



LONG ISLAND LIGHTING COMPANY

SHOREHAM NUCLEAR POWER STATION

P.O. BOX 604, NORTH COUNTRY ROAD • WADING RIVER, N.Y. 11792

February 25, 1983

SNRC-848

50-322

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

SHOREHAM NUCLEAR POWER STATION - UNIT 1
Construction Permit No. CPPR-95

Dear Mr. Denton:

Pursuant to 10 CFR § 50.55(b), Long Island Lighting Company requests that the Nuclear Regulatory Commission extend the date for completion of the Shoreham Nuclear Power Station, Unit 1, from March 31, 1983 to December 31, 1983.

The schedule extension requested is due to a variety of circumstances, all of which are interrelated and had, to some extent, a compounding effect on the overall schedule. These items are:

1. An overall increase in required material quantities and manhours to complete the project.
2. Expanded scope of Regulatory requirements existing in late 1980 and/or difficulties in completion of these existing Regulatory requirements.
3. New Regulatory requirements (not known in late 1980).
4. Scope additions not due to Regulatory requirements.
5. Magnitude of System modifications (Regulatory and non-Regulatory).
6. Delays in the Startup Program.
7. Delays in material deliveries.

These factors are discussed below:

1. Overall Increase in Material Quantities and Manhour Requirements

Our previous request for a Construction Permit extension was made in November of 1980 and, at that time, a Fuel Load date of May 1982 was projected. Our current projection for Fuel Load is approximately one (1) year later than that estimated in

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November of 1980 (we now project a late second quarter 1983 Fuel Load). Well over four million five hundred thousand (4,500,000+) more manual manhours will have been expended on the Project by the time the Unit loads fuel than was projected by our early 1981 project estimate. To put this into perspective, one million four hundred thousand (1,400,000) feet of additional cable (a thirty-seven (37) percent increase above the quantity estimated in early 1981) have been installed in the Plant. Six hundred (600) more Large Bore pipe supports and two thousand two hundred (2,200) more Small Bore supports have been installed in the Plant than were anticipated by that same early 1981 estimate. These overall figures include some but not all of the items which follow and serve to illustrate the overall magnitude of the increase in material and labor which has actually been required to complete Shoreham as opposed to that which was estimated at the time of our last request for a Construction Permit extension. Four million five hundred thousand (4,500,000) manhours equates to approximately a year on the Shoreham schedule and that is, in fact, the schedule delay we are experiencing when one compares the Fuel Load date estimates of our November 1980 and current requests for Construction Permit extensions.

2. Expanded Scope of Regulatory Requirements Existing in Late 1980 and/or Difficulties in Completion of These Regulatory Required Modifications

a. ASME III Stress Reconciliation Modifications

Final agreement with the NRC on Mark II loads was obtained in late 1981 and the final Stress Reconciliation effort for Shoreham required by the ASME Code and NRC Bulletin 79-14 began in early 1982. The resulting hydrodynamic load changes, the degree of detail to which stress reverification was performed, and the difficulties encountered in resolving the large number of individual stress analyses, all resulted in a much larger impact of Mark II loads than was anticipated at the time of the last Construction Permit extension request. Engineering manpower requirements to complete the Stress Reconciliation were more than double the original estimate and, despite the addition of significant additional resources, the Engineering completion of this effort extended from an original estimate of July 1982 to January 1983. The late issuance of Engineering design documents associated with Stress Reconciliation (predominantly piping and pipe support modifications), coupled with a doubling of the magnitude of the impact (one thousand five hundred (1,500) pipe support additions and modifications, instead of the originally estimated seven hundred (700)), has extended the completion schedule of this major effort to April of 1983. This Stress Reconciliation Program had compounding effects on the Startup Testing Program as some

pipng systems were delayed prior to flushing and pre-operational testing (e.g. the Structural Acceptance Test experienced delays due to the level of pipe support rework in the Primary Containment), and is still having an effect on the turnover of systems to the Plant Staff even though pre-operational testing may be completed, since ASME III certification is required prior to this turnover process. The Stress Reconciliation Program is the largest single contributor to the overall schedule slippage of the Shoreham project.

b. Expansion of or Delays in Completion of Other Pre-Existing Regulatory Required Modifications

