04/23/81

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 and 2)	)	

NRC STAFF TESTIMONY OF WILLIAM C. SEIDLE, WILLIAM A. CROSSMAN, WILLIAM G. HUBACEK, ROBERT G. TAYLOR AND H. SHANNON PHILLIPS, RELATIVE TO THE HISTORY OF CONSTRUCTION ACTIVITY LEADING UP TO THE SHOW CAUSE ORDER OF APRIL 30, 1980

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

A. My name is William C. Seidle and I am currently Chief, Engineering Inspection Branch, Region IV, Office of Inspection and Enforcement, United States Nuclear Regulatory Commission. For the period relevant to this testimony, I was Chief of the Reactor Construction and Engineering Support Branch (RC&ESB). I was responsible for the implementation of programs of inspection, investigation, and enforcement for nuclear power plants under construction in Region IV, including the South Texas Project.

My name is William A. Crossman and I am Chief, Section (3) three, Reactor Projects Branch, Office of Inspection and Enforcement, Region IV, United States Nuclear Regulatory Commission. For the period relevant to this testimony, I was Chief, Projects Section, RC&ESB. I was responsible

for the supervision of the project inspectors who inspected nuclear power plants under construction in Region IV, including the South Texas Project.

My name is Robert G. Taylor and I am the Resident Reactor Inspector, Comanche Peak Station, Region IV, United States Nuclear Regulatory Commission From 1976 through February 1978, I was a Construction Project Reactor Inspector in Region IV, responsible for the inspection of nuclear power plants under construction, including the South Texas Project.

My name is William G. Hubacek and during the period relevant to this testimony I was a Reactor Inspector in RC&ESB, Office of Inspection and Enforcement, Region IV, United States Nuclear Regulatory Commission. I was responsible for project inspection of nuclear power facilities that were being constructed within Region IV, including the South Texas Project. Currently, I am a Reactor Inspector, Section (3) three, Reactor Projects Branch, Region IV.

My name is H. Shannon Phillips and I have been the Resident Reactor Inspector at the South Texas Project since August 22, 1979. I am responsible for coordinating all safety related inspection efforts relative to the NRC Region and the site. In addition, I was a member of a special investigative team, investigating allegations concerning lack of QC management support, intimidation and harrassment of quality control inspectors and the assessment of the effectiveness of the quality assurance/quality control program at the South Texas Project. This investigative effort resulted in the issuance of Staff Report 50-498/79-19 and 50-499/79-19, the Staff's Order to Show Cause dated April 30, 1980, Notice of Violation and Proposed Imposition of Civil Penalties.

Q. Has the Panel prepared statements of educational and professional qualifications?

A. Yes.

Q. Are the statements attached to this testimony?

A. Yes.

Q. What is the purpose of the Panel's testimony?

A. The purpose of this testimony is to respond generally to concerns over the construction history of the South Texas Project, by summarizing the Staff's investigative and enforcement activity at the South Texas Project which led to the Show Cause Order of April 30, 1980, and in particular, to respond in part to the following contentions:

> (CCANP, CEU) Contention 1
>
> There is no reasonable assurance that the activities authorized by the operating license for the South Texas Nuclear Project can be conducted without endangering the health and safety of the public in that:
>
> 1. There has been a surveying error which has resulted in the eastern edge of the Unit 2 Mechanical Electrical Auxiliary Building being constructed one (1) foot short (in the east-west direction) from its design location. This error violates 10 C.F.R. Part 50, Appendix B, Sections X and XI.
>
> 2. There has been a [sic] field construction error and as a result, extensive voids exist in the concrete wall enclosing the containment building, in violation of 10 C.F.R. Part 50, Appendix B, Sections IX and X.
>
> 3. In violation of Quality Assurance and Quality Control requirements applicable to the South Texas Nuclear Project with regard to document control (10 C.F.R. Part 50, Appendix B, Sections VI and XVII), a field document relating to cadweld inspections has been lost.
>
> 4. There are membrane seals in the containment structure which are damaged, indicating a violation of 10 C.F.R. Part 50, Appendix B, Sections X, XV and XVI.

5. There are steel reinforcement bars which are missing from the concrete around the equipment doors in the containment and such bars are missing from the containment structure as well, indicating violations of 10 C.F.R. Part 50, Appendix B, Sections X, XV and XVI.

