04/05/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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

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 CORP. AND EBASCO SERVICES, INC

Q.1. Please state your name and by whom you are employed and describe the work you perform.

A.1. My name is Lawrence P. Crocker (LPC). I am the Section Leader of the Management Technology Section in the Licensee Qualifications Branch, Division of Human Factors Safety, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. I am responsible for the activities of my section in reviewing the organization and management of applicants to determine their capability to safely build and operate nuclear power plants.

My name is Glen L. Madsen (GLM). I am Chief of Reactor Project Branch 1, Region IV, U.S. Nuclear Regulatory Commission, Arlington, Texas. I am responsible for my branch in inspecting nuclear power plants to assure the safety of licensed facilities, compliance with NRC require

ments, and to enforce the provisions of NRC permits, licenses, rules and directives pertinent to public health and safety.

Q.2. Have each of you prepared a statement of your professional qualifications?

A.2. Yes. A statement of our professional qualifications is attached to this testimony.

Q.3. What has been the involvement of each of you with the South Texas Project?

A.3. (LPC) I lead the NRR team which performed the early management audit of Houston Lighting and Power and the STP plant in February, 1981. I prepared Section 13 of the Staff's Partial Safety Evaluation Report on STP, NUREG-0780, issued in April, 1981.

In addition, I have reviewed for adequacy Houston Lighting and Power's (HL&P's) submittals of December 10, 1981 and March 15, 1982 relative to the qualifications of Bechtel Power Corp. (Bechtel) to perform architect-engineer and construction management services and Ebasco Services, Inc. (Ebasco) to perform as the constructor.

(GLM) Since February, 1981, I have been responsible for the inspection program for the South Texas Project, including the inspection effort relative to the replacement of Brown & Root by Bechtel and Ebasco.

Q.4. Mr. Crocker, have there been any changes to the HL&P corporate organization or the STP plant organization since you performed your review in early 1981?

A.4. (LPC) Yes, there have been a number of changes.

Q.5. Have you reviewed these changes?

A.5. (LPC) Yes, I have reviewed the changes in HL&P's corporate management and organization as reflected in the amendments to the Final Safety Analysis Report through amendment 25. However, a detailed evaluation will be performed of both HL&P corporate management and site organization at the time the complete Safety Evaluation Report is drafted for the South Texas Project.

Q.6. Would you describe the significant changes which have been the subject of an FSAR amendment?

A.6. (LPC) I think the most significant change is in the corporate organization, which is described on Figure 13.1 of the Partial SER, page 13-3.

At the time the Partial SER was written, the position of Nuclear Operations Manager was vacant. We commented in our SER on the importance of filling this position early because of the need to give this individual sufficient time to train a staff and develop a program prior to start-up. Since that time that position has been both filled and upgraded. The prior position of Nuclear Operations Manager has been elevated to Vice President, Nuclear Plant Opeartions. Further, the position was filled in July, 1981, by an individual who has had about twenty-two years of experience, including approximately 14 years of nuclear experience with the Tennessee Valley Authority in such positions as instrument engineer, assistant engineering supervisor, quality assurance supervisor and plant superintendent, all at the Browns Ferry Nuclear Plant. In his most recent position prior to joining HL&P, he was assistant director of nuclear operations for TVA, wherein he had responsibilities involving four nuclear plants. I have not had an opportunity to interview

this individual; however, based on his past job assignments I would judge that he has the appropriate experience to occupy the position of Vice President, Nuclear Plant Operations. In this position, he will have responsibility for operations of both the STP and the Allens Creek nuclear plants.

In addition, as anticipated in the Partial SER, page 13-10, the Quality Assurance organization has been changed to reflect the organization shown in Figure 13.3 of the Partial SER. All QA activities are now under a QA manager who reports directly to the Executive Vice President. There appear to be other minor realignments, for example, a Manager of Engineering Assurance has been added to the support staff.

I did not note any significant changes in the plant organization for operations. However, as earlier noted, an evaluation of the personnel in that organization will again be performed at the time the full SER is drafted.

A number of key personnel additions have been made in addition to the Vice President, Nuclear Plant Operations. I also noted in my review that several key positions are not filled at this time, including the position of Plant Superintendent, which was filled at the time of our review in February 1981. These changes are normal and what one would expect of any organization that is still developing.

Q.7. Turning your attention to the qualifications of Bechtel and Ebasco, are you aware of the organizational changes made for the balance of construction?

A.7. (LPC, GLM) Yes, we are aware that Brown and Root has now been replaced by Bechtel as the architect-engineer and construction manager and by Ebasco as the plant constructor.

