

APPENDIX

U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-498/87-20
50-499/87-20

Construction Permits: CPPR-128
CPPR-129

Dockets: 50-498
50-499

Licensee: Houston Lighting & Power Company (HL&P)
P. O. Box 1700
Houston, Texas 77001

Facility Name: South Texas Project Electric Generating Station, Units 1
and 2 (STP)

Inspection At: STP Site, Matagorda County, Texas

Inspection Conducted: April 27 through May 1, 1987

Inspectors:

for Blaine Murray
R. E. Baer, Radiation Specialist, Facilities
Radiological Protection Section

5/20/87
Date

for Blaine Murray
H. L. Scott, Radiation Specialist, Facilities
Radiological Protection Section

5/22/87
Date

Approved:

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

5/23/87
Date

Inspection Summary

Inspection Conducted April 27 through May 1, 1987 (Report 50-498/87-20;
50-499/87-20)

Areas Inspected: Routine, announced inspection of the radioactive waste management program including: organization and management controls, training and qualifications, solid radioactive waste, liquid radioactive waste, gaseous radioactive waste, NUREG-0737 items, and licensee action on Inspection and Enforcement Bulletins and Circulars.

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

DETAILS

1. Persons Contacted

HL&P

- *W. H. Kinsey, Plant Manager
- *C. R. Beavers, Lead Engineer, Computer Support
- *H. S. Blinka, Supervisor, Performance Support
- *E. L. Brown, Nuclear Licensing
 - R. J. Brown, Unit Supervisor, Operations
 - R. C. Craft, Supervisor, Radiological Protection
- *R. J. Daly, Start-up Manager
- W. P. Evans, Licensing Engineer
- *S. M. Head, Lead Engineer, Licensing
 - B. W. Hodge, System Engineer, Start-up
- *W. G. Isereau, Supervisor, Operations Quality Assurance
 - F. A. Jacobus, Chemical Operator
 - W. G. Leska, System Engineer, Startup
 - J. D. Lindsay, Senior Health Physicist, Radiological Support
- *W. D. Parish, Supervisor, Radiological Support
- J. L. Rasbury, Lead Engineer, Technical Support
- *M. F. Rejcek, Supervisor, Chemical Operations
 - W. F. Scott, Foreman, Radwaste
- *E. L. Stansel, Supervisor, Computer Support
- *K. L. Trippel, Lead Engineer, Technical Support
- *T. E. Underwood, Manager, Chemical Operations and Analysis
- *B. R. Wahlheim, Engineer, Technical Support
 - B. N. Woolweber, Engineer, Radwaste System

Others

- *D. R. Carpenter, Senior Resident Inspector, NRC
 - D. L. Garrison, Resident Inspector, NRC
- *N. C. Jensen, Consultant, NRC
- *J. F. Lara, Resident Inspector, NRC
- *T. Reis, Resident Inspector, NRC

*Denotes attendance at the exit interview on May 1, 1987.

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

2. Open Items

An open item is a matter that requires further review and evaluation by the NRC inspector. Open items are used to document, track, and ensure

adequate followup on matters of concern to the NRC inspector. The following open items were identified:

<u>Open Item</u>	<u>Description</u>	<u>Paragraph</u>
498/8720-01	NUREG-0737 Noble Gas Effluent Monitor	5
498/8720-02	NUREG-0737 Sampling and Analysis of Plant Effluents	5
498/8720-03	NUREG-0737 Containment High Range Radiation Monitor	5
498/8720-04	NUREG-0737 Control Room Habitability Requirements	5

3. Followup on Previous Inspection Findings

(Open) Open Item (498/8630-02; 499/8627-02): Radwaste Training Program - This item involved: (a) implementation of a training/retraining program for chemical operators, and (b) development and implementation of a training program for personnel involved with the handling and packaging of low-level radioactive waste as required in IE Bulletin 79-19. The licensee issued Procedure IP-8.17, "Non-licensed Operator Training Program," Revision 1, on April 28, 1987. Therefore, part (a) is considered closed.

Open Item (498/8630-02; 499/8627-02) remains open pending implementation of the training program concerning radioactive waste identified in part (b) above.