6. There are cadwelds which have been integrated into parts of the plant structure which are not capable of being verified with regard to compliance with 10 C.F.R. Part 50, Appendix B, in violation of Sections IX and X of Appendix B.

7. Quality Control as per the requirements of 10 C.F.R. Part 50, Appendix B, in particular Sections III and IX, has not been complied with, because:

a. Efforts by quality control inspectors to verify that design changes were executed in accordance with the purposes of the original design were repeatedly and systematically thwarted.

b. There were personnel other than the original designer approving design changes with no first hand knowledge of the purpose of the original design.

c. There were design changes approved by personnel unqualified in the type of design where the change was made.

d. There were numerous pour cards that were supposed to record the correct execution of concrete pours which were falsified by numerous persons.

e. There has been and continues to be assaults on the Appliant's quality control inspectors, continual threats of bodily harm to those inspectors, firing of inspectors, and other acts constituting a pattern of behavior designed to intimidate the inspectors. As a result of the intimidations, certain inspections were never done because the inspectors decided to play cards over a period of four months rather than risk their safety on the plant grounds.

As a result of the foregoing, the Commission cannot make the findings required by 10 C.F.R. § 50.57(a)(1) and (2) necessary for issuance of an operating license for the South Texas Nuclear Project.

(CCANP, CEU) Contention 2

NRC inspection records (Inspection and Enforcement Reports #77-03, 2/77; #77-03, 4/77, and #78-08, 5/78) indicate that South Texas Project construction records have been falsified by employees of Houston Lighting and Power Company and Brown and Root, in violation of 10 CFR Part 50, Appendix B, Sections VI and XVII.

As a result, the Commission cannot make the finding required by 10 CFR §§ 50.57(a)(1) and (2).

In addition, the panel's testimony impacts to varying degrees on the other issues currently before this Board. Specifically, 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. Can you tell me generally what the Office of Inspection and Enforcement does?

A. The Office of Inspection and Enforcement is responsible for the development and administration of programs and policies for the inspection of Licensees' facilities to ascertain whether they are complying with NRC regulations. In addition, the Office of Inspection and Enforcement investigates accidents, allegations, and unusual circumstances; it recommends changes in licenses and standards, based on the results of inspections, investigations and enforcement actions; and it notifies licensees regarding generic problems so as to achieve appropriate precautionary or corrective action. Generally, the responsibility assigned to inspection and enforcement by 10 C.F.R. establishes that foundation upon which the reactor inspection program is structured and it confers to the Office of Inspection and Enforcement the authority to inspect activities over which NRC has jurisdiction.

In part, I&E inspections or audits are performed for the Office of Nuclear Reactor Regulation (NRR) in order for that office to evaluate the adequacy of licensee proposals. A very simplified explanation of the relationship of the two NRC offices is that NRR evaluates what licensee's propose, commit to, and/or are required to do, whereas I&E inspects the licensee's facilities to determine that the licensee has completed what it is required or has committed itself to do.

Q. In performing these tasks, is I&E guided by any particular NRC method of operation or basis upon which it seeks to assure quality construction?

A. Yes, under the NRC's total reactor licensing program, it is the licensee's obligation to design, construct, test and operate its facility in accordance with the NRC's regulatory requirements. An integral and essential element of the NRC's regulatory requirement is Appendix B to 10 C.F.R. 50 -- Quality Assurance Criteria for Nuclear Power Plants and Fuel Reprocessing Plants. This Appendix describes a management control system, or quality assurance program (QAP), which each licensee must develop and implement. The design of this program envisions a pyramid control system whereby the lower level of this pyramid assures a detailed inspection and test programs by the licensee itself or its contractors to assure that all safety significant actions are properly accomplished by licensee craftsman using approved procedures. At this level of the quality control system, a detailed verification program requires up to 100% inspection by the licensee's onsite quality control personnel. It is this level of verification of implementation of procedures which provides accept/reject decisions on specific equipment, construction activities, systems, technician or operator actions and procedures.

