containment as required for FSAR conformance.

The FSAR did not include the level instrumentation for the Drywell Sump Tank Recorder LR505X but did include a Drywell and Floor Drain Flow Recorder FR506 which had been deleted. Alarm Response Procedure (ARP) had not been written for the Reactor Building Flood Level High Alarms and the Reactor Building Suppression Pool Pump Back System. Surveillance procedures did not include FR506.

The licensee has taken actions as follows:

a. The Drywell Equipment and Floor Drain Flow Recorder, FR506 in the control room was changed to Level Recorder, LR505X and the FSAR and Surveillance Procedure (SP) 44.403.01 and .02 were amended accordingly (to delete FR506 and add LR505X).

b. The Alarm Response Procedures (ARP) were written deleting the requirements for ARP for FR506 and to add the following procedures:

   ARP 5670 - Reactor Building (RB) Flood Level High
   ARP 5671 - Reactor Building (RB) Flood Level High
   ARP 5672 - Suppression Pool Pump RB Floor Drain Tank Level High
   ARP 5673 - Suppression Pool Pump Back System Trouble

Based upon the above corrective actions, this item is considered closed.

<u>(Closed) Construction Deficiency Report 81-00-07</u> - Effect of CO-2 leakage on Diesel Generators. The licensee reported the fact that the CO-2 storage tank was not seismically designed and could possible leak, adversely affecting the Emergency Diesel Generators (DGs) due to its location near the DGs air intakes. The fire protection systems are generally not required to be seismically designed or tornado-missile protected as they are "important to safety" but not "safety-related" systems. The licensee performed an analysis and concluded that in an earthquake the CO-2 would drop about one foot but not rupture. This would result in only minor CO-2 leakage, which would have no adverse affect on the safety of operation. These conclusions were documented in letter SNRC-635. The NRC accepted

these results but requested that the licensee analyze the case of a tornado which could possible cause a loss of both offsite power supplies and via a tornado missile might rupture the CO-2 tank. The leaking CO-2 could possible then affect the DGs, the only other source of AC power. The licensee had a review of this event performed by Science Applications, Inc., titled "Probabilistic Evaluation of the Effect of Tornadoes on the Frequency of Station Blackout", dated January, 1983. The conclusion of this study was that the design was acceptable as is. The NRC's Office of Nuclear Reactor Regulation reviewed this study and generally agreed with its conclusion. The NRC did however question the portion of the report on page 3-6 which dealt with the situation where offsite power had been lost, the CO-2 tank ruptured, and excess CO-2 was inhibiting DG starting. Specifically, item (c)(1) did not appear to take into account a lock out when air start pressure decreases to 150 psi; item (c)(2) appeared incorrect; and item (c)(4) discussed a lack of procedures to help the operators recover from this situation. The NRC stated that the errors in the study should be corrected and plant procedures established to address circumstances.

The inspector reviewed and verified the following:

a. Page 3-6, Revision 1, dated August 1983 of the Science Applications (SAI) Probabilistic Risk Assessment Report, dated January 1983 was replaced and the following items addressed:

   (c) Next, the low pressure injection systems depend directly on the diesel availability which in turn is determined by the following:

      (1) Three automatic diesel starts will occur within approximately 35 seconds, ensuring that, given the diesel intake is engulfed CO-2, the diesels will not start and the diesel air start accumulator will drop in pressure below the auto-start setpoint.

      (2) The diesels have remote manual starting capability; however, following the auto start attempts above, the operator must start from either the control room or locally during the station blackout.

      (3) Two of the remaining manual air starts are required to purge the CO-2 from the diesel intake ducts. The vendor indicates that there may be only small degradations of diesel performance due to the cold CO-2.

      (4) Approximately 6 air starts remain for manual starting of the diesels. If the operator attempts these starts immediately with the intakes containing a high CO-2 concentration, (there is no procedure to give guidance on this) then the diesel cannot be started without recharging the accumulator.

The inspector reviewed and verified that an approved procedure exists covering the above concerns, SP 29.015.02 Revision 2, Approved October 31, 1983 titled, Loss of All AC Power Emergency Procedures. All NRC concerns have been addressed adequately. This item is closed.

(Closed) Inspector Followup Item 83-38-01 - Diesel Configuration Control Spurious Trips. The inspector verified that the following three actions were completed satisfactorily.

a. Revised the diesel generator startup Interim Operating Instructions to include the lubricating oil and jacket water temperature control valves in the valve lineups.

b. Reviewed with the test engineers the need for proper shift turnover and log keeping in light of the temperature control valve positioning problem.

c. Included the lube oil and jacket water temperature sensors in the diesel generator design/quality revalidation program review.

