LILCO
LONG ISLAND LIGHTING COMPANY
SHOREHAM NUCLEAR POWER STATION
P.O. BOX 604, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

December 18, 1982

Hunton & Williams
707 East Main Street
P.O. Box 1535
Richmond, Virginia 23212

ASLB Request for Additional Information
Shoreham Nuclear Power Station - Unit 1

Attention: Messrs. A. Earley Esq.
T. Ellis Esq.

Dear Sirs:

Enclosed herewith are the LILCO responses covering the November 30, 1982 ASLB request for additional information. The responses are identified as follows:

ITEM 1: NRC Inspection Report No. 50-322/82-26
Appendix A
Incorporation of E&DCR F-6085B into G.E.
Subvendor Drawings 1.61-154 and 1.61-156

ITEM 2: NRC Inspection Report No. 50-322/82-29
Paragraph 3.5.1
Screenwash System Check Valve Replacement

ITEM 3: NRC Inspection Report No. 50-322/82-29
Open Item 322/82-29-01
Flooding Study for Non-Safety Related
Fiberglass Piping Failure in the Control Building

ITEM 4: NRC Inspection Report No. 50-322/82-29
Open Item No. 322/82-29-02

If you should have any questions regarding this matter or require additional information, please contact me.

Sincerely yours,

W. J. Museler

W. J. Museler
Manager Construction & Engineering
Shoreham Nuclear Power Station

Enclosures

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Item 1

ASLB REQUESTS FOR ADDITIONAL INFORMATION

ITEM IDENTIFICATION: NRC Inspection Report No. 50-322/82-26
Appendix A

ITEM DESCRIPTION: Incorporation of E&DCR F-6085B
Into G.E. Subvendor Drawings
1.61-154 and 1.61-156

I. PROBLEM DESCRIPTION

E&DCR F-6085B implemented a minor design change to the electrical circuitry in the HPCI and RCIC Systems in order to reduce the frequency of inadvertent trips to these systems during testing. The E&DCR was issued as the implementing document to cover the G.E. Design Change Notice. This particular change was not incorporated onto the G.E. Subvendor drawings and the review process designed to insure that all E&DCRs are properly incorporated into the design drawings did not pick up the fact that, although the drawings and the drawing log did indicate that the E&DCR was incorporated, it, in fact, was not incorporated. The change was properly incorporated in the field in accordance with the E&DCR.

II. CAUSE OF THE DISCREPANCY

1. In the case of drawing 1.61-154, the S&W reviewer mistakenly indicated that the E&DCR had been incorporated onto the drawing when in fact it had not been incorporated. The change was relatively minor, and after investigation, the cause in this case appears to be reviewer error.

2. In the case of drawing 1.61-156, an administrative problem involving the drawing legibility enhancement program resulted in an assumption that the review for E&DCR incorporation had been performed on this particular drawing when, in fact, it had not. Since no review was performed in this particular case (the same E&DCR change), the same result was realized.

II. CAUSE OF THE DISCREPANCY (Continued)

3. With respect to the E&DCR log, the E&DCR incorporation review process and the E&DCR log update process are essentially part of the same system. Since the E&DCR incorporation review process indicated that these E&DCRs had been incorporated, the E&DCR log recorded that fact and likewise indicated that they had been incorporated. The system functioned properly with regard to the E&DCR log so no discrepancies in the E&DCR log are attendant to this problem. The log incorrectly indicated that the E&DCR had been incorporated as a result of the errors in the review process described above.

III. SAFETY SIGNIFICANCE

There is no safety significance attendant to this problem for the following reasons:

1. The E&DCR was properly implemented in the field and therefore the system will perform as designed. In previous testimony we have indicated several times that the E&DCR is generally the implementing document for Construction. We would have expected that the work was properly implemented in the field since the E&DCR, and not the vendor drawing, is the document used to perform the actual work.

2. Two (2) plant maintenance procedures were affected by this E&DCR (Station Procedures 47.202.01 and 47.119.01). Both of these procedures correctly reflect the system in accordance with the E&DCR.