Moving up the management control system, the licensee must next include a system of audits to oversee and test the adequacy of the performance of the detailed quality control tests and inspections. These audit results are reported to licensee management which in turn must make program corrections and provide feedback to the lower level of the system in the form of changes in training, modification of procedures, upgrading or improving testing methods, design changes or other programmatic improvements. This feedback system is designed to assure and enhance the reliability of the program as a whole which, in turn, assures and verifies that all actions which are of safety significance have been considered and will be properly completed.

At the upper level of this organizational scheme, the licensee's management must provide adequate organizational independence and competent manpower for its quality assurance and quality control programs and provide policy guidance to all aspects of the licensee's and contractors' organizations in order to assure quality performance in all safety aspects of the construction and operation of its nuclear facility.

Q. What is the Office of Inspection and Enforcement's function in relation to the method you just described to assure quality control under Appendix B to 10 C.F.R. 50?

A. I&E seeks reasonable assurance that the Licensee's programs meet NRC regulatory requirements. In order to obtain this reasonable assurance, I&E performs selective inspections, in contrast to the licensee performing up to 100% verification of all phases of its construction activity. These inspections are not aimed at verification of individual components, actions, or procedures followed by the licensee; but rather, are aimed at evaluating

whether or not the licensee's management control systems relative to quality assurance are properly functioning.

Q. How is the Office of Inspection and Enforcement organized to perform this task?

A. The organizational structure of the Office of Inspection and Enforcement is designed to provide clear cut authorities and lines of responsibility. The headquarters staff has the responsibility for the overall management and direction of the organization, including the establishment of inspection and enforcement policies, programs and guidance. Headquarters also has the responsibility for implementing escalated or special enforcement or investigation actions.

In contrast, the five regional offices have the responsibility for implementing the inspection and enforcement programs. These responsibilities include routine inspections, investigations, and inquiries, and the taking of appropriate enforcement actions.

Q. Particularly in Region IV, what organizational units were specifically concerned with Houston Lighting & Power Company relative to its activity at the South Texas Project during the period covered by this testimony?

A. In Region IV, the Reactor Construction and Engineering Support Branch (RC&ESB) was charged with the responsibility of implementing the programs and policies previously described which relate to the construction of nuclear facilities. It was this branch which conducted inspections of the licensee's activities associated with the construction of the nuclear facility, including design controls, procurement, audits, site construction, and functioning of the management control systems. In addition, the RC&ESB

followed up on problems identified by the licensee which by regulation were required to be reported to the NRC. Additionally, RC&ESB took enforcement action when its inspections, investigations or inquiries indicated that the licensee was failing to comply with NRC requirements. These actions may have been in the form of a letter to the licensee, a meeting between regional management and licensee management, or a recommendation that I&E headquarters take an escalated enforcement action.

During all phases of inspections, whenever items of noncompliance were identified, I&E notified the licensee of the specific items of noncompliance and the licensee was required to submit proposed corrective action which it planed to implement to prevent recurrence of similar problems, as well as to correct the specific deficiency. RC&ESB then performed a follow up inspection of the accepted corrective action to assure that such action was implemented. If the results of a single inspection, or a sequence of inspections, indicated a deterioration in the overall performance of the licensee's program, an in depth inspection would be conducted to upgrade the degree of control exercised over the licensee.

Q. Prior to the Show Cause Order of April 30, 1980, how long had the Region IV RC&ESB been inspecting Houston Lighting & Power's construction activities at the South Texas Project site?

A. Over a period of approximately six years.

Q. Is the Panel prepared to testify with respect to the history of these inspections and notices of noncompliance?

A. Yes.

Q. Would you please summarize the history of RC&ESB's inspection, investigation and enforcement activity at the South Texas Project leading up to the enforcement actions of April 30, 1980.

A. Yes, during this construction period Region IV performed approximately 78 site and corporate inspections or investigations. A complete chronology of Region IV inspection activity at the South Texas Project through March, 1981, is attached to this testimony as Appendix A.

In addition, these investigations and inspections resulted in the issuance of approximately 41 notices of items of noncompliance or deviations prior to the issuance of I&E Report 79-19. A complete chronology of these notices is attached to this testimony as Appendix B.

Q. Prior to turning the Panel's attention to those inspections and items of noncompliance which led to the formation of the inspection team which drafted Report 79-19, would you define what is meant by an item of noncompliance or deviation?

