



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

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

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

June 27, 1985

SNRC-1186

Dr. Thomas E. Murley, Regional Administrator
Office of Inspection & Enforcement
Region I
U. S. Nuclear Regulatory Commission
631 Park Avenue
King of Prussia, PA 19406

Inspection Report No. 50-322/85-04
Shoreham Nuclear Power Station - Unit 1
Docket No. 5-0322

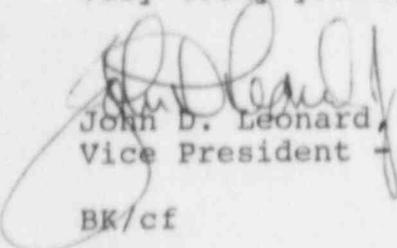
Reference: Letter from T. T. Martin (NRC) to J. D. Leonard
(LILCO), dated June 5, 1985; transmitting Inspection
Report No. 50-322/85-04

Dear Mr. Denton:

In response to the request stated in the reference, enclosed
(Enclosure I) please find a complete listing of the actions
planned or taken to satisfy each item, noted in the reference
inspection report on Post Accident Sampling and Radiation
Monitors.

We trust this satisfies the requirements of the above listed
reference and if you should have need of additional information,
please do not hesitate to contact this office.

Very truly yours,


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

BK/cf

Enclosure

cc: J. A. Berry, Resident Inspector
T. Martin, Director

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ENCLOSURE I

Item 85-04-01 A. Evaluate and establish appropriate sample system purge times to ensure a representative reactor coolant sample. Place such purge times in appropriate procedures.

Response Sample line volume determinations are being completed and appropriate instructions based on volumes and flow rates will be placed in Emergency Preparedness Implementing Procedures (EPIP) to ensure representative sampling. This item is scheduled for completion by 8/13/85.

B. Evaluate and modify the system and applicable procedures to provide for acceptable reactor coolant dissolved gas quantification.

Response A system design modification to place the expansion flask in the circulation loop is designed and awaiting final approval for implementation. Appropriate changes to the system and the procedures to quantify the amount of gas will be completed by 8/13/85. Initial extracted gas pressure and final diluted gas pressures will be included in the calculations.

C. Revise reactor coolant sample collection procedures to ensure samples of relatively low dose rates can be collected consistent with sample dose rate limits specified in procedures.

Response Approved procedures to request dilution of the sample to approximately 0.5 mR/hr above the flushed system background reading will be accomplished by 8/13/85.

Item 85-04-02 Evaluate adequacy of reactor coolant sample water source. Provide backup water sources as needed.

A modification is in progress to provide backup source of cooling, flushing and dilution water to the PASS. Efforts will continue to complete the modification prior to 5% power, however, if this work cannot be completed in the necessary time frame, other alternate means will be used to secure an adequate backup source.

Item 85-04-03

Provide procedure guidance for collection of undiluted reactor coolant samples for onsite laboratory analysis.

Response

On-site analysis of undiluted reactor coolant samples may be performed if the contact dose rate of the sample flask is less than 20R/hr; however, this is not the regulatory required backup method for reactor coolant analysis. Backup analysis will be performed at an off-site laboratory. Procedures to provide guidance for obtaining samples to perform on-site analysis will be completed by 8/13/85.

Item 85-04-04

Establish and approve procedures for transporting highly radioactive samples to off-site analysis facility.

Response

Emergency Plan Implementing Procedure EPIP 2-26 has been revised to detail moving shielded sample cask from the sample room to the truck bay of the reactor building for loading into an approved transport cask. EPIP 3-7 has been drafted to provide guidance for obtaining the transport cask from Pooled Inventory Management (PIM). Procedure R2.713.60 directs the proper method of loading the sample cask into the transport cask. These procedures will be approved by 8/6/85. Transportation of the cask on a transport vehicle to a DOE assigned laboratory will be coordinated by the Brookhaven Area Offices as detailed in letter SNRC-815.

Item 85-04-05 A.

Evaluate and establish appropriate sample system purge times to ensure representative atmosphere samples. The purge times have not been determined.

Response

Sample line volume determinations will be done. Appropriate instructions based on volume and flow rates will be placed in Emergency Preparedness Implementing Procedures (EPIP) to ensure representative sampling. This item is scheduled for completion by 8/13/85.