Q.8. How do these changes affect your Partial SER?

A.8 (LPC) They have little or no effect on the Partial SER. The Partial SER addresses the organization and management of HL&P for plant operations, not for plant construction. Our evaluation of HL&P, as reported in the SER, was specifically concerned with the personnel and the organization that would be in place at the time the STP plant was ready to operate.

Q.9. Have you evaluated what impact, if any, there would be on the balance of design and construction of the STP due to the change from Brown and Root to Bechtel as the architect-engineer and construction manager and to Ebasco as the plant constructor?

A.9. (LPC, GLM) We have not performed a detailed evaluation to determine what impact these changes will have on the balance of design or construction. However, we have reviewed the information submitted to the NRC by HL&P on the experience and qualifications of Bechtel and Ebasco, so as to form an opinion on whether there is reasonable assurance these two organizations can design and construct the balance of the project.

Q.10. In your judgment, then, is there reasonable assurance Bechtel as architect-engineer and construction manager, and Ebasco, as constructor, can design and construct the balance of the STP?

A.10. Yes, Bechtel is one of the largest, if not the largest, engineering firm engaging in nuclear power plant design, construction and start-up activities. Bechtel has many years of experience world-wide in

nuclear plant engineering and construction. A letter from HL&P to the NRC dated December 10, 1981, provided a summary of Bechtel's nuclear plant involvement. The summary indicates more than 30 years of experience within the nuclear power industry. During the past eight years, Bechtel has been involved in the design of 50 nuclear power units with a total capacity of 51,000 megawatts. During the same period, Bechtel has been involved with the construction of 41 nuclear units with a total capacity of 43,000 megawatts.

Bechtel has had a vast amount of nuclear experience and is intimately familiar with the NRC regulations governing plant design and construction, including the requirements for a quality assurance program.

The description of the transition program to effectuate the change from Brown & Root to Bechtel, submitted on December 11, 1981, indicates that all principals of the Bechtel transition team have had appropriate previous nuclear experience and that personnel assignments to the team have been made to provide for continuity from the transition phase through to project completion.

Accordingly, our opinion is that Bechtel is emminently qualified to perform the balance of the design and the construction management function for the STP.

Q.11. And what is your opinion regarding the qualifications of Ebasco as constructor for the STP?

A.11. (LPC, GLM) A summary of Ebasco's nuclear plant experience was submitted to the NRC by an HL&P letter dated March 15, 1982. That summary indicates that Ebasco also has considerable nuclear plant experience extending over the past 20 years, during which time the

company has participated as architect-engineer, consulting engineer, constructor, construction manager, or various combinations of these activities, on 30 nuclear units having a total capacity in excess of 18,000 megawatts.

The summary indicates that Ebasco has served as constructor or construction manager on 17 nuclear units and, on one occasion, has taken over construction management duties for a nuclear plant where the initial construction was performed by others. Ebasco also has served as constructor on one nuclear unit where another architect-engineer provided the design.

Our opinion, therefore, is that Ebasco is qualified to take over the activities of construction for the STP.

Further, it should be noted relative to both Bechtel and Ebasco that although both are highly qualified corporations, the actual activities of design, engineering, construction management, and construction are performed by individuals. Thus, the outcome of these activities for the STP will to a considerable extent by dependent upon the individuals assigned to the project and their work product. Based on past experience and associations with Ebasco and Bechtel, both corporations are well qualified in the activities they have been assigned. Preliminary reviews, by the Region IV staff, indicate both corporations are selecting individuals with considerable qualifications and experience.

In addition, the Region IV staff has made preliminary reviews of the implementing procedures for the transition program submitted on December 11, 1981, and has found them acceptable. As the procedures are

more fully developed and organizations are staffed by Ebasco and Bechtel for the South Texas Project, the Region IV office will review the adequacy of the procedures and qualifications of the individuals responsible for carrying out those procedures.

April, 1982

LAWRENCE P. CROCKER

PROFESSIONAL QUALIFICATIONS

I am a Section Leader in the Licensee Qualifications Branch of the Division of Human Factors Safety, Office of Nuclear Reactor Regulation, Nuclear Regulatory Commission.

I graduated from the U.S. Military Academy at West Point, New York in 1951 with a Bachelor of Science degree in military engineering. I was commissioned a Second Lieutenant in the Corps of Engineers, U.S. Army. I served on active duty in the Corps of Engineers from then through August of 1970, at which time I retired in the grade of Lieutenant Colonel. My military experience included assignments as platoon leader, company commander, and battalion commander of various engineer units; overseas duty in Korea, Japan, the Azores and Thailand; and service on the Army General Staff. During my military service, I attended various Army schools including the Army Command and General Staff College.

