U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Report Nos. 50-373/92029(DRSS): 50-374/92029(DRSS)

Docket Nos. 50-373: 50-374

License Nos. NPF-37; NPF-66

Licensee: Commonwealth Edison Company 1400 Opus Place Downers Grove, IL 60515

Facility Name: LaSalle Nuclear Generating Station, Units 1 and 2

Inspection At: LaSalle Site, Marseilles, Illinois

Inspection Conducted: December 16 through 21, 1992

Inspector:

D. House

12/31/92 Date 12/31/92

1 Kozak Approved by: William Snell, Chief

Radiological Controls Section 2

Inspection Summary

Inspection on December 16-21, 1992 (Report Nos. 50 373/92029(DRSS); 50-374/92029(DRSS))

Areas Inspected: Routine, announced inspection of the chemistry program (IP 84750) including: chemistry comparisons, audits, quality assurance, and the radiological environmental monitoring program (REMP).

Results: Licensee performance in the chemistry comparison program was excellent with the laboratory achieving all agreements in 29 comparisons. The quality assurance program was functioning well as evidenced by participation in two interlaboratory comparison programs which is a strength; performance in these programs was very good. The QV audit of chemistry was well written, detailed and demonstrated the auditors knowledge of chemistry laboratory operations. Site management of the Radiological Environmental Monitoring Program (REMP) appeared to be good. No violations or deviations were identified.

DETAILS

1. Persons Contacted

- *J. Arnould, OPEX Administration
 *D. Carlson, Regulatory Assurance
 *G. Diederich, Site Vice-President (Acting)
 *J. Houston, Emergency Planning Coordinator
 *W. Huntington, Technical Superintendent
 *K. Kociuba, Safeiy Quality Verification Superintendent
 J. Miller, Technical Staff
 *P. Nottingham, Chemistry Services Supervisor
 *R. Ragan, Administrative Engineer
 *J. Schmeitz, Station Manager (Acting)
 *J. Schuster, Lead Chemist
 J. Thean, Quality Verification Inspector
 R. Whitley Analytical Chemist
- R. Whitley, Analytical Chemist *J. Roman, Illinois Department of Nuclear Safety

*Present at the Exit Meeting on December 21, 1992

2. Water Chemistry Control Program (IP 84750)

The licensee's water chemistry control program was similar to that described in Region III Inspection Reports No. 50-373/91027; 50-374/91028. A review of selected trend chart data from the previous 12 months indicated that chemistry parameters were within the EPRI guidelines. Reactor water chloride, sulfate and conductivity levels averaged less than 1 ppb, 5 ppb, and 0.18 micro Siemen per centimeter (uS/cm), with EPRI guidelines of 15 ppb, 15 ppb and 0.2 uS/cm respectively. Silica levels were less than the EPRI achievable level of 100 ppb. Feedwater parameters were good with conductivity averaging 0.06 uS/cm, dissolved oxygen averaged less than 60 ppb and iron averaged 4 ppb with EPRI guidelines 0.07 uS/cm, 200 ppb, and 5 ppb respectively.

The inspector reviewed the Technical Specification (T/S) 4.1.5 requirements for boron concentration and volume in the standby liquid control tanks. Both concentration and volume were within the window for each tank. Required analyses of the boron-10 isotope, which is now used to provide increased negative reactivity, had been performed and the necessary B-10 concentration was met.

No violations or deviations were identified.

3. Chemistry Comparison Program (IP 84750)

The inspector submitted chemistry samples to the licensee for analysis as part of a program to evaluate the laboratory's capabilities to monitor nonradiological chemistry parameters in various plant systems with respect to regulatory and administrative requirements. These samples had been prepared and standardized for the NRC by the Analytical Chemistry Division of Oak Ridge National Laboratory (ORNL). The samples were analyzed by the licensee using routine methods and equipment.

