

APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION  
REGION IV

NRC Inspection Report: 50-382/85-14

License: NPF-38

Docket: 50-382

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

Facility Name: Waterford Steam Electric Station, Unit 3 (Wat-3)

Inspection At: Taft, St. Charles Parish, Louisiana

Inspection Conducted: April 29 - May 3, 1985

Inspector:

*B. D. Chaney*  
H. D. Chaney, Radiation Specialist

*5/30/85*  
Date

Approved:

*B. Murray*  
B. Murray, Chief, Facilities Radiological  
Protection Section

*5/30/85*  
Date

*[Signature]*  
G. L. Constable, Chief, Reactor Project Section B  
Reactor Project Branch 1

*6/10/85*  
Date

Inspection Summary

Inspection Conducted April 29-May 3, 1985 (Report 50-382/85-14)

Areas Inspected: Routine, unannounced inspection of the licensee's radiation protection program (RP) to include: organization and management controls, training and qualifications, ALARA program, radiological shield survey program during power ascension testing, and a review of the circumstances surrounding

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discharges of steam generator blowdown (SGB) to onsite sediment ponds. The inspection involved 40 inspector-hours onsite and 13 inspector-hours offsite by one NRC inspector.

Results: Within the five areas inspected, no violations or deviations were identified. One unresolved item is discussed in paragraph 7.

DETAILS

1. Persons Contacted

LP&L

\*R. P. Barkhurst, Plant Manager  
\*D. W. Delk, Operations Quality Assurance (QA)  
\*C. R. Hall, Health Physics (HP) Supervisor  
\*D. L. Hoel, HP Supervisor  
\*R. W. Kenning, Radiation Protection Superintendent  
\*D. A. Landeche, ALARA Coordinator  
\*D. A. McLaughlin, Nuclear Support  
\*J. V. Messina, Operations QA  
\*A. R. Roberts, Operations QA  
J. O. Woods, Plant QA Manager  
\*C. O. Hawkins, Chemistry Group  
\*G. L. Dolese, Chemistry Technician  
\*D. E. Adams, Nuclear Support  
\*P. V. Prasankumar, Maintenance Superintendent  
\*E. M. Rollins, Nuclear Support  
\*R. C. McLendon, HP Supervisor  
\*D. H. Espenan, HP Supervisor  
\*K. L. Brewster, Onsite Licensing  
\*S. M. O'Henn, General Training Superintendent  
D. T. Simpson, Technical Training Superintendent  
\*R. E. Allan, Chemistry Supervisor  
G. L. Ranck, Modification Project Coordinator  
L. W. Laughlin, Technical Support Group  
K. R. Iyengar, Nuclear Support Manager  
B. O. Goldman, HP Technician - ALARA

Others

G. L. Constable, NRC Senior Resident Inspector  
\*T. A. Flippo, NRC Resident Inspector  
\*W. B. Jones, NRC Inspector  
\*J. B. Nicholas, NRC Inspector

\*Denotes those present during the exit interview.

The NRC inspector also interviewed other Wat-3 administrative, training department, and HP staff members during this inspection.

2. RP Organization and Management Controls

The NRC inspector reviewed the licensee's onsite and offsite RP organizations to determine compliance with the Final Safety Analysis Report (FSAR) and the Technical Specifications (TS), and the recommendations in Regulatory Guide (RG) 8.8.

The licensee's RP organizations were found to be as depicted in the FSAR and TS. The NRC inspector reviewed onsite RP program implementing procedures, RP group directives, control point logs, overtime use, interviewed selected HP technicians, and discussed RP group staffing. The Radiation Protection Superintendent (RPS) (Radiation Protection Manager) is responsible for implementing the Wat-3 RP program (including the solid radioactive waste program) through four HP supervisors and five shift control technicians (senior HP technicians). The NRC inspector noted that the RP staff onsite had remained stable during the past year at a staff level of 18 technicians and 7 supervisors/coordinators. The licensee had supplemented the RP group staff with approximately 17 contract HP technicians in an effort to reduce employee overtime and provide RP coverage for operational situations not planned for during facility power ascension testing. The NRC inspector noted that the licensee intends to increase both the permanent and contract RP staff in the near future.

The NRC inspector also reviewed the staffing and implementing procedures, and held discussions with LP&L corporate RP staff Radiation Control Unit (RCU) of the LP&L Nuclear Services Organization. The NRC inspector determined that the RCU, under the direction of the nuclear support manager, provided support services to the onsite health physics and radiation protection programs. The offsite RCU staff is composed of four professionals; two involved in direct HP support, one in environmental program support and one in radioactive waste program support. The RCU staff reached its present staffing level in 1984 and has remained stable. Both onsite and offsite RP staff procedures and directives address the specific responsibilities of each group. Both groups and their management support the implementation of a comprehensive radiation protection program.

The NRC inspector determined that the licensee had implemented suitable onsite programs for identifying and correcting problem areas and for conducting appraisals of the onsite RP program by the corporate RCU. The NRC inspector reviewed three appraisals conducted by the RCU (radioactive waste, internal dosimetry, and external dosimetry) and found them to be comprehensive and objective. The NRC inspector also reviewed the authority, management support, and the control exercised over contract RP technicians.