The following two items, committed to by the licensee were verified by the inspector to be complete. The licensee reviewed with plant staff the need to upgrade the surveillance procedures for diesel generator operation to include proper positioning of the lube oil and jacket water temperature control valves in the valve lineup sheets, and, the licensee reviewed the entire diesel generator Interim Operating Instructions to ensure it adequately addresses the diesel generator configuration. These are reflected in the instructions provided to station operating personnel for proper operation of the emergency diesel generators and their associated auxiliaries in SP 23.307.01 Revision 7, Approved February 1, 1983 titled Emergency Diesel Generators.

This item is closed.

(Closed) Inspector Followup Item 80-09-02 - Test procedures do not contain commitments of FSAR and SNRC-319 for vacuum breakers and drywell floor seal pressure test.

The inspector reviewed letter LIL-23752 Drywell Floor Bypass Low Pressure Test Report dated July 18, 1983, which documents the Stone and Webster analysis of test results in PT-654.010 Revision 2, Local Leak Rate Testing, Vacuum Breakers, regarding the drywell suppression pool vacuum breakers.

The one (1) PSID leak rate test has been determined to be acceptable, and the acceptance criteria of the FSAR Section 6.2.1.4.1, and letter SNRC-693 have been met. In addition, PT-654.010, PT-654.006 and applicable portions of the FSAR and technical specifications are now consistent with one another regarding acceptance criteria and tests of the drywell floor bypass capability.

This item is closed.

(Closed) Unresolved Item 82-15-11 - Discrepancies in the drywell pressure setpoints. This item noted discrepancies between the various required and actual setpoints for high drywell pressure. This item was expanded to include the generic question of technical specification trip setpoints.

The inspector reviewed letter SNRC-930 to H. R. Denton NRR, from J. L. Smith LILCO dated June 30, 1983 and titled, Technical Specifications Shoreham Nuclear Power Station; and Station Procedure SP 44.611.12 Revision 0, approved November 5, 1983 titled, ECCS Monthly Unit Calibration and Functional Test, and verified that the discrepancies have been resolved. The setpoints have been lowered to allow for drift. The new values are listed in SP 44.611.12. The generic question has been answered through SNRC-930. The licensee has committed that, prior to fuel load, all tech spec calibrations will be redone and the setpoints will be adjusted less than the tech spec limits to allow for drift.

This item is closed.

(Closed) Violation 83-05-11

a. Whether 24VDC power supply design was controlled in accordance with 10 CFR 50, Appendix B and whether these power supplies were assured and documented to conform to procurement requirements prior to onsite installation.

   By review of documentation, the inspector verified that the 24 VDC power supplies which were furnished by Bailey were tested by an independent testing laboratory under the audit and surveillance of the Bailey Meter Company QA personnel. In accordance with the procurement specification, the Stone and Webster Procurement Quality Assurance Organization verified that the tests were performed and that the required certifications were provided.

b. Whether the value of 24 VDC ±2 is valid, if so, where in the instrument loop?

   In accordance with the Bailey product specification sheets, the 24 VDC ±2 is valid and as read at the power input terminals located at the back of the instrument racks and remotely mounted manual/auto station.

c. Whether sufficient periodic surveillance of safety-related 24 VDC power supplies will be conducted to assure that they will perform acceptably in service throughout the ranges of variation specified for input frequency, input voltage, ambient temperature and humidity.

The inspector reviewed SPCN 83-518, Station Procedure Change Notice approved by ROC on October 13, 1983 and Station Procedure 46.007.02 Revision 0, 24 VDC Power Supply Functional Test approved November 4, 1983. The procedure was written to ensure that periodic surveillance will be performed on the safety-related 24 VDC power supplies. The procedure provides reasonable assurance that the safety-related 24 VDC power supplies will perform acceptably in service throughout the ranges of variation specified for input frequency, input voltage, ambient temperature and humidity.

d. Whether turned-over safety-related 24 VDC power supplies provided by the NSSS supplier meet procurement requirements and their design basis, met valid initial testing requirements, and will continue to perform acceptably in service, with the initial test sample being the core spray 24 VDC power supply.

The inspector reviewed documentation and verified the NSSS power supplies do meet procurement requirements in that each power supply and panel in which it is mounted has received GE's Product Quality Certificate. This documents that the items for which the PQC was issued, has satisfied all GE quality requirements including those related to design and procurement. LILCO reviewed the various C&I test requests for NSS 24 VDC power supplies to verify proper validations of initial performance capabilities over the expected range of operating conditions. Certain power supplies were tested over various input voltages during initial performance testing while the remainder, including the Core Spray System, verified the output voltage at rated load was maintained for a single input voltage. In all cases, subsequent component testing of instrumentation powered by these supplies indicated acceptable power supply performance. System preoperational testing, likewise, demonstrated that the instrumentation loops were maintained operable during all modes of system operation.

