U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report No. 50-373/82-56(DETP)

Docket No. 50-373 License No. NPF-11

Licensee: Commonwealth Edison Company
Post Office Box 767
Chicago, IL 60690

Facility Name: LaSalle County Station, Unit 1

Inspection At: LaSalle Site, Seneca, IL

Inspection Conducted: December 7-9, 1982

Inspector: D. E. Miller 12/22/82

Approved By: L. R. Greger, Chief 12/22/82
Facilities Radiation
Protection Section

Inspection Summary

Inspection on December 7-9, 1982 (Report No. 50-373/82-56(DETP)
Areas Inspected: Routine, unannounced inspection of the radiation protection program, including: startup radiation surveys; procedure changes; organization changes; and a previous unresolved item concerning a contracted review of the rad/chem department organizational structure. The inspection involved 26 inspector-hours onsite by one NRC inspector.
Results: No items of noncompliance or deviations were identified.

DETAILS

1. Persons Contacted

L. Aldrich, Health Physicist
*R. Bishop, Assistant Superintendent, Administrative and Support Services
L. Bryant, Engineering Assistant, Health Physics
F. Lawless, Rad/Chem Supervisor
*J. Lewis, Health Physics Coordinator
B. Nelson, ALARA Coordinator

W. Guldemond, Senior Resident Inspector, NRC

The inspector also contacted several health physicists and rad/chem foremen and technicians during the inspection.

*Denotes those present at the exit meeting.

2. General

This inspection, which began at 8:30 a.m. on December 7, 1982, was conducted to examine the radiation protection program during startup. The inspection included startup radiation surveys, procedure changes, organizational changes, and a contracted review of the rad/chem department's organizational structure.

The inspector performed direct radiation surveys in the auxiliary and turbine buildings, and reviewed adequacy of radiological postings and access controls. No significant problems were identified.

3. Organization

The following rad/chem related organizational changes have recently been made:

a. C. Nash, Chemist, has terminated employment with CECo.

b. J. Nurrenbern, Health Physicist, previously on loan from Dresden Station, was permanently assigned to LaSalle County Station (LSCS).

c. W. Eisele, recent MS radiological health graduate, has been hired as a Health Physicist.

d. D. Hieggelke, former trainer in the LSCS training department, has been promoted to Health Physicist in the rad/chem department.

The licensee is seeking a replacement for the vacant chemist position. Additional changes and vacancies are discussed in Section 4 below.

4. Unresolved Item

(Closed) Unresolved Item (373/81-04-04): Concerning possible separation of rad/chem technicians (RCT) into separate chemistry and radiation protection groups. The licensee had committed to implement appropriate changes, based on final recommendations of a contracted study to be performed by Science Applications, Inc. (SAI).

The report of the contracted study, dated March 3, 1982, was sent to the Director, Office of Nuclear Reactor Regulation (NRR) on July 2, 1982. A second letter to NRR, dated October 14, 1982, describes implemented and proposed changes to the station's rad/chem organization, including the matters discussed in the SAI study. Separation of RCTs into separate chemistry and radiation protection groups was not recommended in the SAI study, nor did the licensee propose such a change. Instead, the licensee has intensified training and retraining, and intends to provide closer supervision of RCTs by rad/chem foremen.

In response to specific matters discussed in the SAI study, and CECo's proposed implementation schedule, the licensee:

a. Has dedicated one rad/chem foreman to chemistry supervision on day shift five days a week.

b. Plans to have round-the-clock health physics supervision by rad/chem foremen by the end of 1983.

c. Has altered the rad/chem department's organizational structure. The rad/chem foremen assigned to health physics now report to the health physics coordinator and the rad/chem foreman assigned to chemistry reports to the lead chemist.

d. Plans to add additional engineering assistants and clerical staff to relieve the professional and foreman staff of excessive administrative duties. There is no firmly established completion date.

The inspector will review progress made in completing Items 4.b and 4.d during future inspections.

5. Radiation Protection Procedures

The inspector reviewed the following new or recently revised radiation protection procedures. They appear to be compatible with regulatory requirements and FSAR commitments.

LRP 1120-2	Revision 0	High Radiation Area Access Control
LRP 1240-6	Revision 0	Calibration of Eberline Models RO-3 and RO-3A Ion Chamber Survey Meters
LRP 1240-7	Revision 0	Calibration Check and Daily Performance Check of the IRT Portal Monitor
LRP 1270-2	Revision 2	Radiation Protection Instrumentation Test and Calibration

LRP 1340-6	Revision 1	Stand Up Whole Body Counting Routine Operations
LRP 1350-20	Revision 0	The Start-Up and Operation of the Single Channel Continuous Air Monitor
LRP 1350-21	Revision 0	The Start-Up and Operation of the Dual-Channel Constant Air Monitor
LRP 1360-7	Revision 0	Sampling Containment Air for Vent and Purge
LRP 1520-2	Revision 3	Receipt of Radioactive Materials
LRP 1820-11	Revision 1	Radioactive Gas Calibration of the PING-3 Low and Mid Range Noble Gas Detectors
LRP 2100-10	Revision 0	Purging the Reactor Head of Radiolytic Gases During Head Removal

The inspector found that the following procedure needed major revision to correct errors made in computing expected body burdens. The licensee stated that the procedure would be revised. The inspector will review the revised procedure during a future inspection.