A number of other areas in this category have experienced significant delays which were not predictable at the time of our last Construction Permit extension application. Two (2) are discussed below as examples:

b.1 Post Accident Sampling System

A Post Accident Sampling Facility was required as a result of TMI but actual system requirements were far from firm in late 1980. The finalization of system requirements as well as design development delays and difficulties in obtaining equipment compatible with TMI requirements, produced significant delays in this facility. The system has only recently been completed and is under initial checkout and, while not constraining our current schedule (second quarter 1983 Fuel Load), it was significantly delayed beyond the previous May 1982 Fuel Load.

b.2 Regulatory Guide 1.75 Electrical Separation Criteria

As conduit design and installation proceeded in 1981 and early 1982 (the peak design and installation period for Electrical Raceway), the available room for running conduit decreased and the difficulty of maintaining adequate separation increased accordingly. Conduit design and installation became a constraining activity on systems completion and contributed to the delay in the commencement of the Startup Testing Program.

3. Impact of New Regulatory Requirements

A number of Regulatory requirements which were unknown in late 1980 were imposed on Shoreham subsequent to that time, and contributed to the overall stretch-out in Project completion, and in some cases directly to the delay in completion and pre-operational testing of specific Plant systems. The following are examples of these new requirements:

a. Security System

A number of significant modifications to this system since late 1980 have been required as a result of either direct NRC requirements (NRC Inspection Reports of November 1981 and July 1982) as well as modifications developed by LILCO and its consultants to enhance system performance with respect to evolving Regulatory requirements in the Security area. In addition, design modifications to this system have been required as late as February 1983 as a result of ASLB settlement agreements with Suffolk County. These last changes are only now being engineered and will have to be installed in the Plant prior to Fuel Load.

b. Blockwall Modifications

As a result of NRC Bulletin 80-11, there was a structural re-evaluation of all seismic blockwalls in the plant (there are one hundred seven (107) separate blockwalls affected). This re-analysis resulted in steel reinforcing being added to all affected masonry walls at a cost of thirty-five thousand (35,000) manhours, with this work scheduled for completion in early April of this year. This work had to be performed in extremely congested areas, and the installation of the massive steel supports required impeded both Construction and testing work in the areas affected. It is another example of the compounding effect of many of these items.

c. NSSS Circuit Breaker Modifications

Final NRC review of Shoreham's electrical separation resulted in a requirement to add additional circuit breaker protection to a number of circuits on General Electric supplied control panels. These panels are currently in service, and therefore the modifications required will entail electrical outages affecting pre-operational testing and plant surveillance testing activities. The Engineering associated with these modifications has just been completed and the field work is only commencing now.

d. Nitrogen Inerting System

Subsequent to November of 1980, LILCO committed to inert the Primary Containment, and this system, which did not exist at all in Shoreham's design, had to be engineered, procured, and installed since that time. In addition to adding to the overall scope of the Project, the interface requirements of the inerting system with Reactor ventilation and compressed air systems produced a secondary delaying effect on the completion, turnover, and pre-operational testing of those systems.

4. Scope Additions Not Due to Regulatory Requirements

a. Raceway Qualification Program

The Raceway Qualification Program currently ongoing at Shoreham was not conceived of until after the previous Construction Permit extension request. Over two hundred thousand (200,000+) manhours have been allocated to this Program. Its final completion will not be achieved until May of this year due primarily to the extremely detailed nature of the final inspection and as-built documentation requirements. This Program, which we believe is unique in the industry, is designed to provide absolute assurance of the seismic adequacy of the Shoreham conduit and cable tray support systems.

b. Stress Corrosion Reduction Program (IHSC)

In 1981, LILCO decided to perform additional heat treatment of primary piping system welds which could be subject to Inter-Granular Stress Corrosion Cracking (IGSCC). This process was newly developed in Japan at that time. It provides a significant reduction in the probability of IGSCC weld attack. The IHSC process cost over two million (2,000,000+) dollars, and the field implementation of the program extended over a four (4) week period in the summer of 1982. While originally scheduled to have a minimal impact on the overall Construction effort, it actually resulted in a four (4) week delay in the critical Primary Containment schedule. LILCO considers this particular contribution to the delay to be a well spent investment in safety.

5. Miscellaneous System Modifications (Regulatory Required and Non-Regulatory Required)

Numerous system modifications resulting from Regulatory requirements, pre-operational testing findings, and "state-of-the-art" improvements, have been incorporated into the Plant since late 1980. In the last year alone, seventy-one (71) individual design change packages have been generated and have either been incorporated into the Plant already, or are currently in the process of being installed. While not directly quantifiable as a schedule extension, taken as a whole these design changes contributed to the stretch-out of the Construction schedule, to a delay in pre-operational testing, and to a delay in the final turnover of systems to the Plant Staff.