This item is closed.

<u>(Closed) Violation 83-05-03</u>

a. Output voltage testing for the nominal input voltage case was performed to a wider acceptance range than specified.

b. Rated full load output voltage outside the wider acceptance range, were approved without appropriate justification.

c. The output voltage acceptance criteria did not account for the range of input and ambient conditions throughout, to which the system must perform.

d. As a result, the four Bailey 24 VDC, 20 amp power supplies were retested on April 28, 1983 and documented in E&DCR F-36983D. The inspector verified that the power supply output voltages met the specification requirements.

e. The voltage tests which were conducted on the Bailey 24 VDC, 20 amp power supplies and documented on E&DCR F-36983D were verified to demonstrate that the output voltages of the power supplies, under conditions of maximum and minimum input voltage and output load, are within the stated design tolerance.

f. The four Bailey 24 VDC, 20 amp power supplies are installed in the Relay Room. The atmosphere of this area is controlled by a redundant QA Category 1 ventilation system which will regulate and maintain stable ambient temperature and humidity conditions under which these power supplies will operate. Therefore, since the atmospheric operating conditions are essentially ambient, the acceptance criteria was appropriate.

This item is closed.

<u>(Closed) Unresolved Item 82-02-06</u> - Preoperational test items on the loose parts monitoring system such as sensor calibration with no flow in the feed water lines and no calibration documentation for impact device.

The inspector verified the following actions taken by the licensee.

a. PT 622.001 required sufficient background noise only to demonstrate the dissemination capability of the LPM system, and in addition, the output signals from system sensors were determined for actual impact tests. STP 814 will be performed to determine the capability of the LPM system under actual operating conditions.

b. The inspector verified the certification of the calibration of the impact device by review of the calibration certificate documentation.

This item is closed.

<u>(Closed) Unresolved Item 83-10-03</u> - Temporary tubing and buckets were used to collect fuel oil leakage from the six fuel oil transfer pumps.

The inspector examined the permanent collection system installed on the six fuel oil transfer pumps in the three fuel oil pump transfer rooms. The collection system is permanent, adequate and acceptable.

This item is closed.

<u>(Closed) Unresolved Item 83-05-05</u> - Verify the status of the following:

QAP-S 5.1 and 5.2 establish standard formats for the QA procedures and the QA manual.

-- QAP 5.1, Revision 7, May 7, 1983, includes the standard format instruction. Its implementation was verified by reviewing the format of QAPs 3.1, 12.1, 15.1, 17.1 and 20.1 (5 out of 20 QAPs).

-- QAP 5.2 Revision 1, May 5, 1983, includes the standard format instruction. Its implementation was verified by reviewing the format of QAM Sections 4, 10, 13, 15 and 16 (5 out of 8 QAMs).

QAP 2.7 should establish numbering uniformity and consistency between QAP and QAP-s procedures.

-- Review of QAP Index of January 23, 1984 and QAP-s Index of January 27, 1984 indicated numbering uniformity and consistency between QAP and QAP-S procedures.

(Closed) Unresolved Item 83-05-06 - Verify the status of the following.

Inconsistencies in QAP 1.1 paragraph 4.2 regarding OQAE reporting to the plant manager, and paragraph 4.3.b regarding approval of the QA manual per Appendix D require correction.

-- QAP 1.1, Revision 5 of May 5, 1983, corrected paragraph 4.2 in that the OQAE reports functionally to the Plant Manager but maintains communications and coordination with the QA Manager.

-- Paragraph 4.3.b of QAP 1.1 was corrected requiring approval of the QA Manual be the responsibility of the Vice President Engineering.

QAP 2.2, paragraph 3.2, requires the addition of a step to address reports to the NRC.

-- QAP 2.2, Revision 1 of May 5, 1983, paragraph 3.2 added the step to address reports to the NRC.

QAP 4.1, Paragraph 4, shall address the "Technical evaluation" in review requirements of purchase recommendation package.

-- QAP 4.1, Revision 7 of May 5, 1983 added paragraph 4.7.e to include "Technical evaluation".

QAP 4.2, shall specify checklist items that are applicable for each procurement method.

-- QAP 4.2, Revision 1 of May 5, 1983, checklist items have been specified for each procurement method.

QAP 7.3 requires interface with later generation QAP's (e.g. QAP-7.2 and 7.5) and to update terminology and format to comply with the current program.

-- QAP 7.3, Revision 2 of December 13, 1982, has established interfaces with EQAP-7.2 and 7.5 and updated terminology and format.

