UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of	)	
	)	
HOUSTON LIGHTING & POWER COMPANY, ET AL.	)	Docket Nos. 50-498 50-499
	)	
(South Texas Project, Units 1 & 2)	)	

NRC STAFF TESTIMONY OF JOHN W. GILRAY, RELATIVE TO WHETHER THE APPLICANTS' CURRENT QA/QC ORGANIZATION FOR THE BALANCE OF DESIGN AND CONSTRUCTION MEETS THE REQUIREMENTS OF 10 C.F.R. PART 50, APPENDIX B

Q. Will you please state your full name, employer, job title and specifically your responsibilities relative to the South Texas Project.

A. John William Gilray; U.S. Nuclear Regulatory Commission, Office of Nuclear Reactor Regulations, Division of Engineering, Quality Assurance Branch (QAB); Principal Quality Assurance Engineer (Nuclear).

Since the Show Cause Order of April 30, 1980, I have been the QAB reviewer responsible for the evaluation of changes to HL&P's docketed QA/QC program for design and construction to determine its acceptability. In addition, as a result of the Show Cause Order, QAB was requested by I&E to review the HL&P response of July, 28, 1980, relative to the causes that contributed to the breakdown of the quality assurance program at the South Texas Project, the corrective actions taken by HL&P to preclude recurrence of the problems and to suggest corrective action necessary to update the QA program description.

Q. Have you prepared a statement of your educational and professional qualifications?

A. Yes.

Q. Is this statement attached to this testimony?

A. Yes.

Q. What is the purpose of your testimony?

A. The purpose of my testimony is to respond in part to Board Issue D, to the extent it asks whether the QA/QC program which has been implemented for the balance of design and construction at the South Texas Project, including the most recent docketed program, dated March 9, 1982, meets the requirements of 10 C.F.R. Part 50, Appendix B. Board Issue D states:

> In light of HL&P's prior performance in the construction of the STP as reflected, in part, in the Notice of Violation and Order to Show Cause dated April 30, 1980, and HL&P's response thereto (filings of May 23, 1980 and July 28, 1980), and actions taken pursuant thereto, do the current HL&P and Brown & Root (B&R) construction QA/QC organizations and practices meet the requirements of 10 C.F.R. Part 50, Appendix B; and is there reasonable assurance that they will be implemented so that construction of STP can be implemented in conformance with the construction permits and other applicable requirements?

In addition, to the extent this testimony evidences a course of conduct by the Applicant from which corporate character and competence can be inferred, it will be relevant to those issues.

Q. In what document was the Houston Lighting & Power Quality Assurance/Quality Control (QA/QC) program originally incorporated?

A. In Chapter 17 of the PSAR, Docket Nos. 50-498/499.

Q. Did there come a time when the QA program originally committed to by HL&P was amended?

A. Yes, as a result of NRC concerns expressed over the implementation of the QA program, as evidenced by the Show Cause Order and the accompanying Notice of Violation, HL&P was requested in September, 1980 to update its QA program to reflect improvements which had been implemented as a result of the Show Cause Order. The revised, upgraded QA program was submitted on October 31,1980.

Although the original QA program met the requirements of Appendix B to 10 C.F.R., Part 50, the revised QA program of October 31, 1980, and supplements thereto, reflect a stronger, more involved QA organization and an increase in QA programmatic controls. Those particular areas where the program has been enhanced, include:

1. The authority and responsibilities of the HL&P QA organization have been increased in the major construction disciplines of civil, structural and electrical. The QA organization has been restructured to include a quality engineering function with separate Project QA Supervisors in each of these disciplines to provide QA technical direction to HL&P's contractor's quality control. This interface will provide the necessary continuity in implementing the QA and QC requirements.

2. The QA organization at the site has been increased to provide additional QA coverage over construction activities.

3. The training and indoctrination program has been improved with the incorporation of proficiency tests to assure personnel are knowledgeable of QA/QC principles and capable of executing their assigned tasks.

4. The "stop work" authority has been more clearly defined; QA/QC personnel of both HL&P and the constructor have the authority to stop unsatisfactory work.

5. The HL&P QA organization performs trend analysis on construction activity to identify recurring deficiencies and prevent them from happening in the future.

6. Nonconformance Reports and Field Requests for Engineering Action are analyzed in order to assess their impact upon the overall design.

7. The identification and correction of nonconforming conditions have been improved to require the prompt reporting of deficiencies and for formal disposition of the deficiencies with QA involvement.

8. The control of changes and "as built" drawings have been improved to preclude situations where changes can be made without engineering and QA documented direction.

9. HL&P has revised and improved its audit system. The audit staff and procedures have been upgraded improving audit skills and capabilities.

10. Participation of the QA/QC staff in the review and concurrence of changes in procedures and instructions to assure the necessary quality assurance elements is provided.

Q. What is the latest status of the HL&P docketed QA program for the remaining design and construction activities at the South Texas Project?