6. Delays in the Startup Testing Program

a. Diesel Generator Testing

Diesel Generator testing has been delayed for a number

of reasons among which are:

- a.1 Replacement Parts.
- a.2 System Modifications to Improve Performance.
- a.3 Completion of Construction Related to Other Systems in the Diesel Generator Rooms.

While these matters have been resolved and the Diesel Generators are now entering their final phase of pre-operational testing, the delays up to this point have resulted in the Diesel Generators currently being the critical Startup path to Fuel Load.

b. Service Water Pumps

The four (4) safety related service water pumps experienced significant corrosion during their first year of operation, and all four (4) pumps required extensive modification. In addition, the replacement of certain materials in the pumps still remains to be completed. This work remains to be accomplished prior to Fuel Load. It should be noted that the original problems have been satisfactorily resolved, and the pumps have now met their performance testing requirements.

c. Radiation Monitoring System

Shoreham's Radiation Monitoring System is a "state-of-the-art" system and experienced numerous "teething" problems in its design, procurement, and testing. Just recently, this system successfully completed its pre-operational test, after slipping over a year beyond its November 1980 projected completion date. System interface modifications resulting from additional TMI (NUREG 0737) radiation monitoring requirements also impacted this system.

7. Delays in Material Deliveries

Material deliveries contributed significantly to the overall delay in the construction of Shoreham in 1981 and 1982, with the most serious impact being in 1981. A number of the items referred to in preceding sections were either partially or wholly attributable to material delays, and, while the impact of any individual item may seem insignificant, in the aggregate the material delivery delays account for a very substantial part of the approximately one (1) year extension in the schedule since late 1980. A number of significant delivery problems are noted below as examples:

a. Electrical Cable

At the time of the last request for a Construction Permit extension, LILCO had identified a shortage in electrical cable as a significant schedule restraining item. Significant delays in the delivery of electrical cable continued throughout 1981 and were only resolved late in that year. The impact of these delays can be seen by referring to section 1 in which we note that one million four hundred thousand (1,400,000) feet of additional cable had to be installed in Shoreham over and above the quantity known in late 1980, and some of this cable was not even identified as being required until mid to late 1981. Electrical cable is especially critical since system testing cannot commence until the operational components are hooked up. Therefore, the overall impact of these delays (individual cable type delays extended for as much as six (6) to nine (9) months) was severe.

b. LPCI Motor Generator Sets

The unique performance requirement of these Regulatory required MG sets resulted in a one (1) year delay in their delivery to the jobsite with an attendant delay not only in the testing of these individual components, but also in the final completion and testing of the LPCI safety injection valves to which these MG sets supply power.

c. Post Accident Sampling System Components

As mentioned previously, the Shoreham PASF is a "state-of-the-art" system with a number of components being delivered well after original schedule requirements called for. For example, the chlorine analyzer for the PASF is still not on site and an alternate type of instrument (an ion chromatograph) is being substituted in its place.

d. Pipe Support Components

In 1981, significant delivery delays were experienced in the area of pipe support components (clamps, struts, snubbers, etc.). Several alternate vendors were employed, along with extensive expediting by Engineering as well as Purchasing Department personnel. These delays decreased the efficiency of the overall effort, and also, in some cases, resulted in system delays until at least a sufficient number of the pipe supports on the system could be installed.

Mr. Harold R. Denton
Re: Construction Permit No. CPPR-95

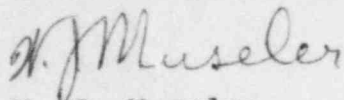
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LILCO's current schedule puts Fuel Load in the latter half of the second quarter of 1983. Accordingly, in order to provide a suitable margin for the completion of Shoreham, LILCO requests that the Construction Permit completion date be extended from March 31, 1983 to December 31, 1983.

In accordance with 10CFR 170.12(c), a check for one thousand two hundred (1,200.00) dollars is enclosed as a fee for this administrative Class II amendment.

Should you have any questions, please contact this office.

Very truly yours,



W. J. Museler
Manager of Construction and Engineering
Shoreham Nuclear Power Station

WJM/mm

cc: J. Higgins
R. Haynes
Parties Listed in Attachment 1

ATTACHMENT 1

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