- B. Evaluate and modify the system to ensure acceptable atmosphere sample dilution. During the dilution process, it is not clear that the samples will be properly evaluated for dilution. The sample is recirculated during dilution; however, it is not clear that all portions of the sample are recirculated.

Response A system design modification to remove the dead legs formed by a bypass loop is awaiting approval for implementation. Change to the system will be completed by 8/6/85. Associated procedures will be completed by 8/13/85.

Item 85-04-06 A. After the system modifications are complete, the on-line analyzer should be tested to demonstrate its ability to perform chloride analysis within the specified accuracy.

Response The system modification to increase the differential pressure across the ion chromatograph on-line analyzer is complete. Preliminary testing has been completed. The system will be tested with a matrix solution to evaluate acceptability by 8/1/85.

B. A cover should be placed over the plastic tubing components of the ion chromatograph to prevent damage to them.

Response A cover has been designed to prevent inadvertent physical damage to the plastic components on the ion chromatograph sensor panel and will be completed by 7/22/85.

C. The PASS procedures should quantitatively state action level criteria (i.e, eliminate such terms as several hundred psi).

Response Operating procedures have been revised to reflect the system modification and define action level criteria and will be completed by 7/18/85. Emergency Plan Implementing Procedures are scheduled for approval by 8/13/85.

Item 85-04-07 A. The boron/pH analyzer should be tested to determine its response to a multi-acid/base mixture which includes the elements in the Standard Test Matrix. Also the ability of the system to meet the analysis acceptance criteria commitment should be demonstrated.

Response The Standard Test Matrix described in "NUREG 0737 II.B.3 Evaluation Criteria Guidelines Attachment 1 To Post Accident Sampling System" will be used to evaluate the ability of the pH/boron analyzer to meet the analysis acceptance criteria. This work will be completed by 8/1/85.

- B. The reagent and solution containers should be clearly identified.

Response The reagent and standard reservoirs shall be tagged for identification by 7/22/85.

Item 85-04-08 The capability for the on-line analysis of pH should be demonstrated. The commitment to measure concentration to within an accuracy of ± 0.01 pH units should be reassessed.

Response The on-line pH/boron analyzer will be tested to determine if the pH measurements meet the accuracy requirements of "NUREG 0737 II.B.3 Evaluation Criteria Guidelines" by 8/1/85. A licensing change request is in progress to change the accuracy of pH measurements specified in the FSAR to those specified by the vendor and required by the guidelines. An FSAR revision will be included in LILCO's two year update to the FSAR.

Item 85-04-09 A. When the plant becomes operational and sufficient activity has built up in the coolant, appropriate tests should be conducted to demonstrate the capability of the system to obtain representative samples, based on a comparison of isotopic analysis of normal and PASS samples. The accuracy of the analysis should also be stated.

Response Calibration of the Ge detector using standard geometries has been completed and calibrations using post accident sample flask geometries with liquid and gas standards is in progress. Comparison with samples obtained during normal operation will be conducted when sufficient activity is present in the reactor coolant.

- B. Provisions should be made in the procedure to protect the Ge detector from contamination.

Response Emergency Plan Implementing Procedures (EPIPs) have been revised to require placement of the flask in a plastic bag prior to placing the sample in the cave. These procedures will be approved by 8/13/85.

- C. Nitrogen should be used to purge the detector shield under accident conditions.

Response A scheme is being developed to purge the detector with an uncontaminated gas when the atmosphere in the PASF makes this necessary to obtain valid gamma spectral analysis results.

Item 85-04-10 A. Evaluate the acceptability of using station supplied breathing air.

Response The EPIP prerequisite for service air availability as breathing air will be deleted. Self-Contained Breathing Apparatus (SCBA) will be used as the initial source of breathing air in the PASF if airborne activity indicates the need for breathing protection. If the need for such protection continues and the station supplied breathing air system is available and its quality tested to be acceptable, it may be used in place of SCBA. This item will be completed by 8/13/85.

B. Perform a "time and motion" study for collection of undiluted reactor coolant samples to ensure the personnel dose acceptance criteria of GDC 19 are met.

