

U. S. ATOMIC ENERGY COMMISSION
REGION I
DIVISION OF COMPLIANCE

Report of Inspection

CO Report No. 322/70-6

Applicant: Long Island Lighting Company (LILCO)
Shoreham Nuclear Power Station No. 1
Category A (Construction Permit Pending)

Date of Inspection: November 13, 1970

Date of Previous Inspection: May 13, 1970

Inspected by: *D. M. Hunnicutt* 11/25/70
D. M. Hunnicutt, Reactor Inspector (Principal) Date

J. H. Tillou 11-25-70
J. H. Tillou, Reactor Inspector (Construction) Date

Reviewed by: *E. M. Howard* 11-25-70
E. M. Howard, Senior Reactor Inspector Date

Proprietary Information: None

SCOPE

A special announced inspection was made at the LILCO Engineering Offices, Hicksville, Long Island, and at the Shoreham construction site to determine the status of site construction that has been completed by the applicant prior to issuance of a construction permit or an exemption approving specified construction work under the provisions of 10 CFR 50.

SUMMARY

Site excavation has been completed. The de-water pumping system has remained in continuous operation since excavation was commenced. Select fill compaction to elevation -4 feet has been completed. The minimum compaction density was 95% of theoretical, as measured by a Troxler gamma-neutron device and density cones.

A six inch work mat of 2000 psi concrete reinforced with roadway mesh has been placed for the containment building. The surface of this mat is at approximately -2 feet seven inches elevation.

After surface smoothing of the foundation mat, a poly-vinyl-chloride (PVC) water-proof membrane, 0.040 inches thick, has been installed and is estimated to be about 93% completed. The seams in this PVC membrane do not meet strength requirements. The membrane must either be completely replaced or reinforced at the seams to meet applicable strength requirements.

No other work related to nuclear facilities site construction has been performed, as evidenced by site records, and observations made by the inspectors.

DETAILS

A. The principal persons contacted during the inspection included the following:

LILCO

Mr. J. I. Martone, QA Administrator
Mr. F. X. Schoner, Assistant QA Administrator
Mr. Ross Black, Resident QA Engineer (Construction Site)

S&W

Walter E. Moran, Jr., QA Coordinator

B. Records Inspection

1. General

The CO inspectors met with LILCO QA personnel at LILCO's Engineering Offices, Hicksville, Long Island, to discuss the status of site construction. The inspectors reviewed drawings, concrete strength reports, compaction fill descriptions and density measurements and PVC strength measurements.

2. Drawings

The approximate area outlined on Drawing No. M-10826-1 was excavated to elevation -12 feet using mean sea level as datum. This area was then refilled and compacted to an elevation of approximately -4 feet.

3. Compaction Records

Compaction records indicate that the excavation was refilled to approximately -4 feet elevation in six inch lifts and a minimum density of 95% of theoretical density was maintained. Compaction density was determined using a Troxler gamma-neutron instrument and by cone removals for physical measurements. The compacted sand was overlaid with broken stone compacted to ~~95~~95% of theoretical density to approximately -3 feet elevation.

4. De-watering System

LILCO records indicate that the de-watering system has been continuously operated to assure that the water level is maintained below the -12 foot elevation.

5. Foundation Mat

LILCO records indicate that on October 7 and 8, 1970, a six inch thick concrete work mat, reinforced with roadway mesh, for the reactor building was poured within an 87 foot radius circle. The surface of this mat is at approximately -2 feet seven inches. LILCO records indicate that the minimum compressive strength of the test cylinders was 2020 psi at 28 days.

6. PVC Membrane

LILCO records indicate that after the concrete surface was smoothed, a PVC membrane, 0.040 inches thick, has been installed over approximately 93% of the concrete surface area on the inside of the twelve inch high concrete curb. The seams of this PVC membrane do not meet strength requirements. Mr. Martone stated that the PVC membrane will either be completely replaced or reinforced at the seams to meet applicable strength requirements.

7. Other Work

LILCO records and observations made by the inspectors at the construction site indicate that no other work related to nuclear facilities site construction has been performed as of November 13, 1970.