(Open) Open Item (498/8630-03): Radwaste Program Audit - This item involved: (a) completion of an approved audit plan, including a checklist for the radwaste program, and (b) completion of an approved audit plan, including a checklist for the transfer, packaging, and transport of low-level radioactive waste. The NRC inspectors discussed the term "audit plan," which is meant to provide, as described in ANSI N45.2-1971, information about the functional area to be audited. The licensee uses the term "audit scope" when discussing audit plan activities.

Open Item (498/8630-03) remains open pending completion of audit scopes and checklists as identified in parts (a) and (b) above.

(Open) Open Item (498/8630-04): Radioactive Material Transport Quality Assurance Program - This item involved the status of a quality assurance program to meet the requirements of 10 CFR Part 71.101. The licensee stated that they had not submitted their quality assurance program for the transport of licensed material to the NRC for approval. The NRC inspector stated that the quality assurance program would have to be submitted in accordance with 10 CFR 71.101(c) before transport of greater than type A quantities of radioactive material.

Open Item (498/8630-04) remains open pending the submittal and approval of the quality assurance program for transport of radioactive material.

(Open) Open Item (498/8630-05): Liquid Radwaste System - This item involved: (a) completion of an approved preoperational test procedure for the liquid radioactive waste systems, (b) completion of the preoperational tests on liquid radioactive waste systems, (d) review of operating procedures for valving errors and operating conditions which could contaminate nonradioactive systems, (e) verification of tank volumes, representative sampling, discharge flow rates, and recorder readings, and (f) performance of an ALARA review of the (as-built) liquid radioactive waste system, including the recommendation of ANSI/ANS 55.6-1979.

The licensee completed a review of the liquid waste processing system for valving errors that could possibly contaminate nonradioactive systems. Therefore, part (d) is considered closed. Open Item (498/8630-20) remains open pending completion of parts (a), (b), (e), and (f). NOTE: Part (c) was closed in a previous inspection report.

(Open) Open Item (498/8630-06): Gaseous Radwaste System - This item involved: (a) completion of the system preoperational test, (b) performance of an ALARA review of the (as-built) gaseous radwaste system, including the recommendations of ANSI/ANS 55.4-1979, (c) review of operating procedures for valving errors and operating conditions which could contaminate nonradioactive systems, and (e) discharge flowrates and recorder readings.

The licensee completed a review of the gaseous waste processing system for valving errors that could possibly contaminate nonradioactive systems. Therefore, part (c) is considered closed.

Open Item (498/8630-06) remains open pending completion of parts (a), (b), and (e). NOTE: Part (d) was closed in a previous inspection report.

(Open) Open Item (498/8630-07): Solid Radwaste System - This item involved: (a) completion of approved preoperational test procedures, (b) completion of preoperational tests, (c) verification of representative sampling of spent resins, and (d) performance of an ALARA review of the (as-built) solid radwaste system, including the recommendations of ANSI/ANS 55.1-1979.

The licensee had issued solid radwaste system preoperational test procedures WSP0-1 and WSP0-2. Therefore, part (a) is considered closed. Open Item (498/8630-07) remains open pending completion of parts (b), (c), and (d).

(Open) Open Item (498/8630-08): Air Cleaning System - This item involved: (a) completion of preoperational testing and (b) resolution of which ANSI document (1975-76 or 1980) will be used as a reference for testing. The licensee decided to use the 1980 ANSI standard as the reference document

and had submitted a change to the Final Safety Analysis Report (FSAR) to identify the 1980 ANSI document.

The licensee has changed the FSAR to incorporate use of the 1980 ANSI document. Therefore, part (b) is closed. Open Item (498/8630-08) remains open pending completion of part (a).

(Open) Open Item (498/8630-09): Area Radiation Monitors - This item involved: (a) completion of preoperational testing of all area radiation monitors and (b) completion of calibration, surveillance, and operation procedures. The licensee has completed the calibration and surveillance procedures of part (b).

Open Item (498/8630-09) remains open pending completion of part (a) and the operational procedures identified in part (b).

(Open) Open Item (498/8630-10): Process and Effluent Radioactivity Monitoring System - This item involved calibration of gaseous and liquid radioactivity monitors with National Bureau of Standards (NBS) traceable gaseous and liquid standards.

Open Item (498/8630-10) remains open pending completion of the calibrations identified above.

(Open) Open Item (498/8630-11): Process and Effluent Radioactivity Monitoring System - This item involved: (a) completion of preoperational testing of process and effluent monitors, (b) determination of effluent monitor calibration sources, (c) completion of process and effluent monitor surveillance, calibration, and operational procedures, and (d) determination of representative sampling for offline monitors. The licensee has completed the calibration and surveillance procedures of part (c).