3. The system would perform its safety functions properly in either configuration, that is either with or without the incorporation of the E&DCR. The change was only made to reduce the frequency of inadvertent trips during testing.

4. We believe this to be an isolated instance and therefore we do not believe it has any generic safety implications. Further explanation of this particular point is provided below.

IV. GENERIC IMPLICATIONS BEYOND THE SPECIFIC PROBLEM

As stated above, we believe this is an isolated case of non-incorporation of an E&DCR and, in order to validate that judgment, a sample of one hundred seventy-five (175) manufacturer's drawings of the same general type as the two (2) identified by the NRC, were reviewed to determine whether all applicable E&DCRs had been properly incorporated into these drawings. This review indicated that all of the manufacturer's drawings reviewed had the associated E&DCRs properly incorporated. The review specifically included one hundred five (105) electrical drawings (the drawings exhibiting the problem were electrical drawings), covered a time frame bracketing the time of review of the E&DCRs in question by eleven (11) months, and included drawings from the legibility enhancement program to insure that this particular area was also covered. In addition to determining that all E&DCRs in the sample were properly incorporated, we also determined that all of the drawings sampled which were also part of the legibility enhancement program were properly reviewed by S&W. The lack of review for this attribute, which was exhibited by the second (2nd) drawing, is in our judgment also an isolated instance.

V. CORRECTIVE ACTION

Drawings 1.61-154 and 1.61-156 were subsequently revised by S&W with G.E. authorization, properly reviewed, and distributed to the jobsite.

VI. WHEN WOULD THIS PROBLEM HAVE BEEN UNCOVERED BY LILCO OR S&W?

A modification to these specific control circuits might have uncovered the fact that the manufacturer's drawing did not agree with the installed circuitry involving the single additional resistor. For the normal testing sequence of the plant, the plant maintenance procedures do reflect the as-built condition of the plant and therefore unless there was some reason to modify these particular circuits, the deviation probably would not have been noticed, nor would this lack of detection have constituted any safety or operational problem since, as indicated earlier, the plant was built as-designed and all plant procedures properly reflect the as-built plant.

VII. REFERENCES

1. NRC Inspection Report No. 50-322/82-26
Appendix A

2. Drawings 1.61-154 and 1.61-156

ASLB REQUESTS FOR ADDITIONAL INFORMATION

ITEM IDENTIFICATION: NRC Inspection Report No. 50-322/82-29 Paragraph 3.5.1

ITEM DESCRIPTION: Screenwash System Check Valve Replacement

I. PROBLEM DESCRIPTION

In December of 1980, due to a crack in an internal component (disk) in a check valve in the Non-Safety Related Screenwash System, field personnel requested (by E&DCR F-32519) permission to replace the damaged valve and to procure two (2) spares. The field suggested a change of trim material to 316 Stainless Steel. This was not approved. Engineering approval was granted for replacement of this valve type with an identical type valve or an approved substitute differing only in disk material (B type valve with a bronze disk instead of an E type valve with a monel disk). E&DCR F-32519 required the field personnel to document on a future E&DCR the use of the B type valves if they were being substituted on a permanent basis for the E type. This was required, despite prior approval for installation, to insure that the appropriate documentation would be modified. The field personnel documented on E&DCR F-32519A that B type valves were being substituted for E type valves. This was as required by the original E&DCR. As a result of a misinterpretation the disposition of E&DCR F-32519A approved the installation of one (1) of the replacement valves of the B type but indicated the other two (2) as being spares and therefore did not properly confirm that all of the replaced valves were in fact B type. Since all valves had been installed as the original E&DCR approved, and since the A revision of the E&DCR was not answered consistent with the requested disposition, the appropriate flow diagram (FM35B) was not updated to reflect the fact that the B type valve was installed on line 1N71WS-157-136 and the specification was similarly not updated to include the substitute type valve. As a result, the flow diagram was incorrect as to the type number of the check valve installed although the valve identification number and the functional designation of the valve (check valve) remained correct.