A. Yes, an item of noncompliance refers to the Applicant's failure to comply with the various regulatory requirements of the NRC or the Applicant's specifications. During the time covered by this testimony, such items were categorized into three levels of severity: violations, infractions and deficiencies. When any level of severity was found a Notice of Violation was attached to the I&E Report wherein the item was reported and the level of severity was set forth.

A Violation was the most severe item of non-compliance and was issued when the fabrication, construction, testing or operation of a Safety Related Category I system was such that the function or integrity of the system was lost. In contrast, an infraction was a less serious finding that a Safety Related Category I system was impaired, rather than lost.

A deficiency was an item of noncompliance in which the threat to the health, safety, or interest of the public was remote; deficiencies included

such items of noncompliance as failure to follow records, and posting or labeling requirements which were not serious enough to amount to infractions.

In addition, at times a licensee would promise that certain controls or procedures would be implemented which were not required by the NRC. Nonetheless, when a licensee did not conform to its commitments to the NRC, even though such commitments were not regulatory requirements, such failure was cited and referred to as a deviation.

Q. Turning the Panel's attention to those inspections which led to the formation of the investigative team which drafted 79-19, I show you a letter, with attachments, dated February 15, 1977, to the Houston Lighting and Power Company making reference to Report 77-03 and marked for identification as Staff Exhibit No. 1. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company the results of an NRC investigation conducted between February 2 and 3, 1977.

Q. Who conducted this investigation?

A. This investigation was performed by W.A. Crossman, Chief, Projects Section, and R.G. Taylor, Reactor Inspector, Region IV.

Q. Who reviewed this report?

A. W.C. Seidle, Chief, Reactor Construction and Engineering Support Branch.

Q. What was the reason for this investigation?

A. On February 1, 1977, Region IV was notified by Houston Lighting and Power Company that an employee of Pittsburgh Testing Laboratory had been

detected by a fellow employee documenting tests which had not in fact been performed by that individual.

Q. How was the investigation into this matter conducted?

A. On February 2, 1977, Region IV personnel traveled to the South Texas site to investigate this allegation and the consequences of the irregularity, if found to be true.

The inspectors interviewed the employee who detected the irregularity and alleged that the suspected individual approved concrete sand on January 26, 1977, even though the actual tests were not performed. The site manager confronted the suspected individual with the allegation on January 28, 1977, and this person readily admitted that he had turned in test data without actually performing the tests. This employee was terminated on January 31, 1977.

As to the assurance that the concrete sand had been adequately tested, it was determined by the inspectors that several other tests were performed which similarly assured the adequacy of the concrete constituents, and accordingly, no structural safety problems existed. In addition, Pittsburgh Testing Laboratories agreed to review all data for previous months to detect apparent anomalies.

Q. Did your investigation indicate whether any person within the management of the Applicant, or its contractors, directed this practice or permitted it to continue?

A. Our investigation demonstrated that neither the Applicant's management, or its contractors, knew of this practice prior to January, 1977. Our investigation indicated that as soon as this matter was brought to the attention of the Applicant's management, the situation was corrected.

In addition to checking prior test records, this incident was documented in an Nonconformance Report and the Applicant stated it would increase surveillance over the aggregate testing program in the future.

Q. Did Region IV subsequently perform a follow up inspection to assure that the Applicant's proposed corrective action was implemented?

A. Yes.

Q. I show you a letter, with attachments, dated April 19, 1977, to the Houston Lighting & Power Company making reference to Report 77-05 and marked for identification as Staff Exhibit No. 2. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company the result of an NRC inspection conducted between March 28 and 31, 1977. Among the areas this inspection addressed was whether the Applicant performed the corrective action it committed to as a result of the document falsification.

Q. Who conducted this inspection?

A. This inspection was performed by R.G. Taylor, Reactor Inspector, Region IV.

Q. Who reviewed this inspection?

A. This inspection was reviewed by W.A. Crossman, Chief, Projects Section, Region IV.

Q. What were the results of the follow up inspection relative to the problems set forth in Report 77-03?

A. Pittsburgh Testing Laboratory presented a statistical analysis of concrete test data based upon a comparison of the work performed by the falsifier versus the work of other Pittsburgh Testing Laboratory inspectors.