No violations or deviations were identified.

### 3. RP Training and Staff Qualifications

The NRC inspector reviewed the licensee's RP training program and staff qualifications for compliance with requirements of Section 6.3 of the TS, and 10 CFR 19.12; commitments contained in Sections 12 and 13 of the FSAR; and the recommendations of RG 1.8, and industry standards ANSI/ANS 3.1-1978 and ANSI N18.1-1971.

The NRC inspector reviewed the licensee's training facilities (onsite and offsite), RP staff training and qualification program and implementing procedures, contract RP technician screening and qualification program, radiation worker training and retraining program, respiratory protection training, training department administrative control program, instructor qualifications and certification program, employee qualification and training records, reference library, and video production facilities.

A review of position descriptions, personnel assignments and training records indicated that assignments were commensurate with the individual's qualifications and training, and in accordance with RG 1.8-1975. The NRC inspector noted that the reference library contained resource material (technical literature and video tapes) involving RP, HP and plant operations. The NRC inspector discussed with training department personnel the lack of industry standards and NRC regulatory guides in the library.

Selected training records of RP staff personnel were reviewed and found complete. The licensee was noted to be in the process of converting hard copy files to a microfilm systems.

The NRC inspector reviewed the LP&L corporate RCU staff qualifications and training programs and discussed the licensee's policy regarding attendance at supplemental/specialized training programs and professional meetings. The NRC inspector also noted that the licensee plans to obtain INPO accreditation for the HP training program on or about April 1, 1986.

No violations or deviations were identified.

### 4. Audits and Reviews

The NRC inspector reviewed the licensee's audit and review activities regarding the RP program for compliance with the commitments of Section 13.4 of the FSAR, the requirements of Criterion 18 of 10 CFR Part 50, Appendix B, Sections 6.5 and 6.5.2 of the TS, the QA Manual, and the recommendations of RG 1.144 and ANSI N45.2.12.

The NRC inspector reviewed three RCU appraisals of onsite RP activities and six audits of RP activities conducted by the onsite Nuclear Operations QA Group. The NRC inspector noted that the RCU appraisals were

comprehensive and involved technical issues such as internal dosimetry. The onsite QA audits were also comprehensive and involved the programmatic review of compliance with regulatory requirements and commitments to RGs, industry standards and plant implementing procedures.

The following audits and appraisals were reviewed:

- Health Physics Program (QA), Serial No. SA-W3-QA-84-48.
- HP and Radwaste Technician/Helper Training (QA), Serial No. SA-W3-QA-84-47.
- Radiation Contamination Control and Radiation Monitoring Control (QA), Serial No. SA-W3-QA-85-06.
- Radioactive Waste Management (QA), Serial No. SA-W3-QA-85-12.
- External, Internal Exposure Control and Dosimetry Programs (QA), Serial No. SA-W3-QA-85-21, in progress.
- Internal Radiation and Respiratory Protection (RCU), LP&L Letter No. W3P85-0285.
- External Dosimetry (RCU), LP&L Letter No. W3P84-3026.
- Radwaste Appraisal (RCU), LP&L Letter No. W3P85-1301.

All audits and appraisals involved checklists, properly qualified personnel, pre and post audit/appraisal meeting, and issuance of audit/appraisal reports to appropriate management personnel. Audits were noted to include followup on licensee actions to previous NRC concerns identified. The NRC inspector noted that corporate and plant management were involved in the day-to-day RP activities.

No violations or deviations were identified.

5. ALARA

The NRC inspector reviewed the licensee's ALARA program for compliance with the requirements of 10 CFR Part 20.1(c), commitments contained in Sections 11 and 12 of the FSAR, and the recommendations of RGs 8.8 and 8.10.

The NRC inspector reviewed the ALARA program implementation, planning and scheduling interface, engineering and equipment design/modification ALARA review, ALARA committee activities, ALARA problem reports, interviewed personnel, and observed inplant areas and work activities.



The NRC inspector noted representation at ALARA committee meetings by corporate RCU personnel and key plant staff personnel. The LP&L ALARA manual provides senior LP&L management policies and implementing directives, assignment of station and corporate responsibilities and delegation of authorities, QA department involvement, listing of ALARA program implementing procedures, and audit/appraisal/ surveillance requirements.

The radiation man-rem goal during power ascension testing had been established at 25 man-rem. This goal appears achievable based on a first quarter man-rem expenditure of 0.7 man-rem. The NRC inspector noted that the man-rem goal for the remaining portion of the year, following start of commercial operation was still being developed by the RCU.

The NRC inspector reviewed proposed ALARA performance data formats (exposure results, contamination incidents, contamination controls, respiratory protection, etc.) that will be forwarded to senior LP&L management via a monthly LP&L management report.

The NRC inspector reviewed plant modifications and the interfacing of ALARA reviews during preliminary design stages. One such design change (MP 89-459) involving the boric acid concentrator was reviewed and it was noted that the ALARA review resulted in the relocation of two pumps to a lower background area, and that a checklist similar to those recommended in RG 8.8 was used.