A. As a result of the changes in the organizations performing the architect-engineer, construction manager and constructor functions, HL&P submitted to the NRC on March 9, 1982, Revision 3 to their docketed QA

program for the remaining design and construction activities at the South Texas Project, Units 1 & 2. I reviewed and evaluated this revised QA program against the standard review plan.

Q. Describe the basic features of the HL&P QA program, Revision 3.

A. HL&P's Revision 3 to the QA program in essence describes three programs; the previously updated and NRC-approved QA program for the HL&P quality assurance related activities and the QA programs of the two recently assigned principal contractors, Bechtel and Ebasco. The previously updated HL&P portion of the QA program provides for an improved QA organization with increased authority and responsibilities for surveillance by HL&P personnel during the day-to-day design and construction activities as more fully explained on pages 3 and 4.

The Bechtel Power Corporation commits to apply their NRC-approved Quality Assurance Topical Report BQ-TOP-1, Rev. 3A, as modified in Part B of Revision 3 of HL&P's latest QA program for the Engineering, Procurement, and Construction Management activities at the South Texas Project.

Ebasco Services, Inc. commits to apply their NRC-approved Quality Assurance Topical Report ETR-1001, Revision 10a as modified in Part C of Revision 3 of HL&P's latest QA program for the quality assurance and quality control of the construction services at the South Texas Project.

Q. Based on your review, what conclusion, if any, do you reach relative to the compliance of the most recently submitted QA program with Appendix B to 10 C.F.R., Part 50?

A. Based on a detailed review and evaluation of the HL&P QA program, which includes Bechtel's and Ebasco's QA programs, I have

concluded that these programs describe the necessary requirements, procedures, and controls that, when properly implemented, comply with the requirements of Appendix B to 10 C.F.R. Part 50. The organizations performing quality assurance functions within HL&P, Bechtel and Ebasco have the required independence and authority to effectively implement the quality assurance program without undue influence from those directly responsible for cost and schedules. I therefore find the HL&P QA Program Revision 3 acceptable for use in the control of the remaining design and construction activities at the South Texas Project, Units 1 and 2.

QUALIFICATIONS AND EXPERIENCE OF
JOHN WILLIAM GILRAY

Present Position	Title:	Principal Quality Assurance Engineer (Nuclear)
	Responsibilities:	Participates as a senior member of the Office of Nuclear Reactor Regulation - Quality Assurance Branch staff whose function is primarily one of evaluating, from a safety standpoint, reactor construction and operating proposals with respect to quality assurance and/or technical specficiations. Serves as a senior specialist for evaluation of power reactor license applications.
6/63 - 6/72	Title:	Quality Control Engineer for the AEC Space Nuclear Propulsion Office
	Responsibilities:	As the SNPO-C on-site Quality Control Engineer in the prime contractor's plant, is responsible for monitoring the contractor's quality control program and providing technical direction relative to the testing, inspection and adherence to aerospace-rated quality control procedures for the development of the nuclear rocket engi e (NERVA). Directs inspection personnel of the Air Force Plant Representative's office assigned to NERVA program relative to day-to-day inspections and quality surveys.
8/62 - 6/63	Title:	Quality Control Engineer for Bourn's Inc. (Electronic Component Co.)
	Responsibilities:	Responsible for the Quality Control and Reliability policies and activities in the manufacturing and inspection of potentiometers and relays used in the Aerospace industry. Evaluates the design and inspection processes for adequate quality and reliability requirements.

1/59 - 8/62	Title:	Quality Control Engineer at Alco Products, Inc. (Fabricator of Nuclear Components)
	Responsibilities:	Responsible for establishing and assuring proper implementation of Quality Control and Quality Assurance requirements for nuclear components from the design purchasing and manufacturing phases thru the shipment of the components of the Navy Nuclear Shipyards.
Schooling:		Graduate in BSME 1958
Courses:		Optical Tooling Engineering Radiography and Film Reading
Societies:		Society of Non-Destructive Testing American Society of Quality Control
PE:		Registered Professional Quality Engineer

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CERTIFICATE OF SERVICE

I hereby certify that copies of UPDATED TESTIMONY OF LAWRENCE P. CROCKER RELATIVE TO THE PROPOSED MANAGEMENT ORGANIZATION FOR OPERATIONS AND, IN ADDITION, TESTIMONY OF LAWRENCE P. CROCKER AND GLEN L. MADSEN ON THE QUALIFICATIONS OF BECHTEL POWER COPR. AND EBASCO SERVICES, INC. and NRC STAFF TESTIMONY OF JOHN W. GILRAY, RELATIVE TO WHETHER THE APPLICANTS' CURRENT QA/QC ORGANIZATION FOR THE BALANCE OF DESIGN AND CONSTRUCTION MEETS THE REQUIREMENTS OF 10 C.F.R. PART 50, APPENDIX B in the above-captioned proceeding have been served on the following by deposit in the United States mail, first class or, as indicated by an asterisk, through deposit in the Nuclear Regulatory Commission's internal mail system, this 5th day of April, 1982.

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