The technique consisted of averaging the data from all tests performed from March 1976 to January 1977, relating to aggregate gradation. In addition to the average value, a coefficient of variation for each party involved in each test was developed. The average test values in the coefficient of variations for each different test performed by the records falsifier when compared to other testing personnel revealed no significant differences. In addition, the NRC inspector spot checked a considerable amount of data against the summary presented and found no discrepancies. In addition, the tests performed by persons other than the falsifier on the same aggregate clearly indicated that the aggregate met the quality standards. Accordingly, it was concluded that the document falsification had no safety significance.

Q. Turning the Panel's attention to Intervenor Contention 2, which states:

> NRC inspection records (Inspection & Enforcement Reports 77-03, 2/77; 77-03, 4/77, and 78-08, 5/78) indicate that South Texas Project construction records have been falsified by employees of Houston Lighting & Power Company and Brown & Root, in violation of 10 C.F.R. Part 50, Appendix B, Sections VI and VII.
>
> As a result, the Commission cannot make the findings required by 10 C.F.R. § 50.57(a)(1) and (2).

Do the investigative findings in 77-03 concerning falsified documents require the Staff to reach any conclusion on whether the South Texas Project can operate in conformity with the applicable NRC regulations?

A. No, particularly as no management culpability was found and further there was no safety significance to the document falsification.

Q. Does the investigative findings of 77-03 concerning falsified documents require the Staff to reach any conclusion whether there is reasonable assurance that the activities authorized by an operating

license can be conducted without endangering the health and safety of the public?

A. No, particularly as there was no management culpability and there was no safety significance to the document falsification.

Q. Again, with reference to Intervenor Contention 2, I show you a letter, with attachments, dated May 26, 1978, to the Houston Lighting & Power Company making reference to Report 78-08 and marked for identification as Staff Exhibit No. 3. Are you able to identify this document and its attachments?

A. Yes, this letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted between May 16 and 19, 1978.

Q. Who conducted this inspection?

A. This inspection was performed by W.G. Hubacek, Reactor Inspector, and W.A. Crossman, Chief, Projects Section, Region IV.

Q. Who reviewed this Inspection Report?

A. W.A. Crossman, Chief, Projects Section, Region IV.

Q. Intervenor Contention No. 2 indicates that I&E Report 78-08 discusses the problem of falsified construction records, in reviewing 78-08, has the Panel found anything relevant to falsified construction records?

A. No.

Q. I show you a letter, with attachments, dated April 2, 1977, to the Houston Lighting & Power Company making reference to Report 77-08 and marked for identification as Staff Exhibit No. 4. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC investigation conducted between July 6 and 8, 1977.

Q. Who conducted this investigation?

A. The investigation was performed by J. E. Foster, Investigative Specialist, Region III, and R. G. Taylor, Reactor Inspector, Region IV.

Q. Who reviewed this report?

A. The report was reviewed by W. C. Seidle, Chief, Reactor Construction and Engineering Support Branch, Region IV.

Q. What was the reason for this investigation?

A. On July 1, 1977, an individual contacted Region IV inspector R. G. Taylor by telephone and indicated that an incident had taken place at the South Texas Project in which a Brown and Root construction foreman assaulted and injured a Brown and Root civil quality control inspector. In addition, the individual alleged that the incident was just one of a series of threats illustrating a pattern of harrassment leveled against Brown and Root quality control inspectors.

Q. How was the investigation into this matter conducted?

A. NRC personnel visited the South Texas Project and interviewed all Brown and Root civil quality control inspectors present, including the quality control inspector involved in the altercation with the Brown and Root construction foreman which gave rise to this investigation. In addition, the NRC investigator and inspector interviewed Brown and Root construction personnel and reviewed the instructions and procedures followed by the Brown and Root quality control inspectors.

Q. What conclusions were reached as a result of this investigation?

A. Although two incidents involving threats to Brown and Root quality control inspectors and the pushing of one Brown and Root inspector in June of 1977 were confirmed, the facts gathered at that time regarding the two incidents were insufficient to substantiate the allegation that there was a directed program of systematic harrassment and intimidation of Brown and Root quality control inspectors. However, the regular QC inspectors interviewed who were assigned to safety related work areas did state they were subject to some minor harassment during concrete pours, and some complained of a lack of managerial support. No evidence was developed that the Brown and Root construction superintendent had advised his workers that any Brown and Root quality control inspector who found and reported unacceptable items during concrete placement inspections would be liable for a beating. The NRC Representatives also determined that an inordinate amount of friction had developed between Brown and Root quality control inspectors and Brown and Root construction personnel.

