APPENDIX

U. S. NUCLEAR REGULATORY COMMISSION
REGION IV

NRC Inspection Report: 50-498/85-10 CP: CPPR-128 and 129
50-499/85-10

Docket: 50-498 and 50-499

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

Facility Name: South Texas Project, Units 1 and 2

Inspection At: South Texas Project, Matagorda County, Texas

Inspection Conducted: May 28-August 2, 1985

Inspectors: for _____ 8/22/85
C. E. Johnson, Senior Resident Inspector Date
Project Section C, Reactor Projects Branch

for _____ 8/22/85
D. L. Garrison, Resident Inspector Date
Project Section C, Reactor Projects Branch

Approved: for _____ 8/22/85
G. L. Constable, Chief, Project Section C Date
Reactor Projects Branch

Inspection Summary

Inspection Conducted May 28-August 2, 1985 (Report 50-498/85-10; 50-499/85-10)

Areas Inspected: Routine, unannounced inspection including: (1) Licensee Action on Previous Inspection Findings, (2) Licensee Identified Items, (3) Reactor Internals, (4) Permanent Plant Maintenance, (5) Deficiency Reporting, (6) Concrete Activities, (7) Expansion Anchor Program, and (8) Management Meetings. The inspection involved 334 inspector-hours onsite by two NRC inspectors.

Results: Within the scope of this inspection, no violations or deviations were identified.

Details

1. Persons Contacted

Principal Licensee Employees

*J. T. Westermeyer, Project Manager
K. O'Gara, Project Compliance Engineer
A. Khosla, Project Compliance Engineer
R. Hernandez, Project Compliance Supervisor
*L. Dolan, Project Compliance Engineer
*S. Dew, Project Manager
*D. R. Keating, Operations QA General Supervisor
*R. C. Arthurs, Project QA General Supervisor
*A. G. Peterson, Startup Engineer
*F. White, Lead Project Compliance Engineer
M. Powel, Supervising Licensing Engineer
*D. R. Daly, Startup Manager
*E. Hill, Project Compliance Engineer

Other Personnel

Bechtel Power Corporation (Bechtel)

*J. B. Gatewood, Project QA Engineer
*J. Noxon, QA Engineer
*D. M. Stover, Construction Manager
R. Snow, Permanent Plant Maintenance

Ebasco Services, Inc. (Ebasco)

*J. Thompson, Site Manager
*A. Cutrona, QA Manager
D. Young, Welding Engineer
R. Schuhman, Welding Engineer
J. Sercu, Quality Control

Westinghouse Electric Company (Westinghouse)

A. Hograt, Site QA Manager
W. Survik, Lead Mechanical Engineer
C. Rowland, Systems Engineer
E. Teragouchi, Mechanical Engineer
R. V. Osinski, Design Engineer
R. Stapleton, Manufacturing Engineer - Pensacola
C. Hahn, Welding Engineer

*Denotes those individuals attending the exit interview conducted August 2, 1985.

2. Site Tours

The NRC inspectors made several site tours in order to assess the general cleanliness and housekeeping activities, condition of equipment, and plant status. The following parts of the plants were inspected: containment buildings, mechanical/electrical auxiliary buildings, fire protection diesel pumphouse, fuel building Unit II, Warehouse "B", weld test shop, fabrication shop, reservoir, water treatment building, and associated yard areas and tanks.

The NRC inspectors noted much improvement in the overall appearance of all areas inspected. The battery rooms were in excellent condition. Most excess byproducts, i.e., boxes, empty cable reels, have been removed. The electrical equipment in Unit I was observed to have filters taped to vents and, in general, the units were satisfactory.

No violations or deviations were identified.

3. Licensee Action on Previously Reported Items

(Closed) DEF 8205 and 8308 (IRC 135)

This item of interest was the failure of Lapp brand insulators in the 345 KV switchyard due to an accumulation of construction generated dust and high humidity. After an extensive evaluation, the applicant decided to replace the insulators. The subject items were replaced on October 4, 1983, with longer Brown Boveri models which have 34 to 44 more inches of length. This item is considered closed.

(Closed) DER 83-15 (IRC 156)

This item concerned the use of updated seismic acceleration response spectra developed from a new analysis and updated model for the STP NSSS system. The new model and analysis showed increased amplification at some locations associated with NSSS supports. This item has been fully evaluated and is discussed in detail in the final report to the NRC dated April 27, 1984. This item is considered closed.

Licensee Action of Previous Inspection Findings

(Closed) Unresolved Item 8318-05

This matter concerns an audit debriefing by an INPO team. The writer stated ". . . several items were of particular importance to the NRC inspector" and "They require further review." The item was unresolved pending review of the audit report and licensee's response.