Response A "time and motion" study for collection of undiluted reactor coolant samples has been performed to evaluate personnel exposure. The draft report is due 7/3/85 with comment resolution and final report by 8/13/85.

C. Tag all appropriate valves in the PASS facility.

Response Station procedure 73.040.02, detailing the manual valve lineup for the Post Accident Sampling System, is approved and all manual valves have been tagged.

D. Ensure the installed oxygen analyzer can withstand full reactor coolant system pressure. No documentation was provided to demonstrate that the actual installed system would withstand RCS pressure (@1100 psi).

Response Orbisphere Laboratories has provided a letter stating that the 21002 oxygen sensor is operable with line pressures up to 1450 psi.

E. Approve calibration procedures for the installed PASS radiation monitors.

Response

Station Procedure 76.720.01, "Victoreen 3-Channel Gross Gamma Monitoring System Calibration," has been approved and the system will be calibrated by 7/16/85. The station procedure for calibration of the CST water radiation monitor is in draft form and the system will be calibrated by 8/13/85.

- F. Consider movement of the heat trace temperature indicator to the operating floor elevation of the PASS facility. During accident conditions, technicians in breathing apparatus may need to climb a circular stairway to obtain temperature readouts. Also, during the sample collection drill, the technicians could not locate the indicator.

Response

EIPs will be modified by 8/13/85 to detail the location of the indicator. Space is not available on the operating floor to relocate all indicators.

- G. Clarify valve position guidance in Procedure EPIP 2-11. During a sample collection, "Realign" was misinterpreted as leave in original position. This resulted in a sample being unintentionally flushed from the sample system.

Response

EPIP 2-11 was revised to specify "open" or "close" valve and valve rotation direction specified. This item will be completed by 8/13/85.

- H. Evaluate the need for use of respiratory protection equipment during the disconnecting of pressurized samples from the system. Respirators were not required during the disconnection.

Response

All sample transport lines are thoroughly flushed prior to disconnection.

- I. Correct the incorrect reference in Procedure EPIP 2-11, paragraph 5.4.4.16. The paragraph refers to the wrong paragraph number for further guidance.

Response

The incorrect reference was addressed in revisions currently being made to the EPIP. This item will be completed by 8/13/85.

- J. Complete labeling of all readouts and monitors on the PASS panel. A significant number of readouts were not labeled on the panel.

Response

Instrumentation and indicator lights for automatic valve trips have been labeled.

- K. Establish several operating/sample collection procedures for the PASS Facility. The current operation/sampling is controlled by one procedure of 150 pages. The use of this single procedure is cumbersome and difficult, as evidenced by observation of licensee technicians attempting to use it. The use of the procedure was further complicated by incorrect references contained therein (see above).

Response

The Emergency Plan Implementing Procedure for sample collection/system operation is being revised to utilize appendices for each specific type of sample. The technician will be issued this concise set of instructions at the briefing session prior to being dispatched to the PASS Facility. This item will be completed by 8/13/85.

- L. Clarify the sample analyses to be performed by Brookhaven National Laboratory and make provision for periodical updating of the agreement for these analyses.

Response

LILCO is in the process of expanding their understanding of both Department of Energy's (DOE) role and Brookhaven National Laboratory's (BNL) role relative to these sample analyses. The backup sample analyses requested of DOE are as follows: conductivity, pH, boron, chlorides, gamma, isotopic, and dissolved & entrained gases. The DOE at BNL, with whom LILCO has a letter of agreement, will be the focal point for coordinating these analyses. These sample analyses will be done at the discretion of the DOE at the appropriate laboratory (not necessarily BNL). LILCO's letter of agreement with DOE will be reviewed annually.

- M. Establish a designated area for storage of PASS samples.

Response EIPs are currently being revised to specify an appropriate storage area for PASS samples. Appropriate shielding will be placed as required; however, most PASS samples will be low activity since dilution will be required to analyze samples on the Ge detector. This item will be completed by 8/13/85.

- N. Review the training of technicians in the use of portable-oxygen detectors. The technician using the detector to determine habitability of the PASS Facility was uncertain of the appropriate percent oxygen limit for normal, unassisted breathing.

Response Oxygen level requirements are specified in Health Physics procedures and this information will receive additional emphasis during training.