Q. What must be found by the NRC inspector in order to substantiate an allegation?

A. In order to substantiate an allegation, the NRC inspector must find independent evidence corroborating the allegation. If independent evidence is found contrary to the allegation, it is considered refuted. Absent either finding, an allegation may be closed as neither substantiated nor refuted. When deemed appropriate, a further investigation is conducted under such a situation.

Q. What do you mean in your conclusion by an inordinate amount of friction had developed between Brown and Root quality control inspectors and construction personnel?

A. As used in this investigative report, an inordinate amount of friction is meant to mean that amount of tension which is over and above the normal friction which usually exists during the day to day relationship between quality control and construction personnel at any construction site. If such friction exists, it has the potential to, but does not necessarily, adversely effect the professional working relationship between the two groups and may, in addition, adversely effect the work product. As the terms are used in I&E Reports, harassment refers to the tension, verbal abuse or friction between workers. Harassment does not affect an individual's work product. In contrast, intimidation occurs when one who is the victim of harassment fails to adequately perform his work in order to escape such harassment.

Q. On the South Texas Project during this investigation, did you find any evidence that this inordinate amount of friction did adversely effect the ability of the quality control inspectors to do their job?

A. No, all of the Brown and Root quality control inspectors interviewed at that time indicated that they had not overlooked any unacceptable conditions during their inspections by reason of construction harrassment, rather, they followed their inspection specifications to the letter. Several inspectors commented that they had actually become more strict in their inspections as a result of the friction between them and the Brown and Root construction personnel.

Q. I show you a letter, with attachments, dated December 28, 1977, to Houston Lighting & Power Company making reference to Report 77-14 and Report 77-09 and marked for identification as Staff Exhibit No. 5. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC investigation conducted between December 15 and 16, 1977.

Q. Who conducted this investigation?

A. This investigation was performed by R. G. Taylor, Reactor Inspector, Region IV, and J. J. Ward, Investigation Specialist, Region IV.

Q. Who reviewed this report?

A. W. A. Crossman, Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV.

Q. What was the reason for this investigation?

A. On December 10, 1977, an individual contacted the Region IV duty officer by telephone and indicated that he had radiographs in his possession which showed that the welds used in two nuclear power plants under construction in Region IV were defective.

Q. How was the investigation into this allegation conducted?

A. On December 10, 1977, the alleger was again contacted by telephone for elaboration of his charge. He indicated that he had in his possession questionable radiographs of electro-slag welds in the liner plate for the containment liners of the Comanche Peak and South Texas projects. On December 12, 1977, the alleger was again contacted by a Region IV representative at which time he indicated that he had been a victim of a hoax perpetrated by two of his acquaintances who had admitted the radiographs were not as

previously reported and that neither of the individuals providing the radiographs had ever been on either site. These telephone conversations were followed up by personal contact with the alleger on December 15, 1977. Following the personal contact, the alleger signed a statement for the investigator stating that the radiographs were not from a nuclear facility, that neither of his two friends who allegedly gave him the radiographs had ever worked at either of the sites and that the radiographs were not presently available for review. Lastly, the alleger acknowledged he was responsible for making a false report concerning the radiographs.

Q. What conclusions were arrived at as a result of this investigation?

A. The allegation was not substantiated, the radiographs were not related to any nuclear sites and the alleger was apparently the victim of a hoax.

Q. I show you a letter, with attachments, dated April 3, 1978, to the Houston Lighting & Power Company, making reference to Report 78-05 and marked for identification as Staff Exhibit No. 6. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power a report detailing the results of an investigation conducted on March 21, 1978.

Q. Who conducted this investigation?

A. The investigation was conducted by J. J. Ward, Investigation Specialist, and W. G. Hubacek, Reactor Inspector, Region IV.

Q. Who reviewed the report of this investigation?

A. The report of this investigation was reviewed and approved by W. A. Crossman, Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV.