In QAP 15.1, update the references in paragraphs 2.4 and 2.5 to list the specific procedures.

-- QAP 15.1 Revision 4 of May 5, 1983, paragraphs 2.4 and 2.5 list specific procedures QAP 15.2 and 15.3 respectively.

In QAP 15.3, update the references in paragraphs 2.3 and 2.6 to list the specific procedures.

-- QAP 15.3, Revision 2 of May 5, 1983, paragraphs 2.3 and 2.6 list specific procedures SP 12.009.01 and Project Procedure P-304 respectively.

In QAP 18.2, incorporate items from QAP 18.1.

-- Items such as appeal route, paragraph 4.2.3.2 and evaluation of elements, Exhibit 18.2.1 were incorporated.

QAP 17.1, Paragraph 3.3 should provide specific references to the procedure(s)/instructions that describe how QA working files are to be maintained. Also provide detailed and definitive instructions to assure quality and uniformity of the input of records to SR2.

-- QAP 17.1, Revision 6 of May 5, 1983, paragraph 3.3 does not provide specific references, LILCO policy is not to cite lower tier documents for the sake of brevity. However, the applicable QA instruction QAI 17.1, does include references. Paragraph 4.4.1 has been changed to provide instructions for preparation and transmittal of records to SR2.

QAP 18.1, Paragraph 3.1 Section 18 of the Quality Assurance (QA) Manual does not provide audit frequencies for required audits. Also, the QA Manual, Appendix E requires revision to reflect ANSI 18.7-1976.

-- Appendix E of the QA Manual, has been revised to reflect ANSI N18.7-1976 audit frequencies.

<u>(Closed) Unresolved Item 82-14-05</u> - Training audit references should include applicable regulations to verify compliance with regulatory requirements.

The inspector reviewed two completed Operational Quality Assurance (OQA) training audits, 83-08 and 82-10, to verify that applicable regulations were referenced to verify compliance with regulatory requirements.

(Closed) Unresolved Item 82-34-14 - Log forms in use are different from those specified in station procedures.

Station Procedure 12.006.01 has been revised to further define the controls used for controlling station forms. The inspector also randomly sampled various station forms in use to ensure that they matched those forms defined in the applicable procedure(s).

(Closed) Unresolved Item 83-05-07 - Verify the status of the following QAP-S procedure deficiencies (general):

Include the appropriate sections of documents (i.e., QA Manual, Startup Manual, etc.) when referenced.

-- A review of the QAP-S procedures' reference section indicated that whenever a particular document was referenced, the appropriate section(s) within that document were identified.

Address records generated in appropriate QAP-S procedure sections.

-- Records generated as a result of a particular activity are now listed under the record's paragraph for each appropriate QAP-S procedure.

Address the control of checklists where applicable.

-- The development of QAP-S 6.3 "Control of Generic Checklists and Surveillance Plans" now provides the needed control.

Documents (i.e., forms, reports, etc.) are not defined or reference made to a procedure providing such a definition.

-- Documents are now identified within appropriate QAP-S sections or reference is made to a particular source that provides a definition or example thereof.

Include source documents and update existing references for appropriate QAP-S procedures.

-- A review of various QAP-S procedures indicates that applicable codes, standards, procedures, instructions, etc. have been referenced when applicable and existing references have been updated as necessary.

(Closed) Unresolved Item 83-05-08 - Verify the status of the following QAP-S procedure deficiencies (specific):

Define the responsibilities of the Quality Assurance Engineer (QAE).

-- The responsibilities of the QAE are now defined in paragraph 5.5 of QAP-S 1.1.

Describe more clearly, the methodology of the same group by both the QA Engineer and QC Engineer.

-- This interchange of supervision no longer exists as shown in paragraph 5.7, QAP-S 1.1.

Invoke a time limit on the use of an interim procedure and include a provision for review and evaluation of an activity should the final approved and interim versions differ. Also addresses periodic reviews of procedures and instructions.

-- QAP-S 5.2 now addresses a time limit (90 days) for interim procedures and includes a provision for action to be taken if interim differs from final approved version. QAP-S 1.4 addresses the periodic review of procedures and instructions.

QAP-S 4.1 fails to discuss how attached checklist applies to off-the-shelf and quality procured items with respect to acceptance criteria.

-- QAP-S 4.1 now references SP 12.019.01, "Procurement of Parts, Materials, Components, and Services", which has been revised to reflect acceptance criteria for off-the-shelf and commercial quality items (see Item 83-05-10 below).

QAP-S 7.1 fails to address an evaluation of supplier procured items should a CASE survey/audit identify unacceptable conditions during a relevant activity time frame.