Item 85-04-11 A. The Operating and the EPIP procedures for the RE-126 and RE-134 effluent monitors differ. The procedures differ relative to their guidance for changing out filters. One procedure says valve out the sample pump, whereas the other procedure says to manually shut off the pump.

Response Operating procedures will be revised to conform with EIPs which are correct. This item will be completed by 7/30/85.

- B. Complete on-site flow calibration of sample flow paths. Flow calibration should be implemented for the 650 cm³/min sample paths of RM-126 and RM-134.

Response Sample flow calibration for RE-126 and RE-134 is required by SP 74.631.04 and is current.

- C. Consider use of computer assisted/generated decay corrections for Modcomp software in order to accurately quantify the source term. Currently, no decay correction is applied to the nuclide library used by the Modcomp software. Modification of the library to allow for radioactive decay will reduce the analytical error. The correction could be made by hand via incorporation of a gamma spectra. This would be time consuming and prone to errors.

Response Decay correction for default inventories is being considered for the Modcomp software.

Item 85-04-12 A. Establish and implement procedures for analysis of highly radioactive effluent samples. Currently no procedures have been established for analysis of such samples.

Response The EPIP is being revised to obtain only low activity sample from RE-126 and RE-134 by control actions initiated remotely. This item will be completed by 7/30/85.

B. Perform a "time and motion" study, as necessary, to ensure the personnel dose guidance specified in 10CFR 50, Appendix A, General Design Criterion 19, would be met during effluent sample, collection, transport, handling, and analysis. The time and motion study should use source term guidance specified in NUREG-0737.

Response A "time and motion" study is being prepared to ensure that personnel exposure will not exceed dose guidance specified in 10CFR50, Appendix A during sampling, handling and analysis for reactor effluents. The draft report is due 7/3/85 with comment resolution and final report by 8/13/85.

C. Replace the inoperable detector for Channel C of RM-126. Establish surveillance procedures (as necessary) to ensure prompt replacement of inoperable detectors.

Response Detector has been replaced and system is functioning properly.

Item 85-04-13 Install environmentally qualified high range detector assemblies by November 30, 1985.

Response New detectors and cable assemblies have been environmentally qualified and are scheduled to be installed by November 30, 1985.

Item 85-04-14 Review the adequacy of calibration of battery powered air samplers (RADECO H809-C). These samplers are flow calibrated with charcoal cartridges in place. However, during accident situations, silver zeolite cartridges may be used. The flow calibration may not be valid when the zeolite cartridges are used.

Response The adequacy of the calibration was reviewed and the following problem identified: the calibration standard did not measure below one CFM and when the silver zeolite filter is used the sampler is pulling between 0.5 and 1. CFM. The problem has been remedied by securing a standard that measures below one CFM.

Item 85-04-15 Valcor similarity analysis should be in the EQ data file and Comment #1 EQREF TR-S1554-2-01 should be revised to reflect the correct location of the similarity analysis. This is an open item pending NRC verification that EQ data file is updated accordingly.

Response The EQ data file has been revised to include the Valcor similarity analysis and Comment #1 has been revised to reflect the correct location of the similarity analysis.

Item 85-04-16 The calibrations and loop checks...
have not yet been conducted ...

Response Listed below are the SAWS loop check and calibration schedules for 23 instrument loops and the action which was taken by I&C:

Instrument Loop	Freq. (Mos.)	Due Date	Comments	Extension	Completion Date	
1296-410CLR-014	-	9/28/84	deleted	11/9/84	Equip. never installed	
1296-410E/I-018	18	5/11/84		9/14/84	3/22/85	
1296-410E/I-019	18	5/11/84		9/14/84	3/22/85	
1296-410E/I-021	18	5/11/84		9/14/84	3/22/85	
1296-410FIT-120A	18	3/20/84	Standard was off-site for cal. MWR 85-1446 in progress for loop cal.	7/24/84	MWR85-1775*	
1296-410FIT-120B	18	3/20/84	"	"	7/24/84	MWR85-1775*
1296-410FIT-131	18	3/23/84	"	"	7/27/84	MWR85-1820*
1296-410PRS-503	6	6/29/84		8/10/84	2/20/85	
1296-410PS-058	18	6/13/84		10/17/84	3/22/85	
1296-410PS-079A	18	6/1/84		10/5/84	3/21/85	