LRP 1340-10	Revision 0	Determination of MPC-Hours from Whole Body Counting Data - Acute Exposure

6. Startup Radiation Surveys

a. Surveys Performed

The inspector reviewed startup radiation surveys that were performed before fuel load, before initial criticality, during heatup, at about 10 percent power, and at about 30 percent power. These surveys, made in accordance with Procedure STP-2 "Radiation Measurements," were performed at about 300 preselected identified points, and in additional selected areas to determine if any shielding abnormalities exist. Gamma measurements were made at all locations; neutron measurements were made where neutron fields were possible. Neutron field measurements were made with both dose equivalent rate and count rate instruments.

Further surveys will be performed by the licensee at about 60 and 95 percent power.

b. Survey Results

While performing surveys in the drywell during heatup (about 50 megawatt thermal), the licensee found that four reactor vessel instrumentation penetrations on the 788-foot level were not shielded as well as expected. The maximum radiation level near one penetration was about 800 mrem/hr gamma and 800 mrem/hr neutron. Neutron and gamma radiation intensities and the neutron/gamma ratio were found to vary greatly throughout the drywell, as expected. According to the licensee, it is difficult to determine the fraction of the gamma and neutron dose throughout the drywell that is caused by the insufficient shielding of the four instrumentation thimbles. However, since the licensee plans to make occasional entry into the drywell below five percent power, additional shielding of the instrumentation penetration is planned. Shielding is discussed in Section 6.c below.

While performing the 10 and 30 percent power surveys in the reactor building several drywell instrumentation penetrations, also at the 788-foot level, were found to lack sufficient shielding. The maximum radiation level measured near one penetration was about 10 mrem/hr gamma and 30 mrem/hr neutron. Plans for additional shielding is discussed in Section 6.c below.

No other significant abnormalities were identified by the licensee while performing the surveys.

c. Proposed Additional Shielding

According to licensee personnel, several discussions have been held between CECo and Sargent and Lundy concerning the need for additional shielding in several drywell and reactor building instrumentation penetrations. During a meeting held at LaSalle County Station on November 19, 1982, a decision was made to design and install additional shielding. No completion date has been established.

d. Proposed Technical Investigation

The licensee has funded a technical investigation to be performed onsite by Battelle-Northwest within the next few months. The investigation is to: determine the neutron energy spectra in areas that may be entered during operations; evaluate response of various portable neutron survey instruments and neutron dosimetry in these areas; and recommend appropriate instrumentation, dosimetry, and correction factors to ensure that neutron exposure is adequately detected and accounted for.

No items of noncompliance were identified. Further reviews of surveys, shielding installation, and the neutron technical investigation will be performed during future inspections.

7. Snubbers

In inspection report 373/81-44, a region based inspector discussed the need to review possible replacement of several snubbers with rigid restraints. The inspector pointed out that use of snubbers where rigid supports are adequate is counter to the ALARA concept because of requirements for future visual inspection and functional testing of snubbers.

This matter was further addressed in inspection report 373/82-15, where the inspector noted that 370 snubbers had been replaced with rigid restraints and that several more had been identified and would be replaced before fuel load. The inspector also noted that the licensee had committed to evaluate the thermal movement of all snubbers, before the first refueling outage, and replace any unnecessary snubbers with rigid supports during the first refueling outage. This matter remained unresolved (373/82-15-01). This matter has since become a condition to the LaSalle County Station, Unit 1, operating license. Section 2.C.(4) of the License(NPF-11)states that prior to startup after the first refueling outage the licensee shall remove snubbers that are determined to be unnecessary and replace them with rigid strut and rod assemblies.

During this inspection, the inspector verified that snubber evaluation is being performed by a contractor's design engineering staff. The inspector found that the ALARA Coordinator was not directly involved in the review, but will participate in planning for physical replacement of the snubbers. This matter will be further reviewed during future inspections.

No items of noncompliance or deviations were noted.

8. Exit Meeting

The inspector met with licensee representatives (denoted in Section 1) at the conclusion of the inspection on December 9, 1982. Discussed were the scope and findings of the inspection. In response to a matter discussed, the licensee stated that procedure LRP 1340-10 would be revised as necessary. (Section 5)