

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-382/84-18

Construction Permit: CPPR-103

Docket: 50-382

Licensee: Louisiana Power & Light Company (LP&L)  
142 Delaronde Street  
New Orleans, Louisiana 70174

Facility Name: Waterford 3 (WF-3)

Inspection At: Taft, Louisiana

Inspection Conducted: April 23-27, 1984

Inspector: Blaine Murray 5/19/84  
for R. E. Baer, Radiation Specialist Date

Approved: Blaine Murray 5/19/84  
Blaine Murray, Chief, Facilities Radiation Date  
Protection Section

Richard L. Smith 5/30/84  
W. A. Crossman, Task Leader, Region IV Task Force Date

Inspection Summary

Inspection Conducted April 23-27, 1984 (Report 50-382/84-18)

Areas Inspected: Routine, unannounced inspection of the licensee's radioactive waste (radwaste) program and transportation activities including: organization, training and qualifications, solid waste system, liquid waste system, gaseous waste system, air cleaning system, instrumentation, audits and reviews, transportation activities, and procedures. The inspection involved 44 inspector-hours onsite by one NRC inspector.

Results: Within the ten areas inspected, no violations or deviations were identified.

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DETAILS

1. Persons Contacted

LP&L

\*R. P. Barkhurst, Plant Manager  
\*S. A. Alleman, Assistant Plant Manager  
R. E. Allen, Plant Chemist  
D. P. Clark, Operations Training Supervisor  
\*K. W. Cook, Nuclear Support and Licensing Manager  
R. A. Cornell, Nuclear Safety  
J. J. Denkevitz, Senior Quality Assurance (QA) Representative  
\*B. F. Duncan, Plant Startup Manager  
\*D. V. Gallodoro, Systems Engineering  
O. D. Hayes, Operations Superintendent-Nuclear  
D. W. Herrin, Licensing Engineer  
\*R. W. Kenning, Radiation Protection Superintendent  
D. A. Landeche, ALARA Coordinator  
J. F. McMahon, Instructor, Nonlicensed Operators  
\*P. V. Prasankumar, Technical Support Superintendent  
\*D. M. Rieder, Radwaste Associates Engineer  
\*A. R. Roberts, Operations QA, Associate Engineer  
\*P. J. Schlesinger, Plant Engineering  
\*L. R. Simon, Radwaste Engineer  
\*D. T. Simpson, Technical Training Superintendent  
\*W. D. Simpson, Startup Engineer  
\*J. K. Somsel, Licensing Supervisor  
D. Stevens, Radwaste Engineering Technician  
N. A. Vitale, QA Engineer  
\*J. Woods, Plant Quality Control Manager

Others

\*G. L. Constable, Senior Resident Inspector, USNRC  
\*W. A. Crossman, Task Leader, Region IV Task Force  
J. Judge, Startup Engineer, Charles Moore & Associates (CM&A)  
J. R. Reiter, Startup Engineer, CM&A  
H. Story, Startup Engineer, CM&A

The NRC inspector also interviewed several other licensee and contractor employees including radiation protection, operations, construction, and maintenance personnel.

\*Denotes those individuals present during the exit interview on April 27, 1984.

2. Licensee Action on Previous Inspection Findings

(Closed) Open Item (382/8211-05): Liquid Waste Management - This item involved the lack of preoperational test procedures, completion of

preoperational test, correction of identified problem areas, and Inspection and Enforcement (IE) Bulletin 80-10 review and sampling schedule. The licensee had developed procedures and completed preoperational testing on the three subsystems which make up the liquid waste management system. The licensee had also made modifications or responded as to why changes were not made on the identified potential problem areas in the TERA Corporation ALARA review; Ebasco Services, Inc., performed a review of nonradioactive plant systems which interface with radioactive plant systems and the licensee developed a sampling schedule for those systems which had been identified where the potential for cross contamination existed. This item is considered closed.

(Closed) Open Item (382/8211-06): Gaseous Waste Management - This item involved the lack of preoperational test procedures, completion of preoperational test, correction of identified problem areas, and IE Bulletin 80-10 review and sampling schedule. The licensee had developed Procedure SPO-55A-001 and completed the preoperational test on the gaseous waste management system. The licensee had also made the recommended modifications or responded in Memorandum W3H84-0028 as to why modifications were not made on TERA Corporation identified potential problem areas; the Ebasco Services, Inc., review also addressed the gaseous and air systems in the plant. This item is considered closed.