Instrument Loop	Freq. (Mos.)	Due Date	Comments	Extension	Completion Date
1Z96-410PS-079B	18	6/1/84		10/5/84	3/21/85
1Z96-410PS-124	18	5/22/84		9/25/84	3/21/85
1Z96-410PT-015	18	9/14/84		1/18/85	3/28/85
1Z96-410PT-016	18	6/13/84		10/17/84	3/22/85
1Z96-410PT-017	18	5/15/84		9/18/84	3/25/85
1Z96-410TIC-076B	18	5/18/84	Standard out for cal deferred (allowable due date 5/18/87)	9/21/84	Due 6/25/85
1Z96-410PT-125	18	6/1/84		10/5/84	3/23/85
1Z96-410TIC-076C	18	5/22/84		9/26/84	3/25/85
1Z96-410TRS-076	6	6/29/84		8/10/84	2/27/85
1Z96-410TRS-502	6	6/29/84		8/10/84	3/22/85
1Z96-410TS-076X	-	3/9/84	deleted	7/13/84	Incorp. into TIC-076B loop
1Z96-410TS-076Y	-	3/9/84	deleted	7/13/84	" "
1Z96-410X7R-025	6	6/29/84		8/10/84	3/6/85

*MWR 85-1775 & MWR85-1820 were for Functional Test of Instruments which were performed satisfactorily. MWR 85-1446 is for Loop Cal which is in progress.

Item 85-04-17

The inspector also identified numerous instruments with missing calibration stickers...

Response

Based upon this audit and previous discussions with other departmental organizations internal to LLCO, calibration stickers will no longer be required. Station Procedure Change Notice 85-0416 is in preparation to implement this change and will be effective before September 1985.

The calibration sticker was originally designed for control of M&TE devices which have a very rigid calibration frequency, and the calibration due date must be shown for meeting the prerequisites of the procedures in which the equipment is used (e.g.: "Verify that the calibration date of the test equipment to be used has not expired"). This philosophy does not apply to field installed equipment as the calibration frequency is governed by equipment, history, surveillance requirements, system and plant priorities and manpower availability. The calibration sticker is also impractical for field applications due to adverse conditions in the plant versus a controlled atmosphere in the M&TE shop. The requirement for a calibration sticker to be affixed to plant equipment was meant for information only, not as a control.

Item 85-04-18

The licensee has established a maintenance program to maintain plant equipment. However, as of the time of this inspection the license had not implemented the maintenance program for the post-accident sampling facility (Details section 9.4).

This item remains open until NRC has verified that the maintenance program has been developed (50-322/85-04-18).

Response

This item should not remain open since the Maintenance Program had been developed. Implementation of the program was not current as the PASS system need not be operable until exceeding 5% power. As a result, the identified calibrations were placed on hold and would be completed prior to placing the PASS in operation. These particular PM's (296) have since been completed (see previous page).

Item 85-04-19 A.

The core damage procedure should be finalized before completion of the first refueling outage. An evaluation should be conducted to assure that all necessary input data is available and in the proper format.

Response

Steps will be taken in a timely fashion to assure that the input data and format of the Core Damage Procedure will be finalized before completion of the first refueling outage in accordance with operating license condition C. (8) (c).

- B. Obtain documented approval from NRR which allows the licensee to solely use in-line hydrogen analysis methodology to satisfy the requirements of NUREG-0737, II.B.3. (Clarification Paragraph 2b).

Response

LILCO is preparing a submittal to the Office of Nuclear Reactor Regulation (N.R.R.) by July 30, 1985 to clarify the use of in-line hydrogen analyzers.

Item 85-04-20

The licensee had provided training of applicable personnel in the area of post-accident sampling and analysis. However, before the inspection (November, 1984) the licensee revised the post-accident sampling procedure, but had not yet trained all personnel on the procedure. The procedure was not yet effective (effective February 22, 1985). The licensee has yet to complete training of all personnel.

Response

Applicable personnel will be trained on procedures revised to reflect changes to systems and methods. Training will be completed by 8/23/85.