In 1955, I entered Iowa State College, from which I graduated in 1956 with a Master of Science degree in Nuclear Engineering. The following year was spent attending the Oak Ridge School of Reactor Technology (ORSORT) at the Oak Ridge National Laboratory (ORNL). Upon graduation from ORSORT, I remained at ORNL for an additional year as Technical

Liaison Officer for the Army Nuclear Power Program with the responsibility of representing the Army's interests at ORNL. From 1958 to 1960 I was a Project Officer in the Army Reactor Branch of the Atomic Energy Commission with responsibility for managing, coordinating and technically supervising contractor activity on a research and development project leading to the design of a pressurized water nuclear power plant.

After a 3-year break for an overseas tour and attendance at an Army school, I was assigned in 1963 to the Office of the Inspector General, Department of the Army, where I was responsible for inspecting the operations and safety of the Army's nuclear power plants and research reactor facilities. From 1964 to 1967, I was assigned to the Office of the Chief of Research and Development where I served as the point of contact within the Army General Staff on all matters pertaining to research and development on the Army's nuclear power plants and research reactor facilities. From 1968 until retirement from the Army in 1970, I was the Deputy Director of the U.S. Army Engineer Reactors Group, with responsibilities including operator training, nuclear power plant operation, engineering support to the operating plants, and limited research and development activity.

Upon retiring from the Army, I accepted employment with the U.S. Nuclear Regulatory Commission, (then the U.S. Atomic Energy Commission) as a Project Manager in what is now the Division of Licensing. In this capacity I was responsible for the safety evaluation of the Kewaunee Nuclear Power Plant which was licensed for operation in December 1973 and

for the Alvin W. Vogtle Nuclear Plant which was licensed for construction in June of 1974. I had primary responsibility for the safety review of the Koshkonong Nuclear Plant.

From August of 1976 until January of 1980, I was the Technical Assistant to the Director of Project Management. In this position, I was responsible for preparation of periodic reports to the Advisory Committee on Reactor Safeguards on the status of resolution of the ACRS generic items. I served as the representative from the Division of Project Management on the Advisory Group to the Technical Activities Steering Committee from the time that group was formed in February of 1977, in which capacity I participated in the development of the NRR program to handle generic technical activities. During the period from May of 1979 through December of 1979, I served as a member of the NRC Special Inquiry Group investigating the Three Mile Island accident.

In January 1980, I was detailed to lead a small group working on development of criteria describing acceptable utility management structures and technical resources necessary for safe nuclear power plant operation. In May of 1980, this function was absorbed by the newly created Licensee Qualifications Branch of which I am now a member. I have participated in managemeant reviews of the corporate organizations and plant staffing for those utilities proposing to operate the Sequoyah, Salem, Diablo Canyon, McGuire, Comanche Peak, South Texas Project, and

Waterford nuclear plants. I also participated in similar reviews also were conducted for the Zion nuclear plant and for the Three Mile Island Unit 1 nuclear plant.

I am a Registered Professional Engineer in Virginia and in the District of Columbia.

PROFESSIONAL QUALIFICATIONS
OF
GLEN L. MADSEN

US NUCLEAR REGULATORY COMMISSION
REGION IV

Mr. Madsen is Chief, Reactor Project Branch 1, Region IV, US Nuclear Regulatory Commission located in Arlington, Texas. In this position, he has overall management responsibility for the Region IV inspection activities at the South Texas Project and other nuclear facilities that are under the Project Branch 1 jurisdiction. Mr. Madsen had the responsibility for the South Texas Project since February 1981.

Mr. Madsen has a Bachelor of Science degree in Chemical Engineering from the South Dakota School of Mines and Technology. He is a registered Professional Engineer in Nuclear Engineering in the State of California.

Prior Work Experience

1972 - 1982 Chief, Reactor Projects Branch

Managed a branch responsible for the inspection of power reactors during construction, preoperational testing, startup and operation. (NRC/AEC)

1967 - 1972 Reactor Inspector

Evaluated programs and practices against AEC requirements for nuclear power reactors during construction, preoperational testing, startup and operations. (AEC)

1951 - 1967 With the exception of two years in the US Army, Mr. Madsen was employed by the General Electric Company at Hanford. Assignments included line supervision, staff and managerial responsibilities at various production reactors. Included was an assignment as manager, Processing Operations for one production reactor with the responsibility for all activities associated with the facility.