The NRC inspector reviewed the licensee's response and the INPO report titled "Construction Project Evaluation - September 1983," which included findings, recommendations, and responses, all of which were general in subject matter. The NRC inspector has no further interest in the report at this time. This item is considered closed.

(Closed) Unresolved Item 8211-03

This item concerns the logs that are required in some procedures. The NRC inspector had noted that several logs were required to be maintained; however, the procedures were deficient in clear instructions on filing the logs. The quality site manager committed to changing the procedure to disposition the logs. The applicable procedure, QCP-17.1, Rev. 2, "Quality Assurance Records," has been changed to include the statement: "5.8 All logs maintained in accordance with QC procedures shall be transferred to the Ebasco records group, upon completion of all activities relative to the scope of these logs, for further processing in accordance with their procedures." This item is considered closed.

(Open) Open Item 8506-02

This matter concerns documentation of the spent fuel racks such as material certification and certificate of compliance. The licensee and Westinghouse have not yet retrieved all documentation required to close this issue. This item remains open.

4. Licensee Action on IE Bulletins

(Closed) IE Bulletin 84-03

This item concerns the failure of the refueling cavity water seal (rubber/pneumatic) at Haddam Neck. This type of seal is not used at STP. The STP seal is metal and is welded from the stainless refueling cavity liner directly to the reactor vessel flange. No further action is required. This IE Bulletin is considered closed.

(Closed) IE Bulletin 83-08

"Electrical Circuit Breakers with an Undervoltage Trip Feature in Use in Safety-Related Applications Other Than the Reactor Trip System." The A/E and licensee review of this item concludes that no circuit breakers with an undervoltage trip attachment are used at STP other than in the reactor trip system. No further action is required. This IE Bulletin is considered closed.

(Closed) IE Bulletin 76-07

This is the same item as IEC 76-01 in this report which is closed.

(Closed) IE Bulletin 78-06

This bulletin pertains to defective Cutler-Hammer, Type M relays with DC coils. Verification of Bechtel's procurement computer printout of all relays onsite at that time and at the present indicate no Cutler-Hammer relays purchased at STP. No further action is required. This IE Bulletin is considered closed.

(Closed) IE Bulletin 82-04

This bulletin pertains to deficiencies in primary containment electrical penetration assemblies manufactured by Bunker Ramo Company. Verification and random spot checks indicated no Bunker Ramo penetrations. All penetrations used at STP are manufactured by Westinghouse, except for three manufactured by Conax. No further action is required. This IE Bulletin is considered closed.

IE Bulletins That Are Not Applicable to STP

The following IE Bulletins are considered closed.

76-01	79-06B
76-04	79-08
78-03	79-12
78-09	79-22
78-11	79-26
78-13	80-07, Supplement 1
78-14	84-01
79-05B	

5. Licensee Action on IE Circulars

(Closed) IE Circular 76-01

This item concerns General Electric "Magspeed" hoist control system. This system is not used at STP, therefore no further action is required. This IE Circular is considered closed.

IE Circulars Not Applicable to STP

The following IE Circulars are considered closed.

77-07	79-06
77-09	79-07
77-12	79-14
78-01	79-16
78=10	80-06
78-11	80-08
78-12	80-19
78-14	80-24
79-01	80-25
79-03	81-11

6. Licensee Action on IE Information Notices

(Closed) IE Information Notice 80-11

This notice concerned Viking fire protection equipment that utilized ASCO NP-1 solenoid valves with an ethylene propylene elastomer on the internal siding piston. The compound is easily degraded when in contact with oils and will seize.

An inspection of six systems was made and it was verified that the valves were not used in any. A review by the utility indicated that the valves are not used at STP. This IE Information Notice is considered closed.

(Closed) IE Information Notice 79-06

This notice reported discrepancies in Stone and Webster calculations for seismic events using the computer program PIPESTRESS and NUPIPE and their subprograms, specifically SHOCK 2. This notice is not relevant in that the licensee piping was analyzed to SUPERPIPE which uses the SRSS or square-root-of-the-sum-of-the-squares and absolute sum method and WESTDYN, which uses the SRSS method. This IE Information Notice is considered closed.

(Closed) IE Information Notice 80-03

This item pertains to maintenance on General Electric speed control circuits to the main turbine electrohydraulic control system which, under certain conditions, will actuate a safety injection and reactor trip.

STP utilizes a Westinghouse EHC system, thus, the notice is not applicable. However, HL&P performed a full evaluation of the Westinghouse EHC and has determined that no similar anomalies are present. This IE Information Notice is considered closed.

(Closed) IE Information Notice 81-04

This notice concerns fractures in 30" butt welded "Ts" to 30" piping in the main steam supply. The licensee has taken preventive measures to detect this type situation in the preservice and inservice (PSI and ISI) inspection programs. This IE Information Notice is considered closed.

IE Information Notices Not Applicable to STP

The following IE Information notices are considered closed.