Three dilutions were prepared from each sample by licensee personnel in order to bring the concentrations within the ranges normally analyzed by the laboratory. A single analysis was performed on each dilution in a manner similar to that of routine samples. The results are presented in Table I which also contains the criteria for agreement. These criteria are based on ORNL analyses of the standards and on the relative standard deviations (RSD) derived from the results of the plants participating in a 1986 interlaboratory comparison (Table 2.1, NUREG/CR-5442). The acceptance criteria were that the licensee's value should be within 2 Standard Deviations (SD) of the ORNL value for agreement and between 2 and 3 SD for qualified agreement. A qualified agreement may indicate a bias in the assay.

The licensee analyzed nine unknowns at three concentrations and one at two concentrations; all 29 comparisons were agreements. Initially the three sodium analyses were disagreements (not shown). However this problem was traced to a matrix mismatch. The licensee's calibrator solutions were prepared in deionized water and the unknowns had been acidified by ORNL. When the instrument was recalibrated with standards prepared in an acid matrix similar to that of the unknowns, the analytical results were agreements. Licensee performance in the chemistry comparison program was excellent.

No violations or deviations were identified.

<u>Chemistry Quality Assurance/Quality Control (IP 84750)</u>

The licensee's chemistry quality assurance program was defined by the Chemistry Quality Control Program Manual for Analytical and Radiochemistry Laboratories, Revision 11, November 13, 1992. The licensee has multiple point calibration curves, independent controls and control charts which are maintained in a computer data base. The mean value along with ±2 standard deviations (S.D.) were plotted on the control charts. A review of selected charts from the past year did not reveal any significant biases.

The technician testing program is conducted at the Production Training Center (PTC) by PTC personnel. A few assays must be performed at the site due to unique instrumentation that the PTC does not have. Acceptance criteria is based on INPO standards and technicians whose results were outside of the criteria were retested. An evaluation of the technician analysis data had been prepared for chemistry management by the PTC. All technicians had been tested as required. This program appeared to be operating well.

The licensee participated in two interlaboratory comparison programs; one was vendor supplied and the other was supplied by the corporate chemistry group. Results for the past year were very good. The licensee achieved 74 agreements in 78 analyses (95%) in the corporate

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program. Using NRC acceptance criteria, 14 of the 15 analyses in the vendor supplied program would be agreements. One analysis, iron recovery, had a positive bias of 38%. The licensee's investigation of this indicated that a likely cause of the bias was contamination. The licensee's quality assurance program appeared to be well managed.

No violations or deviations were identified.

5. Audits (IP 84750)

Quality Verification Audit Report 01-92-11 of the chemistry program, conducted February 3-18, 1992, focused on technician performance in obtaining plant samples, preparation and analysis of samples and performing required quality control procedures. Calculations were verified by the audit team and instrument set up parameters were reviewed for accuracy. The auditors also observed technician adierence to procedures. The audit report was well written, detailed and demonstrated that the audit team was very knowledgeable of chemistry operations.

Quality Verification Surveillance QAS 01-92-002 conducted May 7-14, 1992 and Audit Report 01-92-13 conducted July 1992, reviewed the Radiological Environmental Monitoring Program (REMP) operation and vendor performance in sample collection. Auditors accompanied the vendor during sample collection, verified that required samples were obtained and that vendor procedures were followed. Sample records were reviewed for completeness. These audits were performance based and well documented. Performance of the Quality Verification group represents a strength for the station.

No violations or deviations were identified.

6. Radiological Environmental Monitoring Program (IP 84750)

The inspector reviewed the Radiological Environmental Monitoring Program (REMP) including the 1991 Annual Environmental Report which appeared to comply with the REMP requirements. All of the required samples were collected and analyzed, except as noted in the report.

The inspector toured selected air sampling stations with the station GSEP coordinator who is also responsible for monitoring the REMP. The air sampling stations had folders containing monthly field calibration documentation and the equipment was in good operating condition. Monthly field calibration records for all samplers were reviewed along with the annual air pump calibrations and the quarterly calibration records of the field flowmeters used in the monthly calibrations. The REMP manager stated that he accompanied the vendor sample collector twice per year and the Quality Verification (QV) group accompanied the vendor on an annual basis. The inspector noted to the REMP manager that accompanying the vendor quarterly for those samples collected on a weekly basis and during the land use census would provide stronger vendor oversight. The licensee agreed to consider this. The contractor provided station personnel with copies of sample collection and equipment maintenance records which were reviewed by the REMP manager. The REMP appeared to be operating well.