(Closed) Open Item (382/8211-08): Solid Waste Management - This item involved the lack of preoperational test procedures, completion of preoperational test, correction of identified potential problem areas, and completion of the radwaste storage area. The licensee had developed procedures and performed the preoperational testing on the three subsystems which make up this solid radwaste management system. The spent resin system was redesigned and a solid waste solidification building and waste compaction and storage building were constructed. This item is considered closed.

(Closed) Open Item (382/8322-01): Auxiliary Operator Radwaste Training - This item involved the lack of training modules, qualification cards, and completion of nuclear auxiliary operator (NAO) training on radwaste systems. The licensee had developed the training modules and qualification cards for gaseous, liquid, and solid radwaste systems; and 25 NAOs completed training and qualified in all systems. This item is considered closed.

(Closed) Open Item (382/8322-03): Solid Radwaste System ALARA Review - This item involved the lack of an ALARA review of the as-built solid radwaste system to the recommendations of ANSI Standard 55.1-1979. The licensee had an ALARA review performed on the original solid radwaste system by TERA Corporation and performed an in-house ALARA review on the modified spent resin system, waste compactor building, and solidification and interim radwaste storage area against the recommendations contained in ANSI Standard 55.1-1979. This item is considered closed.



(Closed) Open Item (382/8116-07): Trash Compactor and Storage of Filled Drums - This item involved the location of the trash compactor, storage of filled drums, space for trash awaiting compaction, and the viewing of the drumming operation from the control panel. The licensee had built a new facility to house a new box compactor, had provided for the sorting and storage of waste awaiting compaction, and had provided for storage of filled steel boxes. This item is considered closed.

3. Radwaste Organization and Management Control

The NRC inspector examined the licensee's onsite organization regarding radwaste management to determine compliance with the Final Safety Analysis Report (FSAR) commitments.

The NRC inspector verified that the organization and management controls of the onsite radwaste organization were as depicted in the FSAR, Figure 13.1-5, Amendment 34. The current organization, as described in NRC Inspection Report 50-382/84-04, had vacancies for two technicians and two radwaste helpers. The licensee had two individuals selected for the radwaste helper positions. They were being processed through the psychological drug-use screening the licensee performs for all employees.

No violations or deviations were identified.

4. Radwaste Training and Qualifications

The NRC inspector reviewed the training and qualification program for radwaste personnel, operations, and training instructors.

The NRC inspector discussed with licensee representatives the status of training for radwaste workers. This licensee had completed training for all radwaste department personnel. New personnel, when hired, will be given the same training that present employees have received.

The NRC inspector reviewed the training of NAOs. The licensee had completed training of 25 NAOs in all three radwaste systems (liquid, gaseous, and solid), which includes spent resin and waste concentrate systems. These individuals had also completed system qualification examinations that test the individual's knowledge of the system and inter-relationship with other plant systems and a practical factors test that requires operation of the system. The licensee had hired ten additional NAOs. These individuals will be trained in radwaste systems during the normal retraining schedule.

The NRC inspector discussed with licensee representatives the shift complement for NAOs. The licensee stated that four NAOs are required for each shift and two of these will be qualified for radwaste system operations and that new hired NAOs will not be assigned to radwaste system operations until they have been qualified for system operation.

No violations or deviations were identified.

5. Solid Waste Management

The NRC inspector reviewed the solid radwaste management system including the spent resin system and dry active waste system to determine compliance with FSAR commitments and the recommendations of ANSI/ANS Standard 55.1-1979.

The licensee had completed construction and installation of all fixed equipment, preoperational testing, and ALARA reviews of the solid waste management system. The licensee had contracted for a portable solidification system which was due to arrive onsite during the month of May 1984.

The NRC inspector reviewed a memorandum (W3H84-0028) dated February 29, 1984, from D. Landeche, which addressed the ALARA review performed by an independent contractor (TERA) and listed potential problem areas in the radwaste management systems. This memorandum provided responses to all identified items and indicated the corrective actions taken by the licensee. Those items not corrected were justified by the licensee.

No violations or deviations were identified.

6. Liquid Waste Management

The NRC inspector reviewed the licensee's liquid waste management system to determine compliance with FSAR commitments; the recommendations of ANSI Standards N13.10-1974, 55.6-1979, and N323-1974; and IE Bulletin 80-10.