II. CAUSE OF THE DISCREPANCY

We have been able to speak with both the Engineering personnel involved in this matter and with the Field Engineers responsible for writing the E&DCRs and performing the work in the field. We believe that the cause of the discrepancy was misinterpretation of the E&DCRs involved. Specifically:

1. When the Engineers provided the disposition to E&DCR F-32519A (the E&DCR documenting that all check valves of the E type were being replaced by the B type) they provided a response based on a statement in the original E&DCR (F-32519) which they were reviewing in addition to the A revision. The statement read "Startup wishes to replace the damaged valve and have two (2) new valves as spares". The Engineers' disposition to the A revision was a disposition in response to this statement in the original issue and not to the specific information provided in the A revision.

2. The field personnel already had permission via the original issue of the E&DCR to procure and install either the original E type or the approved alternate B type check valves and therefore the installation was in accordance with Engineering approval given on the original issue of the E&DCR. The followup E&DCR (A revision) was only the notification for additional documentation updating as requested by the original E&DCR.

3. However, realizing that the response to the A revision of the E&DCR should have been merely confirmatory to their documentation of which of the E type valves were actually being replaced with the B type, the field personnel did not notice that Engineering had indicated that only one (1) of the three (3) valves had actually been installed.

III. OPERATIONAL AND/OR MAINTENANCE SIGNIFICANCE

This is not a Safety Related System. This deviation has no Safety significance since no Safety function is involved. In addition, approved equipment was properly installed.

This condition has no operational or maintenance significance for the following reasons:

III. OPERATIONAL AND/OR MAINTENANCE SIGNIFICANCE (Continued)

1. The two (2) types of valves in question (the E type or the B type) are equally suitable for this service, differing only in disk material (bronze vs. monel) and therefore it was only a question of availability that determined that the B type would be installed. The E type could equally well have been installed had it been available for replacement at the time.

2. The actual deviation (the fact that the flow diagram indicated a different model type of valve) is not significant from the standpoint of plant operation or maintenance since necessary information on the FM is the size and functional designation of the valve, as well as the location in the system, all of which were correctly shown on the flow diagram.

3. Since the valves were properly procured in accordance with the original E&DCR, the appropriate documentation packages were provided and we have verified that they are in the plant file. The flow diagram would not have been used for spare parts ordering purposes.

4. We believe this to have been an isolated instance and therefore it has no generic implications.

IV. GENERIC IMPLICATIONS BEYOND THE SPECIFIC PROBLEM

We do not believe there are any generic implications attendant to this finding because, as stated above, we believe it represents an isolated instance of a minor nature. E&DCRs of this type (replacement of one (1) type of component with another) for Non-Safety Related Systems are the responsibility of the Construction and Startup Engineers and there are several additional "gates" including turnover to Startup and turnover to Plant Staff which would detect any significant deviations from these types of component replacements.

In addition, we conducted a field audit on as many of these types of Non-Safety Related E&DCRs as could be performed in a one (1) week period (fifty-eight (58) E&DCRs) and have determined through field inspections and/or a review of inspection records, that all items on the E&DCRs reviewed were either incorporated in the field, deleted by subsequent E&DCRs, or partially implemented with the remaining work not yet completed but scheduled for completion prior to Fuel Load. In two (2) cases minor deviations from the specific component descriptions delineated on the E&DCRs were noted but the E&DCRs had been implemented properly and the design requirements

IV. GENERIC IMPLICATIONS BEYOND THE SPECIFIC PROBLEM (Continued)

in these two (2) cases were in fact met.

Because:

1. the deviation identified in Inspection Report No. 50-322/82-29 was the result of a misinterpretation of the E&DCRs utilized in this specific case, which we believe was understandable given the specific circumstances, and

2. our site practices for Non-Safety Related Systems are adequate to insure proper component substitutions where applicable, and

3. the audit we have conducted has confirmed that our program does in fact result in proper field implementation of this type of Non-Safety Related E&DCRs,

we have concluded that this was an isolated case and that it has no generic implications.

V. CORRECTIVE ACTION

E&DCR F-32519B was written by Construction and approved by Engineering to document the fact that all of the ten (10) inch type E check valves had been replaced with the B type check valve. This change will be reflected in the next issue of the flow diagrams and the specification. No changes to system descriptions, pre-operational test procedures, or plant maintenance of operating procedures are required as a result of this condition.