Inspections of the reactor auxiliary building (RAB), including the radiological control point were made by the NRC inspector. The NRC inspector noted the use of radiological work permits, area status boards, prework briefings, and radiological surveys for the release of materials and personnel during egress from the radiologically controlled areas. The NRC inspector noted that the licensee was utilizing a high sensitivity walk-through whole body frisker as the primary whole body frisking at the radiologically controlled area exit from the RAB. The NRC inspector reviewed the current status of plant areas requiring radiological controls for entry, i.e., controlled surface contamination controls and/or airborne radioactivity controls. The NRC inspector determined that in addition to approximately 13 areas/cubicles requiring special contamination controls (protective clothing and/or respiratory protection) in the RAB, the normally noncontaminated turbine building industrial liquid waste and oil sumps plus an area around a boric acid concentrator condensate return drain line were being radiologically controlled. The turbine building sumps and much of the secondary plant were cross contaminated with low-level radioactivity due to an unexpected cross flow of reactor coolant system fluids (RCS) into the secondary side via the radioactive system relief collection header and boric acid concentrator steam chest (non-radioactive side) on or about April 3, 1985. The licensee effectively controlled the radioactivity by collection of solids and

liquid effluents from the secondary side so that there were no releases of radioactivity to unrestricted areas. The waste oil sump and oil separator unit were cross contaminated by RCS liquids entering floor drains in the RAB that discharged to an industrial sump in lieu of a radioactive waste collection sump/tank. The NRC inspector reviewed the controls, clean up, and discussed with licensee personnel the corrective actions being taken to prevent a recurrence. The NRC inspector noted to the licensee that while the number of contamination controlled areas in the RAB was not excessive at this time, the licensee should ensure resources are provided to minimize the further degradation of the radiological status of existing controlled areas within and outside of the RAB and reduce the number of specific areas requiring contamination controls.

No violations or deviations were identified.

6. Startup Radiation Survey Program

The NRC inspector reviewed the licensee's facility startup radiation survey program for compliance with commitments contained in the FSAR, Section 14.2.12.3, the requirements of 10 CFR Part 20 and the TS, and the guidance contained in NRC RGs 1.68, 1.8, 8.8, and industry standards ANSI/ANS-6.3.1-1980 and ANSI N323-1978.

The NRC inspector reviewed the licensee's survey results for 20 percent and 50 percent reactor power levels, discussed survey techniques, reviewed survey logs, and compared survey results to FSAR radiation zone criteria. The NRC inspector also noted that the licensee had a contractor perform neutron spectra studies at 20 percent and 50 percent reactor power levels, and that the licensee was performing comparisons of neutron dose rate measurements to preplaced dosimeter (thermoluminescent type) readings within containment. The licensee is still evaluating corrective action for the abnormal radiation levels on the plus 21 foot level of the RAB in the east wing area (see NRC Inspection Report 50-382/85-12). The licensee's survey program for power ascension appeared to be conducted in accordance with startup procedure SIT-TP-715, and FSAR commitments.

No violations or deviations were identified.

7. Steam Generator Blowdown Effluents

The NRC inspector reviewed the circumstances surrounding the discharge of low-level radioactivity to an onsite sediment pond (within the 10 CFR Part 20 identified restricted area defined in paragraph 3.11.1.1 of the TS).

The NRC inspector determined that on or about April 3 and 4, 1985, the licensee made a planned nonradioactive discharge of SGB (SG 1&2) to the onsite heavy metals sediment pond (Wat-3 metals pond) using paragraph 6.17



of operating procedure OP-3-110, "Steam Generator Blowdown." During the SGB (approximately 26 hours), radioactive contamination of the steam plant systems occurred, due to a separate and unrelated incident, and a small amount of low-level radioactivity was discharged to the pond. This event was documented as a potential reportable event (PRE)-85-080 in accordance with Wat-3 instructions. The NRC inspector determined that the use of the metals pond for discharge of SGB (radioactive or non-radioactive) apparently was not evaluated as a safety concern in Sections 10.4.8 and 11.2.2.3 of the FSAR. Since the licensee's operating procedures address safety reviews during their review cycle there is some confusion as to the need for a 10 CFR Part 50.72 safety evaluation or whether a satisfactory safety evaluation was made during the review of the procedure. The use of the metals pond for discharge of SGB is considered an unresolved item (382/8514-01) pending further review by the NRC staff. The above noted events (SGB to metals pond and secondary system contamination) were reported to the NRC via Licensee Event Report 85-13. The NRC inspector noted that the limits of Appendix B (Table 11) to 10 CFR Part 20 were not exceeded during the SGB discharge.

No violations or deviations were identified.

8. Unresolved Items

An unresolved item is a matter about which more information is required in order to ascertain whether it is an acceptable item, a deviation, or a violation. An unresolved item is discussed in paragraph 7 of this inspection report.

9. Exit Interview

The NRC inspector met with the licensee representatives and the NRC resident inspectors identified in paragraph 1 at the conclusion of the inspection on May 3, 1985. The NRC inspector summarized the scope and findings of the inspection presented in this report.