79-02	82-24	84-41
79-16	82-26	84-43
79-18	82-33	84-62
80-02	82-39	84-64
80-04	82-41	84-77
80-17	83-09	84-79
80-24	83-16	84-80
80-25	83-22	84-81
80-30	83-32	84-82
80-32	83-35	84-84
80-32, Rev. 1	83-39	84-85
80-33	83-66	84-86
80-35	83-66, Supp. 1	84-87
80-45	83-73	84-88
81-02	83-74	84-89
81-11	83-82	84-94
81-12	84-25	85-01
81-13	84-26	85-07
81-22	84-27	85-26
81-32	84-28	85-29
81-37	84-35	85-31
82-16		

7. Reactor Internals

The purpose of this inspection was to verify that the machining and fabrication of the bottom mounted instrument column assemblies in the Unit 1 and 2 reactor internals met the fabrication criteria of the component designer.

The following drawings and process specifications were used in the inspection:

- PS80281RG, Rev. 2 - Reactor Internals Field Fabrication Requirements
- PS80280LM, Rev. 7 - Reactor Internals Fabrication Requirements
- 619E74-G01, Rev. 9 - 4 Loop XL Bottom Mounted Instrumentation and Secondary Core Support Assembly
- 6119E59, Various Groups, Rev. 4 - 4 Loop XL Bottom Mounted Instrumentation Column Assembly

. 6118E69, Various Groups, Rev. 4 - 3 and 4 Loop Bottom Mounted Instrument Column Subassembly

. 6114D17, Various Groups, Rev. 2 - 3 and 4 Loop Bottom Mounted Instrument Guide Extension Tube

. 6124E52, Rev. 2 - 4 Loop XL Bottom Mounted Instrumentation Column Assemblies

During an inspection of the reactor internals, the NRC inspector noted some apparent irregularity in the machining on the outside diameters of some of the bottom mounted instrument columns. These columns guided the incore instrumentation from the bottom inside of the reactor vessel to the bottom of the core barrel assembly. The item of concern was the concentricity of the tubes. If the part was out of round, it was questioned as to whether the internal dimensions were true to centers of the parts so that the complete assembly, after welding (2 manual tungsten inert gas and 1 electron beam) would be true throughout its entire length.

HL&P licensing and Westinghouse site engineers requested the assistance of Westinghouse-Pensacola, which furnished a manufacturing engineer with a set of detailed manufacturing drawings. A reinspection of the instrument assemblies was performed on a selected basis for the Reactor 1 columns. Unit 2 columns were uncrated in the Bechtel "B" warehouse and four assemblies were inspected and one was unwrapped and observed for conformance to the C.D. surface requirements.

Westinghouse informed the NRC inspector that, in the machining and boring of these items, the technique used in machining produces a part that may be machined on the O.D. on one side only. Also, the tubes/bar are procured in sizes very near the finished product size, which does not allow, in some cases, for machining the complete circumference; also the material may not be perfectly straight. The preceding three items, in some cases in combination with each other, may cause a part to be produced that is out of round or appears to be out of round. The out-of-roundness observed on the parts inspected were determined to be within the tolerances of the drawings.

The check for the trueness of the bore of the assembly is the insertion of certain diameter machined close tolerance bars through the assembly after installation. Westinghouse informed the NRC inspector that this test had been completed and that all tubes were true. Additionally, all of the welding had been ultrasonically reexamined.

It was concluded by the NRC inspector that the parts met the drawing requirements for the attributes examined.

No violations or deviations were identified.

8. Review of Construction/Engineering Deficiency Reporting to 10 CFR 50.55(e)

The purpose of this review and inspection was to assess the adequacy and timeliness in reporting deficient conditions to the NRC.

The NRC inspector reviewed the process of reporting deficiencies in the construction contractor system, deficiency evaluation reports (DER) and licensee system, and deficiency evaluation form (DEF). This review is an extension of the same matter as reported in NRC Inspection Report 50-498/85-06; 50-499/85-06. The primary focus of this report is to ascertain if the timeliness in reporting, as required by federal regulations and project procedure requirements, have been adhered to. All DERs and DEFs processed in the period January 1, 1984, to June 1, 1985, were evaluated.

The procedure for initiating deficient conditions in the DER system is generally by the review of subtier documents (NCRs, letters, engineering discrepancies, etc). A QA group will initiate the DER and will process it according to procedure to engineering for a technical evaluation, then to the utility for further processing and evaluation. The utility system for initiating DEFs is as follows: Any individual who feels that he is knowledgeable of a problem area can initiate a DEF. The DEF is reviewed by an appropriate supervising engineer who forwards it to the engineering manager for a technical review and analysis. The DEF is then sent to the incident review group/committee (IRC) for a final decision as to reportability to the NRC. The two systems have similar reporting time requirements and are:

Contractor (DER)				Licensee (DEF)
14 Days	-	Evaluation	-	14 Days
1 Day	-	Notification	-	1 Day
28 Days	-	Reports (Concurrent)	-	30 Days

The reporting time elements concern contractor to licensee (DER) and licensee to NRC (DER/DEF.)