VI. WHEN WOULD THIS PROBLEM HAVE BEEN UNCOVERED BY LILCO OR S&W?

This situation would probably have been uncovered when and if a need for ordering additional spare parts for these valves became necessary. As stated previously, the proper documentation package for the installed valve is a part of the permanent plant file and would have been available to the plant maintenance personnel for reference. If the specification were used in this process (it is also a reference document for spare parts procurement) the difference in the material between the originally specified disks and the valve documentation package would likely have been noted and this would have led to a review of the E&DCRs and subsequent updating of the flow diagram.

VI. WHEN WOULD THIS PROBLEM HAVE BEEN UNCOVERED BY LILCO OR S&W? (Continued)

It should be noted that even if the E type valves were somehow procured for spare parts purposes (an unlikely event), it still would not have had any effect on the operability of the system since the parts are interchangeable and, as stated in the E&DCR, either material is suitable for this particular application.

VII. REFERENCES

1. I&E Inspection Report No. 50-322/82-29 Paragraph 3.5.1

2. E&DCR F-32519

3. E&DCR F-32519A

4. E&DCR F-32519B

ASLB REQUESTS FOR ADDITIONAL INFORMATION

ITEM IDENTIFICATION: NRC Inspection Report No. 50-322/82-29 Open Item 82-29-01

ITEM DESCRIPTION: Flooding study for non-safety related fiberglass piping failure in the Control Building.

I. PROBLEM DESCRIPTION

The NRC Inspector noted that measures had been taken in order to mitigate the consequences of a failure of the non-safety related fiberglass piping on Elevation 44' in the Chiller Room area of the Control Building. The Inspector did not have a concern as to the design of the modifications made to accommodate this condition but delineated several Quality Assurance concerns as follows:

1. The NRC Inspector requested that a summary of the calculations done for the flooding evaluation of this area be prepared and made available to him as there were no documents on site which could lead him to conclude that the design was acceptable.

2. The Inspector questioned whether the appropriate Quality Assurance measures were taken in the Engineering and Design area to support the flood mitigation measures.

3. The Inspector (and later NRR) raised the question as to whether or not this flooding study should be included in the pipe break portion of the FSAR.

II. CAUSE OF THE DISCREPANCY

1. LILCO was not and is not aware of any requirement to summarize the design process for this type of an analysis and therefore no summary was prepared. It should be noted that the normal design practice on Shoreham for non-safety related components in safety related areas is to design and construct these components seismically so that they maintain structural integrity in a seismic event and therefore will have no effect on safety related components.

II. CAUSE OF THE DISCREPANCY (Continued)

In rare cases where this is not possible, our design practice calls for the evaluation of the failure to ensure that any seismic failure of a non-safety related component will not result in an unacceptable effect on safety related components. This latter design method was used in this case since the FG pipe could not be designed seismically.

2. The Inspector's concern in this area (proper Quality Assurance of the Engineering and Design process for the flooding study) was unfounded since we have verified that all calculations and design activities conducted in this area were performed under S&W Engineering Assurance Procedures and therefore all Quality Assurance requirements for Engineering and Design were met. This information was not immediately available to the Inspector, however, and therefore the question was a valid one.

3. The original FSAR Flooding Study addressed the piping in question. In was evaluated against moderate energy pipe break criteria for through wall cracks. However, it was not specifically addressed since it was bounded by other larger pipe breaks/cracks in the area. The existing floor drain system in the area adequately handled the excess flow from those other bounding pipe breaks/cracks. Therefore, the FSAR did not contain any reference to this particular service water system fiberglass piping. The special flooding design is based on a postulated full rupture of the fiberglass piping.

III. SAFETY SIGNIFICANCE

There is no safety significance to this particular finding for the following reasons:

1. The design calculations were correct and the physical designs were also correct to address the situation of concern; that is,the break of a fiberglass pipe in the Chiller Rooms.

2. The proper Quality Assurance (Engineering Assurance) procedures were followed in the preparation of the calculations to support the design, and in the design documents themselves.