-- Measures have now been included in QAP-S 7.1, paragraph 5.2.3.2 which delineates those actions to be taken if it is found that an audit has identified unacceptable conditions relating to a suppliers activity. These measures include the issuance of a deficiency report for documentation purposes and the performance of an engineering evaluation.

Delete the word "equivalent" as used in QAP-S 9.1.

-- The word "equivalent" has been deleted.

Delete the word "may" in QAP-S 10.1, paragraph 4.1.1 to preclude the use of a non-valid or unapproved sample plan.

-- The word "may" has been deleted and QAP-S 10.1, paragraph 4.1.1 now states in part "OQA shall implement...".

Clarify or delete the word "may" in QAP-S 10.1, paragraph 5.3.3.

-- The word "may" has been deleted and QAP-S 10.1, paragraph 5.3.3 now states in part, "Nonconformance Report shall be issued...".

QAP-S 10.3, paragraph 5.3, 5.4 and 5.8 are not consistent, nor is inspection checklist traceability to a procedure described.

-- QAP-S 10.3, paragraph 5.3, 5.4 and 5.8 are now consistent with each other and paragraph 5.4 states that inspection checklists shall be traceable to the applicable procedure/MWR utilized.

QAP-S 10.5, paragraph 5.4.2 does not describe the traceability to an issued LDR or CAR initiated from a note on the surveillance plan.

-- QAP-S 10.5, paragraph 5.4.2 has been revised to provide the needed traceability. Also several completed surveillances were reviewed to ensure that issued LDR's or CAR's were traceable to its' respective surveillance, if applicable.

Resolve the inconsistency between QAP-S 11.1, paragraph 5.3.4 and QAP-S 9.2.

-- The inconsistency no longer exists in that QAP-S 11.1 now references Appendix 3.1 to QAP-S 11.1, whereas previously it referenced Appendix 3.1 of QAP-S 9.2 which had been deleted.

Insufficient guidance and inconsistencies between QAP-S 15.1 and QAP-15.1.

-- Through a review of QAP-S 15.1 and QAP-15.1 and discussions with the Quality Assurance Engineer, it was determined that sufficient guidance and consistency between the two procedures had been developed.

QAP-S 15.3, paragraph 4.3.E and 4.4.C are not consistent with each other.

-- QAP-S 15.3, paragraph 4.3.E has been deleted.

QAP-S 16.1, paragraph 5.2.5 does not address the documentation aspect for early closeout of CARs.

-- Paragraph 5.2.5 has been revised to provide the necessary traceability and documentation required for closeout of CARs.

QAP-S 16.2 is inadequate in its guidance on trend analysis. Place the word "shall" between the word "report" and "include" in paragraph 5.4.1.

-- Trending analysis, now addressed in QAP-S 2.4, requires that the annual trending report include not only an analysis of the results, but also an evaluation of the significance of these results. Also the word "shall" has been placed in paragraph 5.4.1.

Resolve the inconsistencies between ANSI N45.2.12 and QAP-S 18.1, paragraphs 5.3.1, 5.4.4 and 5.6.4.

-- The inspector verified that QAP-S 18.1 is consistent with ANSI N45.2.12 in that:

1. Audit checklists are to include a verification of followup items and recurring problem areas.

2. Audit findings are to be responded to within 30 days.

3. Escalated action criteria is provided through the issuance of a Corrective Action Report.

(Closed) Unresolved Item 83-02-02 - Degradation of BWR Scram Discharge Volume Capability Reporting Requirements. Procedure SP 12.009.003, Report of Abnormal Conditions (RAC), Revision 1, addresses the criteria and responsibilities for initiating immediate notification to the NRC of appropriate plant events. Line item 7 on Form SPF 12.009.03-5, 24 Hour Notification Evaluation Sheet, Revision 1 (the form is Appendix 12.5 of the foregoing procedure) specifically identifies the inoperability of Scram Discharge Volume Vent and Drain Valves as an item requiring NRC notification and also references IEB 80-14. Additionally, SP 12.009.001, Station Reporting Requirements, Revision 10, that addresses routine and non-routine reports, includes the subject valves as item 7 on page 24.

This item is closed.

(Closed) Unresolved Item 83-05-10 - Procurement of "Off the Shelf" items must be addressed. Procedure SP 12.019.01, Procurement of Parts, Materials, Components, and Services, Revision 15, was being finalized by the licensee for approval by their Onsite Review Committee (ORC) during this inspection. A review of the proposed revision identified a number of shortcomings which were discussed with licensee representatives. The licensee further modified the procedure and it was approved by the ORC prior to the conclusion of this inspection. The engineering review process for "Off the Shelf" procurement is now described in paragraphs 8.2.3 (Catalog Method), 8.2.4 (Commercial Quality Method) and 8.2.5 (Verification Method). No further inadequacies or weaknesses were identified in the procedure.