The NRC inspector reviewed Preoperational Test Procedure SPO-55B-001, "Liquid Waste Management," Revision 1, January 20, 1984. The results of this test were approved by the licensee's joint test group on April 17, 1984. The NRC inspector noted that the licensee had identified a minor vibration on the containment drain sump pumps inboard bearing. The licensee determined that this would not effect the normal operation of these pumps.

The NRC inspector discussed with licensee representatives the results of IE Bulletin 80-10, reviews performed by Ebasco Services, Inc., and the licensee's chemistry department. The Ebasco evaluation took into consideration check valves in system piping as a positive control to prevent cross contamination. The NRC inspector cautioned the licensee that check valves are not positive controls. There have been reported incidents of check valve failures, and those systems dependent on these valves should also be periodically sampled. The licensee stated they would take this under advisement and would review the sampling program. The licensee had established procedures for periodic sampling of systems in which the possibility for contamination existed.

The NRC inspector reviewed the licensee's responses in Memorandum W3H84-0028 to the TERA ALARA review on the liquid waste system identified potential problem areas. The licensee had addressed all identified potential problem areas and corrective action had been taken on some. Others, that the licensee did not consider a significant problem, are being deferred until additional operational data (e.g., radiation levels, number of valve operations, and frequency of access) are determined.

The NRC inspector noted that the licensee had not performed an ALARA review of the liquid waste system. See paragraph 7 for additional details.

No violations or deviations were identified.

7. Gaseous Waste Management

The NRC inspector reviewed the licensee's gaseous waste management system to determine compliance with FSAR commitments and the recommendations of ANSI Standards N13.1-1969, N13.10-1974, 55.4-1979, and N323-1978; Regulatory Guides 1.21, 1.97, and 1.143; and IE Bulletin 80-10.

The NRC inspector reviewed IE Bulletin 80-10 evaluation responses for air and gaseous systems. The NRC inspector noted the same concern expressed in paragraph 6 of this report to the licensee regarding this reliance on check valves as a positive means to control cross contamination of systems. The licensee stated these systems would also be reviewed for periodic sampling.

The NRC inspector reviewed portions of Memorandum W3H84-0028 (see paragraph 5), which pertained to the gaseous waste management system. The licensee had responded to all identified potential problem areas denoting the corrective actions taken to some items and others, which require additional operational data, will be monitored during plant operation.

The NRC inspector noted that the licensee had not performed an ALARA review of the liquid and gaseous waste systems as discussed in Open Item 382/8322-02. The licensee had contacted the independent contractor who performed an ALARA review of the radwaste system in 1982 to determine whether ANSI Standards 55.4-1979 and 55.6-1979 were included in the 1982 review.

The licensee's objections to performing this ALARA review against these standards were that the standards were issued after plant construction was started, they had not committed in the FSAR to the standards, and that the NRC would require the licensee to upgrade any identified deficiency. The NRC inspector stated that the intent was not to require the licensee to upgrade the system rather to identify those areas where additional attention should be directed during the pre-operational phase before radiation levels develop from routine operations.



Open Item 382/8322-02 remains open pending the performance of an ALARA review on the gaseous and liquid radwaste system. This item is considered critical and needs to be completed prior to fuel load.

No violations or deviations were identified.

8. Air Cleaning Systems

The NRC inspector reviewed the licensee's air cleaning systems to determine compliance with FSAR commitments, the recommendations of ANSI Standards N509-1980 and N510-1980, and Regulatory Guides 1.140 and 1.52.

The licensee had taken random samples of the charcoal stored onsite and sent them to Nuclear Consulting Services, Inc. (NUCON) for laboratory analysis to determine the methyl and elemental iodine removal efficiency. The NRC inspector reviewed the test data results provided by the licensee. The NRC inspector noted that the samples were numbered one through ten, but did not identify the adsorbent manufacturer, type of adsorbent, adsorbent lot, and batch number. The test results indicated that Sample 6 failed the 30 degree centigrade and 95 percent relative humidity test and Sample 2 failed the 130 degree centigrade and 95 percent relative humidity test for methyl iodine. The test results furnished indicated the 180 degree centigrade test of elemental iodine on a composite sample of the 10 samples was acceptable.