III. SAFETY SIGNIFICANCE (Continued)

3. The design was properly implemented in the field (details of NRC concerns in the detailed implementation area are covered in Item 4).

4. There are no generic implications to this finding.

IV. GENERIC IMPLICATIONS BEYOND THE SPECIFIC PROBLEM

As stated above, we believe that there are no generic implications to this item for the following reasons:

1. As stated above, the proper Engineering Assurance procedures were employed in the design of the Plant.

2. Since this type of a design consideration is addressed as part of the normal Engineering and Design process and since assuming a full rupture of a moderate energy line exceeds the criteria needed to be incorporated into the FSAR, this situation would have no affect on the NRC's review of the Pipe Break Outside Containment evaluations.

V. CORRECTIVE ACTION

1. A summary of the flooding study was prepared at the request of the I&E Inspector and will be forwarded to him for his review.

2. The FSAR will be amended to include a reference to this particular plant evaluation, However, it will be clearly pointed out that this evaluation does not fall under the Pipe Break Outside Containment (PBOC) criteria and is included for additional information purposes only.

VI. WHEN WOULD THIS FINDING HAVE BEEN UNCOVERED BY LILCO OR S&W?

LILCO and S&W were aware of this situation with respect to the calculations having been performed and that they were performed under the appropriate Quality Assurance procedures. In addition, LILCO and S&W were also aware that this situation is not covered in the Pipe Break Outside Containment (PBOC) portion of the FSAR. We believe our summary will satisfy the NRC's concerns

VI. WHEN WOULD THIS FINDING HAVE BEEN UNCOVERED BY LILCO OR S&W? (Continued)

regarding an Engineering summary of the flood analysis and we will include reference to this particular flooding analysis in the FSAR at the NRC's request. However, we do not believe that this in any way constitutes a failure of the Quality Assurance Program, nor does it constitute a situation which was not controlled under the appropriate LILCO and S&W procedures.

VII. REFERENCE:

1. NRC Inspection No. 50-322/82-29

2. S&W Letter No.LIL-21836 dated 12/06/82.

ASLB REQUESTS FOR ADDITIONAL INFORMATION

ITEM IDENTIFICATION: NRC Inspection Report No. 50-322/82-29
Open Item No. 322/82-29-02
Paragraph 3.5.3.3

ITEM DESCRIPTION: Quality Assurance Verification of As-Built Core Drilling Locations and Appropriate Inspections for Hydrostatic Floor Seals and Flood Curbs in Safety Related Structures

I. PROBLEM DESCRIPTION

As part of the NRC I&E inspection item concerned with the flooding study of the Chiller Room in the Control Building, the NRC Inspector noted that inspections of the core drilling locations and the curb installation attendant to the flooding analysis were not conducted by Quality Assurance personnel. Since these structures were safety related and since the design features were being incorporated to protect safety related equipment (although not to perform a safety function) the NRC Inspector felt that these items should be reviewed by Quality Assurance personnel. In addition, the Inspector raised a concern that, even though all core drills are pre-approved by Engineering, if these core drillings were not actually installed where Engineering had evaluated their acceptability, the structural integrity of some of the walls could be affected.

II. CAUSE OF THE DISCREPANCY

1. The QA requirements established for core drillings performed after the erection of concrete structures include pre-approval by Engineering, but not post drilling verification of location by FQC since the pre-approval of the location plus the layout of the location by the surveyors provides adequate assurance of proper pre-approved locations. This is true for all core drilling in the plant. Therefore, this situation was in accordance with site procedures although the Inspector's observation was correct; core drillings are not inspected by FQC.

II. CAUSE OF THE DISCREPANCY (Continued)

2. With respect to the dimensional verification of the curb associated with this issue, in this particular case the concrete work was designated as Category II in order to accomplish the work when the normal concrete batch plant was not available. This was acceptable as it does not perform a safety related function or affect the integrity of the safety related structure. Therefore, FQC was not involved in this particular curb installation although, had the concrete curb been designated a safety related structure, they would have been involved. The curb installation was verified by construction personnel as is programatically required by the Construction Site Inspection Program for Non-Safety Related Structures.