This item is closed.

(Closed) Noncompliance 83-02-12 - Failure to annotate drawings affected by modifications. Engineering and Design Coordination Reports (E&DCRs) F39112 and F39190 were incorporated into Revision G of Drawing 11600.02-1.61-207. The current method employed by the licensee is to annotate the individual sheet of an affected drawing. Revision F to E&DCR F39112 added the above drawing to the list of drawings affected by the E&DCR. A sample of drawings were reviewed to verify licensee corrective action described in their February 19 and March 5, 1983 responses to the NRC and as directed by the May 6, 1983, Region I letter to the licensee.

Based on the above and the results of additional reviews discussed in items 82-04-14 and 83-21-04 herein, this item is closed.

(Closed) Unresolved Item 83-21-04 - Annotation of drawings affected by Nonconformance and Disposition Change Records (N&Ds). Procedure NOSP 29.2, Satellite File Control, Revision 1, addresses the logging of N&Ds, updating of this list, and the timely annotating of affected drawings. Also, paragraph 6.2 of the procedure now requires that N&D files be kept in close proximity to the affected controlled documents.

Based on the above and the results of additional reviews discussed in items 82-04-14 and 83-02-12 herein, this item is closed.

(Closed) Unresolved Item 82-34-03 - Audits need to be conducted by the Quality Assurance Department (QAD), Operations Quality Assurance (OQA), and the Nuclear Review Board (NRB) of activities such as modification control, readiness for operation and training. The following audits were reviewed and they collectively addressed the areas of concern. It was also noted that these audits were comprehensive. Additionally, corrective action associated with identified deficiencies (including those items that must be completed prior to fuel load) were being followed up and tracked within the established corrective action system(s).

-- QAD Audit 83-1, LILCO Offsite Organizations (Part 1)

-- QAD Audit 83-2, Followup Audit of LILCO Offsite Organizations

-- QAD Audit 83-1, Interim Station Modification Program (Part 2)

-- OQA Audit 83-04, LILCO Plant Staff - Technical Support

-- OQA Audit 83-09, Technical Support

-- NRB Audit G-83-1 (Part 1), Readiness for Fuel Loading

-- NRB Audit G-83-1 (Part 2), Readiness for Fuel Loading

-- NRB Audit B-83-1, Personnel Qualifications and Training

Further, the licensee corrective action system(s) will be reviewed during subsequent NRC inspection on a routine basis.

Based on the above, this item is closed.

(Closed) TMI Item I.C.6 - Procedures for Verification of Correct Performance of Operating Activities. Supplement No. 1 to NUREG-0420, Safety Evaluation Report (related to the operation of Shoreham Nuclear Power Station, Unit No. 1, and dated September 1981) concluded that the licensee detailed response to this item, when implemented, was acceptable. The inspector reviewed the following procedures and verified that they addressed the subject independent verification as described in the above licensee response (namely FSAR Section I.C.6-1, Revision 22).

-- SP 12.011.01, Station Equipment Clearance Permits, Revision 13

-- SP 12.013.01, Maintenance Work Requests, Revision 17

-- SP 12.015.01, Preventive Maintenance Program, Revision 5

-- SP 12.016.01, Surveillance Program, Revision 7

-- SP 12.035.01, Control of Lifted Leads and Jumpers, Revision 9

-- SP 12.035.02, Control of Temporary Modifications, Revision 0

This item is closed.

(Closed) Bulletin 80-02 - Possible inadequate Quality Assurance/Control for certain vendor supplied items. Licensee response letter (SNRC-476) to the NRC Region I, dated May 29, 1980 addressed item 1.a of the bulletin satisfactorily. Reference in that letter to a GE submittal to the NRC (NEDE-21821-2) that classified the subject non-safety related was found acceptable by the latter on January 14, 1980. This satisfies Item 1.b of the bulletin. Item 2 of the bulletin requires submittal of performance data which is not yet available. The licensee has a method for the administrative control and tracking of such items requiring future action. Station Procedure SP 12.006.03, Master Punch List Open Item Program, Revision 0, describes this action item method. The submittal of performance data to the appropriate NRC office has been entered into the action item program as Item 132.1. This satisfies Item 2 of the bulletin. Although classified non-safety related they were fabricated under the A/E's graded QA Program.

The inspector reviewed several of the A/E's then current procedures and the A/E QA acceptance/release document issued by the assigned A/E Surveillance Auditor. Further, records indicate that the onsite installation work activities were accomplished in accordance with approved QA Program implementing procedures and was overviewed by QA/QC personnel.