Open Item (498/8630-11) remains open pending completion of parts (a), (b), and the operational procedures identified in part (c).

(Closed) Open Item (498/8630-12): Procedures - This item involved development of procedures for the following areas: (a) radioactive waste activities - shipping, storage, handling and compaction, (b) area, process, and effluent instrumentation - operation, surveillance, and calibration, (c) filter replacement and surveillance - liquids, HEPA, and charcoal, (d) air cleaning systems - maintenance and testing, (e) filter and shield cask handling, (f) sampling and effluent release controls, and (g) solid waste processing control.

The licensee has developed procedures for the areas identified in parts (a), (c), (d), (e), (f), (g), and surveillance and calibration procedures for part (b). Area, process, and effluent instrumentation operation procedures will be tracked in Open Items 498/8630-09 and 498/8630-11. This item (498/8630-12) is considered closed.

4. Program Areas Inspected

The following program areas were inspected. Unless otherwise noted, the inspection was completed and revealed no violations, deviations, unresolved items, or open items. Notations after a specific inspection item are used to identify the following: I = item not inspected or only partially inspected; V = violation; D = deviation; U = unresolved item; and O = open item.

Inspection Procedure

Areas Inspected and Inspection Requirements

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Organization and Management Controls

- 02.01 - Organization, Responsibilities, and Authorities
- 02.02 - Staffing
- 02.03 - Identification and Correction of Weaknesses
- 02.04 - Audits and Appraisals - O (see paragraph 3)
- 02.05 - Communications to Employees
- 02.06 - Documentation and Implementation

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Training and Qualifications

- 02.01 - Training and Qualification Program - O (see paragraph 3)
- 02.02 - Education and Experience
- 02.03 - Adequacy and Quality of Training

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Solid Radioactive Waste

- 02.01 - Construction and Installation of Solid Waste System
- 02.02 - Liquid Leakage, Overflow, and Spillage
- 02.03 - Sampling
- 02.04 - Preoperational Test Program
- 02.05 - Completion of Preoperational Test Program - O (see paragraph 3)
- 02.06 - Installation, Calibration, and Testing of Process Monitors - O (see paragraph 3)
- 02.07 - Procedures
- 02.08 - Disposition of Low-Level Wastes

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Liquid Radioactive Waste

- 02.01 - Construction and Installation of Liquid Waste System
- 02.02 - Liquid Leakage, Overflow, and Spillage
- 02.03 - Sampling
- 02.04 - Preoperational Test Program - O (see paragraph 3)

- 02.05 - Completion of Preoperational Test Program
- 02.06 - Installation, Calibration, and Testing of Process Monitors - 0 (see paragraph 3)
- 02.07 - Procedures - 0 (see paragraph 3)
- 02.08 - Disposition of Low-Level Wastes

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Gaseous Radioactive Waste

- 02.01 - Construction and Installation of Gaseous Waste System
- 02.02 - Sampling
- 02.03 - Preoperational Test Program - 0 (see paragraph 3)
- 02.04 - Completion of Preoperational Test Program - 0 (see paragraph 3)
- 02.05 - Installation, Calibration, and Testing of Process Monitors - 0 (see paragraph 3)
- 02.06 - Procedures - 0 (see paragraph 3)

5. NUREG-0737 Items

The following licensee's plans and actions to implement certain NRC requirements identified in NUREG-0737, "Clarification of TMI Plan Requirements" concerning radiological control activities were reviewed:

Item II.B.2, Design Review of Plant Shielding and Environmental Qualification of Equipment for Spaces/Systems Which May Be Used in Postaccident Operations. The licensee had performed detailed source term assessments and design review of station shielding to ensure the accessibility of the vital areas, control room, auxiliary shutdown equipment room, postaccident sampling system area, radiation protection counting room, and radwaste counting room after an accident. The licensee also prepared a set of postaccident radiation zone maps depicting the radiation levels throughout the plant immediately following a design-basis accident. Calculations for areas designated for continuous occupancy, control room envelope and technical support center, indicated that General Design Criteria 19 will not be exceeded. This item (NUREG-0737, II.B.2) is considered closed.

Item II.B.3, Postaccident Sampling Capability. This item has been reviewed during previous inspections and is being tracked under Open Items 498/8624-07 and 498/8629-16.