The NRC inspector expressed concern that when the licensee found several open containers of charcoal in the warehouse, the licensee did not sample all containers and performance test this charcoal. The licensee could not determine when the containers were opened and if they had all been opened at the same time. The licensee stated that when the filter trays were loaded a representative sample would be taken from each container and a sample of these would be performance tested.

The NRC inspector reviewed the qualifications of NUCON personnel performing the duct and housing leak test and in-place filter and charcoal filter testing, the contractor's test procedures, and calibrations of test equipment being used to perform this testing. The NRC inspector noted that several of the testing instruments were due for recalibration in early May 1984. This was discussed with licensee representatives.

The NRC inspector discussed with licensee representatives the status of air cleaning systems. The licensee stated that the airborne radioactivity removal system and reactor auxiliary building normal heating ventilation and air conditioning systems may not be loaded with filters and charcoal prior to the start of fuel loading. The NRC inspector stated the licensee had committed to test all filter systems in the FSAR, Chapter 14, to support fuel load and it would be necessary to request a variance from the office of Nuclear Reactor Regulation for these systems.

Open Item 382/8211-09 remains open pending the preoperational testing of all FSAR committed air cleaning systems and considered critical with completion prior to fuel load.

No violations or deviations were identified.

9. Instrumentation

The NRC inspector reviewed the licensee's in-plant radiation monitoring systems for compliance with the FSAR and NUREG-0737 and the recommendations of ANSI/ANS Standards 6.8.1-1981, N13.1-1969, N13.10-1974, and N323-1978.

The NRC inspector reviewed selected portions of Preoperational Tests SPO-18.001, "Radiation Monitoring System," Revision 1, December 17, 1982; SPO-18-003, "Process and Effluent Radiation Monitors," Revision 0, December 2, 1983; SPO-18-004, "Miscellaneous Radiation Monitors," Revision 0, November 30, 1983; and SPO-18-005, "Radiation Monitoring," Revision 0, December 2, 1983. The NRC inspector also reviewed several procedures relating to the calibration of process and effluent radiation monitors.

The NRC inspector expressed concern regarding the radiation monitoring system Trouble Panalarm L0210 located on Control Panel (CP) 36 which did not have reflash capability and that possibly control room operators would not be aware of multiple system troubles. The NRC inspector noted that CP-6, also located in the control room, has individual alarms for systems; but the NRC inspector was unable to determine if operators would be cognizant of the CP-6 alarms. This concern will be evaluated as part of the control room habitability study.

The NRC inspector discussed with licensee representatives the calibration of effluent monitors. The licensee had performed a calibration of the liquid effluent monitor with a combination of solid and liquid sources. The gaseous effluent monitors are to be calibrated with the solid sources provided by the manufacturer prior to fuel load, and within 6 months after issuance of the operating license they are to be recalibrated with radioactive gases.

Open Item 382/8211-10 remains open pending the completion of all instrument calibrations which are to be completed within 6 months after issuance of an operating license.

No violations or deviations were identified.

10. Audits and Reviews

The NRC inspector reviewed the licensee's internal audit review program regarding radwaste management and transportation activities to determine compliance with FSAR commitments; the requirements of 10 CFR Part 50, Appendix B; the recommendations of ANSI Standard N18.7-1976; and Regulatory Guides 1.33, 1.144, 1.146, and 4.15.



The licensee had scheduled audits in the areas of air cleaning systems; radwaste management systems and transportation activities; and equipment, instrumentation operation, and calibration for radwaste and health physics departments, which were to be completed by July 1984.

The NRC inspector reviewed the master checklist for the air cleaning system audit and had previously reviewed the checklist for the other audits identified above. The licensee planned to start the audit for air cleaning systems prior to mid-May 1984 during the performance of preoperational testing.

Open Item 382/8211-13 is considered open until the audit of the air cleaning systems is completed and corrective action of identified deficiencies is reviewed. This item is also considered critical and needs to be completed prior to fuel load.

No violations or deviations were identified.

#### 11. Transportation Activities

The NRC inspector reviewed the licensee's transportation activities to determine compliance with 10 CFR Parts 20, 61, 71, and 49 CFR Parts 100-199.

The licensee had selected a supplier of a computer software package for the determination of radwaste classification and tracking. The software packages had not arrived at the time of this inspection.