(Closed) Unresolved Item 82-04-14 - Timely updating and dissemination of drawings. The licensee has implemented a different method of modification control and revision of affected drawings. Procedure SP 12.010.02, Station Modification Activities, Revision 4, describes in detail how the modification process is now controlled and the generation of "marked-up" drawings for use by Control Room personnel. Procedure NOSD 29.2, Satellite File Control, Revision 1, addresses the control and dissemination of the "marked-up" drawings to the Control Room.

Based on the above and the results of additional reviews discussed in items 83-02-12 and 83-21-04 herein, this item is closed.

4.0 Review of Plant Procedures

4.1 General

The inspection was conducted to ensure the licensee has developed procedures to control safety-related operations. The review was for the purpose of understanding the scope and depth of the procedures and did not constitute a step-by-step review.

4.2 References

(1) Technical Specifications Unit 1 (Proposed)

(2) Regulatory Guide 1.33-1978, Quality Assurance Program Requirements (Operation)

(3) ANSI N18.7-1976, Administrative Controls and Quality Assurance for the Operational Phase of Nuclear Power Plants

(4) LILCO letters of September 16 and November 26, 1982, Smith to Denton, NRR, Subject: Emergency Procedures

(5) FSAR Section 13.5, Plant Procedures

(6) Safety Evaluation Report related to the operation of Shoreham Nuclear Power Station including Supplements 1, 2, 3 and 4

(7) NUREG-0737, November, 1980, Clarification of TMI Action Plan Requirements

(8) (Draft) Emergency Procedure Guidelines, BWR Owners' Group, Revision 1B

(9) NUREG/CR-2005, Checklist for Evaluating Emergency Procedures Used in Nuclear Power Plants, May 1981

4.3 Scope of the Inspection

The inspectors reviewed the licensee's overall procedure control program and the procedures identified in Section 4.4 to assure the following as applicable:

- -- The procedure program was consistent with the requirements of references (2) and (3) above.
- -- New procedures and procedure revisions were controlled in accordance with reference (5).
- -- The emergency procedures were adequate to meet the guidelines of references (7), (8) and (9).
- -- The procedures were approved in accordance with the requirements of reference (1).
- -- The procedural steps were clear and concise.
- -- The overall procedure program provided guidance to the users for handling normal and off normal plant conditions.
- -- The equipment and controls used in the procedures were correct and identifiable.

4.4 Procedures Reviewed

4.4.1 Administrative Procedures

- -- 12.003.01, Personnel Qualifications and Responsibilities, Revision 12
- -- 12.006.01, Station Procedure - Preparation, Review, Approval, Change, Revision and Cancellation, Revision 21
- -- 12.006.02, Station Procedures - Control and Distribution, Revision 22
- -- 12.011.01, Station Equipment Clearance Permits, Revision 13
- -- 12.011.02, Station Operator Clearance Procedure, Revision 2
- -- 12.016.01, Surveillance Program, Revision 7

- -- 12.035.01, Control of Lifted Leads and Jumpers, Revision 9
- -- 21.001.01, Shift Operations, Revision
- -- 21.002.01, Operations Log and Records, Revision 5
- -- 21.004.01, Main Control Room - Conduct of Personnel, Revision 6
- -- 21.008.01, Standing Orders, Revision 4
- -- 21.036.01, Operations System Valve Lineups to Support Plant Startup (Temporary), Revision 0

4.4.2 General Operating Procedures

- -- 22.001.01, Startup - Cold Shutdown to 20% Power, Revision 7
- -- 22.001.02, Reactor Criticality, Revision 0
- -- 22.004.01, Operation Between 20% and 100% Power, Revision 4
- -- 22.00.01, Shutdown - From 20% Power, Revision 4

4.4.3 System Operating Procedures

- -- 23.106.01, Control Rod Drive, Revision 6
- -- 23.201.01, Automatic Depressurization System (ADS), Revision 4
- -- 23.203.01, Core Spray System
- -- 23.311.01, 480 Volt Emergency Bus Distribution, Revision 3

System operating procedures contained the guidance for abnormal system conditions and valve lineup checkoff sheets and were reviewed with the procedure.