Item II.F.1, Attachment 1, Noble Gas Effluent Monitor. The licensee had not completed preoperational testing and calibration of the wide range noble gas monitoring systems, the unit vent effluent monitor, or the condenser vacuum pump effluent monitor. The licensee had completed testing and calibration of main steamline radiation monitors. These monitors are required to be operational prior to fuel loading. The licensee is currently seeking relief from the requirement from NRC Office

of Nuclear Reactor Regulation (NRR). This item is considered open pending licensee actions to complete testing and calibration (498/8720-01).

Item II.F.1, Attachment 2, Sampling and Analysis of Plant Effluents. The licensee had not resolved the representative sampling capability associated with plant effluents. The NRC inspector will review the licensee's actions for: representative sampling; entrained moisture; isokinetic sampling; continuous sample collection whenever exhaust flow occurs; and limiting occupational dose to personnel during sample collection, handling, transport, and analysis during a future inspection. This item is considered open pending resolution of the above noted concerns (498/8720-02).

Item II.F.1, Attachment 3, Containment High Range Radiation Monitor. The licensee had installed two detectors inside the reactor containment building. These detectors appear to satisfy the requirements of NUREG-0737 and Regulatory Guide 1.97, except that the detectors had not been calibrated over the full range (0-10⁸ R/hr). These detectors are not required to be operational until the reactor is operating in Mode 3 per the draft STP Technical Specifications. This is considered open pending completion of detector calibration (498/8720-03).

Item III.D.3.4, Control Room Habitability Requirements. The licensee has provided redundant toxic gas monitors in the control room makeup air duct, an alarm on the HVAC panel in the control room, and an automatic isolation capability for the control room envelope. The NRC staff has evaluated the habitability of the control room during a postulated hazardous chemical release and found the licensee's proposed actions acceptable. The licensee had not installed the eight 300 cubic foot breathing air cylinders or the 6-hour supply for self-contained breathing apparatus. This item is considered open pending installation of the self-contained breathing apparatus and reserve air cylinders (498/8720-04).

6. Licensee Action on Inspection and Enforcement (IE) Bulletins and Circulars

(Closed) IE Bulletin 79-19

"Packaging of Low-Level Radioactive Waste for Transport and Burial." The licensee maintains current copies of NRC and Department of Transportation (DOT) regulations; a list of current licenses for burial sites; a written list of persons who are designated responsible for the safe transfer, packaging and transport of low-level radioactive material; and approved procedures. The licensee has provided training in NRC and DOT regulatory requirements to personnel involved in both the transfer and operational processes which generate waste and has scheduled an audit of activities associated with the transfer, packaging, and transport of low-level radioactive waste. This IE Bulletin is considered closed.

(Closed) IE Bulletin 79-20

"Packaging, Transport, and Burial of Low-Level Radioactive Waste." The licensee has evaluated this concern. The NRC inspector's review indicates that adequate management oversight is provided. This IE Bulletin is considered closed.

(Closed) IE Circular 79-21

"Prevention of Unplanned Releases of Radioactivity." The licensee has evaluated the concerns addressed in the circular and determined that leakage from equipment is directed to system drains and storm drains which are located in areas where there exists no potential for radioactive material to enter them. This IE circular is considered closed.

(Closed) IE Circular 80-18

"10 CFR 50.59 Safety Evaluations for Changes to Radioactive Waste Treatment Systems." The licensee has established administrative controls for performing safety evaluations on system modifications, special tests, and experiments, including changes to the radioactive waste treatment systems. This IE circular is considered closed.

The following IE circulars and bulletins were reviewed and closed in previous inspection reports:

IE Bulletin 80-10, "Contamination of Nonradioactive System and Resulting Potential for Unmonitored, Uncontrolled Release of Radioactivity to Environment."

IE Circular 77-14, "Separation of Contaminated Water Systems from Noncontaminated Plant Systems."

IE Circular 80-14, "Radioactive Contamination of Plant Demineralized Water System and Resultant Internal Contamination of Personnel."

IE Circular 81-09, "Containment Effluent Water that Bypasses Radioactivity Monitor."

7. Exit Interview

The NRC inspectors met with the personnel identified in paragraph 1 at the conclusion of the inspection on May 1, 1987. The NRC inspectors summarized the scope and findings of the inspection.