In the evaluation of the 60 DERs and 53 DEFs that were tracked through their cycle, it was found that, in each case, the timeliness and reporting meets the criteria set forth in 10 CFR 50.55(e) and NRC guidance on the subject, dated April 1, 1980. The evaluation period (14 calendar days), initial notification to NRC (24 hours, excluding weekends and holidays) and initial written report to NRC (30 calendar days) was noted as on-time in each DEF requiring full reportability.

From the preceding review and inspection and that previously reported it appears that the system is functioning as required.

No violations or deviations were identified

9. Permanent Plant Maintenance (PPM)

The purpose of this inspection was to verify that adequate procedures were followed in verifying the lubrication program.

The NRC inspector attended five sessions of instructions to the millwright craft for the verification that the correct grease was and had been utilized in the surveillance and greasing of machinery. The instruction covered items requiring greasing such as couplings, damper bearings, motor bearings, valves, etc., and types of grease connections. The sessions also covered "how to" locate, inject, and visually verify that adequate greasing takes place, and overgreasing.

Several methods of verifying the history were utilized, including using a dipstick, forcing older grease through an exhaust port, and researching the history of the item.

All deficiencies are being recorded on maintenance action cards (MAC) which will be evaluated by other NRC personnel for nonconformances at the end of the evaluation period.

No violations or deviations were identified.

10. Concrete Activities

a. Placements (Unit II)

The NRC inspectors observed two placements in the Unit II MEAB. The placements observed were 2-ME-W-041-045 and 2-ME-W-041-041B. Particular attention was given in the areas of transporting/discharging of concrete, concrete placing methods, consolidation, rebar clearance, and spacing. There were no discrepancies observed in any of the areas observed.

The NRC inspector examined records for both 2-ME-W-041-045 and 2-ME-W-041-041B. Records reviewed were cadweld inspection reports, rebar inspection reports, concrete placement control records, concrete placement inspection reports, and concrete preplacement inspection reports. Records appear to be adequate and legible.

b. Expansion Anchor Program

Procedures

The NRC inspector reviewed specifications, procedures, and manufacturer's recommendations for the installation and inspection of expansion anchors. The specification contained the manufacturer's recommendation for inspection and installation criteria. Overall, the procedures used appear to be adequate.

Documents reviewed are listed below:

Specification

5A010551000 - "Installation of Expansion Anchors, Rock Bolts, Grouted Anchor Bolts, and Core Drilling," Rev. 6 dated January 11, 1985

Manufacturers Manuals

Hilti Anchor and Fastener Manual

Drillco Maxi-Bolt

Observation

The NRC inspector observed a variety of sizes of Hilti expansion anchors throughout containment, MEAB, and diesel generator building. Two electrical hangers, five conduit supports, and one structural assembly were selected for examination.

Throughout the inspection, the NRC inspector asked the accompanying QC inspector questions pertaining to specifications and procedural inspection attributes. The QC inspector responded to the questions very well. He was knowledgeable of all inspection criteria and attributes.

Expansion anchors inspected were installed as per procedure.

Records

The NRC inspector reviewed all expansion anchor inspection reports (IR) associated with electrical cable tray support, conduit supports, and structural members inspected. Reports appear to be easily retrievable, legible, and documented properly. Documents reviewed are listed below.

Electrical/Conduit	Structural
IR 1-01097E	IR 1-00953C
IR 1-01008E	
IR 1-0437	
IR 1E-00827	
IR 1-01256E	
IR 1E-0319	
IR 1E-1504	
IR P1-00584E	
DN 1-1122C	

No violations or deviations were identified.

11. Management Meeting

The NRC inspectors held a meeting with HL&P and Ebasco welding engineers pertaining to visual weld acceptance criteria (VWAC.) The meeting was held so that Ebasco's welding engineer could brief the NRC resident inspector on the implementation and training for VWAC for structural welding at STP. A letter from J. P. Knight, Acting Director, Division of Engineering, NRR to Mr. Douglas E. Dutton, Chairman, Nuclear Construction Issues Group (NCIG), dated June 26, 1985, gave the applicant permission to commit to Revision 2 of VWAC. However, this commitment must be documented by the applicant in the form of an amendment to the SAR.

VWAC was prepared by the NCIG.

HL&P has chosen to use the VWAC, Revision 2, and has initiated an SAR change.

No violations or deviations were identified.

12. Exit Interview

An exit interview was conducted on August 2, 1985, with those personnel denoted in paragraph 1 of this report.