3. With respect to the hydrostatic floor seals, this work is designated Category II as in the case of the concrete work covered in 2. above. Therefore, FQC was not involved in the inspection of this work. The curb installation was completed and inspected in accordance with existing site construction practice.

III. SAFETY SIGNIFICANCE

We do not believe there is any safety significance to these issues for the following reasons:

1. The core drillings associated with this finding were later inspected by FQC and found to be installed in the proper location.

2. The curbing was also inspected by FQC and found to be in accordance with the design documents with the exception of one (1) area where the Construction Supervisor utilizing good construction practice increased one (1) dimension by three and one-half (3½) inches in order to insure that the stop log area would have adequate thickness available. This was actually an improvement in the originally specified design and this was verified as being acceptable by Engineering.

3. The hydrostatic floor seals associated with this finding were later inspected by FQC and found to be installed in accordance with the applicable design documents for this installation.

III. SAFETY SIGNIFICANCE (Continued)

4. As noted before in the ASLB proceedings, FQC performed the required concrete testing on this work since all concrete pours have cylinders taken for subsequent verification of strength regardless of their QA Category.

5. The change of Category I concrete workscope to Category II does not degrade the safety of the plant because of the FQC involvement in various phases of concrete work in any case, and because of the adequacy of our normal site construction procedures which document the applicable inspection attributes for the placement of this concrete.

6. The penetrations to Category I concrete structures at Shoreham are properly located because of the following:

   a. For openings designed prior to structure erection, all penetrations (sleeves, blockouts, etc.) are inspected prior to the pouring of concrete by FQC.

   b. For core drillings to existing structures, the locations of all of these holes must be pre-approved by Engineering.

   c. In any critical areas, the concrete is chipped away to avoid rebar cutting. Where core drilling is authorized, rebar may be cut.

   d. The locations of core drillings pre-approved by Engineering are laid out by surveyors to insure proper location prior to Craft being assigned to perform the actual drilling operations.

   e. As a result of this issue, FQC has inspected fifty-eight (58) randomly selected core drillings which were made after the erection of concrete structures and found all of these core drillings to be acceptable. It should be noted that these randomly selected core drillings covered all major structures including the Reactor Building, Radwaste Building and Turbine Building.

IV. GENERIC IMPLICATIONS BEYOND THE SPECIFIC PROBLEM

The only potential generic issues involved in this case are:

1. If core drillings were made in an uncontrolled manner such that their locations would invalidate the Engineering analysis and/or judgement which determine the pre-approved core drilling locations, then a particular concrete structure might not meet its design parameters, or

2. If the fact that a particular concrete structure was not properly designated as safety related (Category I) when it should have been, the lack of an FQC inspection might result in an unsatisfactory field implementation of the required design if the established construction procedures would permit this to happen.

We do not believe that either of these is the case. With respect to item 1.,we believe that the core drillings at Shoreham meet Engineering requirements for the reasons outlined in Section III. of this report. With respect to item 2., we do not believe there are any generic implications since we believe that there was Engineering justification for the change in this particular case. For all non-safety related work, existing construction procedures insure the proper implementation of the design.

V. CORRECTIVE ACTION

As previously noted, the six (6) eight (8)inch core drills associated with this modification were inspected by FQC and found to be acceptable. FQC also inspected the curbing and the hydrostatic floor seals and found the installation to be acceptable as noted. In addition, a review of fifty-eight (58) randomly selected core drillings established that the existing Construction and Engineering programs are properly pre-approving core drill locations and that the field installations are acceptable.

VI. WHEN WOULD THIS FINDING HAVE BEEN UNCOVERED BY LILCO OR S&W?

Since LILCO and S&W believe that the procedures and practices involved in this situation were being properly implemented,

VI. WHEN WOULD THIS FINDING HAVE BEEN UNCOVERED BY LILCO OR S&W? (Continued)

and since all actions were in accordance with existing Engineering, FQC, and Construction procedures, this finding would not have been uncovered by LILCO or S&W. Further, we believe that there would have been no adverse consequences to our not having identified the items identified by the NRC Inspector.

VII. REFERENCES:

1. NRC Inspection Report No. 50-322/82-89