Open Item 382/8211-12 will remain open until the licensee completes program development and implements the requirements of 10 CFR Parts 20 and 61. This open item must be closed prior to the shipment of any radwaste from the facility.

No violations or deviations were identified.

#### 12. Procedures

The NRC inspector reviewed licensee procedures to determine compliance with the requirements of 10 CFR Parts 20, 61, and 71; 49 CFR Parts 100-199; recommendations contained in Regulatory Guides 1.21, 1.33, 4.15, 8.8, and 8.10; and ANSI Standards N13.1-1969, N13.10-1974, N18.7-1976, 55.1-1979, 55.4-1979, N101.1-1972, N323-1978, N509-1980, and N510-1980; and NUREG-0761.

The licensee had completed the procedures for instrumentation operation and calibration. These procedures were utilized during preoperational testing discussed in paragraph 9. The NRC inspector noted that some of these procedures required extensive revision during this testing period. The NRC inspector also noted that the gaseous effluent monitors calibration procedures did not reflect the method to be used for calibrating these monitors with radioactive gas.

Open Item 382/8211-14 will remain open pending the completion/revision for those procedures discussed above.

No violations or deviations were identified.

13. Exit Interview

The NRC inspector met with licensee representatives identified in paragraph 1 and the NRC senior resident inspector at the conclusion of the inspection on April 27, 1984. The NRC inspector discussed the scope and findings of the inspection and reaffirmed the status of open items that must be resolved prior to fuel load: Open Items 382/8211-09, 382/8211-13, and 382/8322-02; and those open items which must be completed at a later date: Open Items 382/8211-10, 382/8211-11, 382/8211-12, and 382/8211-14.

INSPECTOR'S REPORT  
Office of Inspection and Enforcement

Base. Ronald E  
REVIEWER  
Blane Murray

INSPECTORS R. E. Baile

LICENSEE/VENDOR										TRANSACTION TYPE		DOCKET NO. (8 digits) OR LICENSE NO. (BY PRODUCT) (13 digits)						REPORT		NEXT INSPEC. DATE					
LOUISIANA POWER & LIGHT CO.										X	I - INSERT	05000302						09/18		A					
											M - MODIFY									B					
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PERIOD OF INVESTIGATION/INSPECTION										INSPECTION PERFORMED BY										ORGANIZATION CODE OF REGION/HQ CONDUCTING ACTIVITY (See IEMC 0530 "Manpower Reporting—Weekly Manpower Reporting" for code)					
FROM						TO				X	1 - REGIONAL OFFICE STAFF					OTHER	REGION		DIVISION		BRANCH				
MO	DAY	YR	MO	DAY	YR	2 - RESIDENT INSPECTOR					4		B		A										
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REGIONAL ACTION (Check one box only)		TYPE OF ACTIVITY CONDUCTED (Check one box only)				
<input type="checkbox"/> 1 - NRC FORM 591	<input type="checkbox"/> 02 - SAFETY	<input type="checkbox"/> 06 - MGMT VISIT	<input type="checkbox"/> 10 - PLANT SEC.	<input type="checkbox"/> 14 - INQUIRY		
<input type="checkbox"/> 2 - REGIONAL OFFICE LETTER	<input type="checkbox"/> 03 - INCIDENT	<input type="checkbox"/> 07 - SPECIAL	<input type="checkbox"/> 11 - INVENT. VER.	<input type="checkbox"/> 15 - INVESTIGATION		
	<input type="checkbox"/> 04 - ENFORCEMENT	<input type="checkbox"/> 08 - VENDOR	<input type="checkbox"/> 12 - SHIPMENT/EXPORT			
	<input type="checkbox"/> 05 - MGMT. AUDIT	<input type="checkbox"/> 09 - MAT. ACCT.	<input type="checkbox"/> 13 - IMPORT			

INSPECTION/INVESTIGATION FINDINGS (Check one box only)				TOTAL NUMBER OF VIOLATIONS AND DEVIATIONS				ENFORCEMENT CONFERENCE HELD				REPORT CONTAIN 2 790 INFORMATION				LETTER OR REPORT TRANSMITTAL DATE							
A	B	C	D													NRC FORM 591 OR REG LETTER ISSUED				REPORT SENT TO HQ FOR ACTION			
<input checked="" type="checkbox"/>																							
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				2 - VIOLATION																			
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