4.4.4 Surveillance Procedures

- -- 24.122.01, Service Water Pump Flow Rate Test and Valve Operability, Revision 4
- -- 24.122.02, Service Water System Valve Operability, Revision 2

- 24.122.03, Service Water System Valve Lineup Verification, Revision 1
- 24.201.01, ADS - Manual Valve Actuation, Revision 1
- 24.203.03, Core Spray System Venting and Valve Lineup Verification, Revision 4
- 24.203.01, Core Spray Pump Operability and Flow Test Rate, Revision 3
- 44.203.10, ECCS - Core Spray Valve Open Permissive Response Time Test, Revision 2
- 44.311.01, LPCI/Recirculation Valve Swing Bus Instrument Functional Test, Revision 0

4.4.5 Alarm Response Procedures (ARP)

- ARP 1338, RHR or Core Spray System 'A' Running
- ARP 1340, ADS System 'A' Hi Drywell Pressure Signal
- ARP 1342, ADS System 'A' Timer Initiated
- ARP 1345, ADS System 'B' Inoperative

4.4.6 Emergency Operating Procedures

- 29.002.01, Abnormal Radiation Release - Offgas (SJAE), Revision 2
- 29.002.03, Abnormal Radiation Release - Station Ventilation, Revision 2A
- 29.003.01, Control Rod Drop, Revision 2
- 29.005.01, Loss of SRM and IRM Systems, Revision 0
- 29.008.01, Fuel Clad Failure, Revision 2
- 29.009.01, Fuel Handling Accident, Revision 1
- 29.010.01, Emergency Shutdown, Revision 5
- 29.012.01, Loss of Condenser Vacuum, Revision 2

-- 29.013.01, Loss of Primary Containment, Revi .on 2

-- 29.015.01, Loss of Offsite Power, Revision 4

-- 29.020.01, Loss of Shutdown Cooling, Revision 2

The above Emergency Operating Procedures are system oriented. The symptom oriented Emergency Procedures were reviewed in detail and walked through at the simulator by NRR and the licensee's staff. This process and NRR approval is described in the SER and Supplements 1, 2, 3 and 4.

4.4.7 Maintenance Procedures

-- 35.106.03, Control Rod Drive Pump Suction Filter Replacement, Revision 1

-- 35.109.02, Reactor Feed Pump Maintenance, Revision 2

-- 35.116.01, Main Steam Isolation Valve Maintenance, Revision 3

-- 35.119.01, RCIC Turbine General Maintenance, Revision 1

-- 35.120.04, Reactor Recirculation Jet Pump Removal and Installation, Revision 1

-- 35.121.01, RHR Pump Rotating Assembly Removal and Installation, Revision 1

4.5 Findings

No violations were identified.

5.0 Operational Staffing

5.1 References

-- ANSI 18.1-1978, Selection, Qualification and Training of Personnel for Nuclear Power Plants

-- FSAR Section 13, Conduct of Operations

-- Proposed Technical Specifications, Section 6, Administrative Controls

5.2 Staffing and Qualifications

A review was conducted to verify the licensee's station organizational structure was in accordance with the FSAR, proposed Technical Specifications and that the staff positions were filled or that there were plans to fill them by issuance of the operating license. In addition, the following staff qualifications were reviewed to ensure they satisfied the requirements of the references listed in paragraph 5.1.

-- Plant Manager

-- Director, QA, Safety and Compliance

-- Director, Nuclear Engineering Department

-- Chief Operating Engineer

-- Chief Maintenance Engineer

-- Chief Radiological Control Engineer

-- Chief Modification/Outage Engineer

-- Operating Engineer

-- Reactor Engineer

-- Maintenance Engineer

-- Instrument Engineer

-- Health Physics Engineer

-- 3 Watch Engineers

-- 2 Maintenance Foreman

5.3 Findings

5.3.1 Due to a recent reorganization, the site organization is different than depicted in the FSAR and Technical Specifications. The licensee is in the process of preparing updated organizational charts for submittal to NRR for both the FSAR and Technical Specifications.

5.3.2 Currently, two vacancies exist in the operations organization, the Chief Radiological Control Engineer and the Radwaste Engineer, and the licensee is actively recruiting to fill the positions. The Chief Radiological Control Engineer position is being filled by the Radiochemistry Engineer and being assisted by a qualified contractor. The Radwaste Engineer position is being filled by a qualified contractor.

5.4 Findings

No violations were identified.

6.0 Management Interview

Licensee management was informed of the scope and purpose of the inspection on April 2, 1984 and at the entrance interview conducted at the Shoreham Nuclear Power Station on April 16, 1984.

The preliminary results of this inspection were discussed with licensee representatives periodically during the inspection and in meetings with the licensee management on April 20, 1984.

Exit interviews were conducted at the Shoreham Nuclear Power Station (see paragraph 1 for attendees) on April 25 and 27, 1984, at which time the results of the inspection were presented.

At the exit interview of April 25, 1984, the inspector gave the licensee a listing of the items that were expected to be closed by this inspection report (Enclosure 1).