No violations or deviations were identified.

8. Exit interview

The scope and findings of the inspection were reviewed with licensee representatives (Section 1) at the conclusion of the inspection on December 21, 1992. The inspector discussed licensee performance in the chemistry comparison program along with observations on the chemistry quality assurance program, audits and oversight of the REMP. During the exit interview, the inspector discussed the likely informational content of the inspection report with regard to documents or processes reviewed during the inspection. Licensee representatives did not identify any such documents or processes as proprietary.

Attachment: Table 1, Chemistry Comparison Results 4th Quarter 1992

	TABLE 1	
Chemistr	y Comparison	Results
LaSalle Nuc	lear Generat	ing Station
Dece	mber 16-21,	1992

Analyte	Met	hod ¹ C	Conc ²	Ratio ³	Acceptance Ranges ⁴ Result ⁵		
					± 2RSD	± 3RSD	
	provide literature age		ppb			ne sone av en an	
Fluoride	A B C	IC	2 4 8	1.074 1.020 0.937	0.875-1.125 0.875-1.125 0.875-1.125	0.813-1.187 0.813-1.187 0.813-1.187	A A A
Chloride	A B C	IC	2 4 8	1.016 1.083 0.983	0.933-1.067 0.917-1.081 0.926-1.074	0.900-1.100 0.879-1.121 0.895-1.105	A A+ A
Sulfate	A B C	IC	2 4 8	1.015 1.005 0.967	0.895-1.105 0.895-1.105 0.900-1.100	0.842-1.158 0.868-1.132 0.867-1.133	A A A
Iron	G H I	DCP	1000 4000 8000	0.980 0.990 0.995	0.904-1.096 0.903-1.097 0.903-1.097	0.854-1.146 0.857-1.143 0.855-1.145	A A A
Copper	G H I	DCP	1000 4000 8000	1.000 1.007 1.005	0.904-1.095 0.904-1.096 0.904-1.096	0.859-1.141 0.857-1.143 0.857-1.143	A A A
Nickel	G H I	DCP	1000 4000 8000	1.020 1.015 1.016	0.936-1.064 0.938-1.062 0.938-1.062	0.906-1.094 0.908-1.092 0.907-1.093	A A A
Chromium	G H I	DCP	1000 4000 8000	0.985 0.985 0.985	0.905-1.095 0.903-1.097 0.903-1.097	0.855-1.145 0.854-1.146 0.853-1.147	A A A
Sodium	J K L	IC	5 10 15	0.887 0.964 0.968	0.863-1.137 0.859-1.141 0.862-1.138	0.784-1.216 0.788-1.121 0.789-1.211	A A A
Silica	T U	Spec	30 60	0.980 1.036	0.906-1.094 0.909-1.091	0.859-1.141 0.860-1.136	A A
			ppm				
Boron	D E F	Titr	1000 3000 5000	0.993 1.006 1.000	0.979-1.021 0.979-1.021 0.979-1.021	0.968-1.032 0.968-1.032 0.968-1.032	A A A

- 2. Conc: Approximate concentration analyzed.
- 3. Ratio of Licensee mean value to NRC mean value.
- 4. The standard deviation (SD) in the sixth and seventh columns represents the coefficient of variation obtained from averaging licensee data from the preceding cycle (Table 2.1 of NUREG/CR-5244). A result is considered to be in agreement if it falls within the \pm 2 SD range; a qualified agreement if it lies outside \pm 2 SD, but within \pm 3 SD; and in disagreement if it is outside the \pm 3 SD range.
- 5. Result:
 - A = Agreement: Licensee value is within ±2 SDs of the NRC mean value.
 - A+ = Qualified agreement, licensee is between \pm 2 and \pm 3 SDs of the NRC value.
 - D = Disagreement: licensee value is outside ± 3 SDs.