Q. What was the reason for this investigation?

A. This investigation was in response to a letter to NRC headquarters dated February 20, 1978, from an individual who indicated he was a potential scapegoat for improper procedures at the South Texas Project.

Q. How was the investigation into this allegation performed?

A. The investigator and inspector traveled to the individual's home and interviewed him with respect to his concerns. This worker feared that he would be a scapegoat because the directions he received from his superiors, with respect to documentation requirements for the issuance of work tools, were not made a matter of general knowledge; accordingly, when he insisted upon proper documentation before giving out the requested tools the craftsmen would complain to their supervisors about this individual's behavior.

Q. What conclusions were reached as a result of this investigation?

A. The allegation was determined to be unrelated to nuclear safety in that no safety related structures or activities were involved. In essence, it was concluded that this situation was primarily a personnel matter and not related to construction activity.

Q. I show you a letter, with attachments, dated June 6, 1978, to Houston Lighting & Power Company making reference to Report 78-09 and marked for identification as Staff Exhibit No. 7. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an investigation conducted between May 16 and 18, 1978.

Q. Who conducted this investigation?

A. This investigation was conducted by J. J. Ward, Investigation Specialist, W. G. Hubacek, Reactor Inspector, and William A. Crossman, Chief, Projects Section, Region IV.

Q. Who reviewed and approved this investigation?

A. W. A. Crossman, Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV.

Q. What was the reason for this investigation?

A. On May 15, 1978, a Region III investigator received a telephone call from an individual who identified himself as a Brown and Root employee at the South Texas Project, but who otherwise wished to remain anonymous, and who set forth four allegations of irregularities. Specifically, the alleger claimed Cadweld records had been falsified, inspectors were not qualified for their positions, inspectors had failed general knowledge tests and procedural violations had occurred on the site.

Q. What was involved in th investigation and what conclusions were reached as a result of this i' estigation?

A. None of the alleg cions were then substantiated. An investigation into the allegations was conduc d on the site between May 16, and 18, 1978. Based on a review of the records i interviews with all persons within the department, there was no evidence found that Cadweld records had been falsified. Records indicating the qualifications of all the quality control inspectors were examined by the reactor inspector, including records of tests administered to these inspectors; an on the spot inspection of Cadwelds presently completed and in place in the containment structure was made during a walk through of the facility; all of the quality control

inspectors were interviewed; and selected Cadwelds were identified and checked for proper documentation. The concerns incorporated in Intervenor Contentions 1.6. and 2 are in part addressed in this report.

Q. I show you a letter, with attachments, dated August 22, 1978, to Houston Lighting & Power Company making reference to Report 78-12, and marked for identification as Staff Exhibit No. 8. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an investigation conducted between July 25 and 28, 1978.

Q. Who conducted this investigation?

A. J. J. Ward, Investigator, W. G. Hubacek, Reactor Inspector, and W. A. Crossman, Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV.

Q. Who reviewed and approved this investigation?

A. W. A. Crossman, Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV.

Q. What was the reason for this investigation?

A. On July 19, 1978, a Region IV project inspector received a telephone call from an individual who identified himself as an employee at the South Texas Project who wished to report alleged irregularities in the civil quality assurance program. Particularly, the allegation involved the following concerns:

1. Civil Quality Control Inspectors were not provided adequate training on recently issued procedures.

2. The nonconformance reporting system was inadequate.

3. Quality Assurance is reluctant to issue nonconformance reports for problems identified by Quality Control.

4. Quality Assurance does not adequately support Quality Control.

5. Document Control is poor for drawings and documents used by craft and Quality Control.

6. Cadweld as-built drawings for the Unit 2 fill slab are inaccurate.

7. Upper management was inaccessible to Quality Control.

8. Undue pressure was placed on Quality Control by construction.

9. Repairs were performed without approved procedures.

10. Construction engineers were unable to assure that construction was performed in accordance with drawings and procedures.

Q. Would you please state a summary of your conclusions for each of the allegations and what you did to arrive at these conclusions?

A. Yes. 1. The allegations that Civil Quality Control inspectors were not provided adequate training could not be substantiated. The form used for inspection of concrete placement had recently been revised and expanded. Training records indicated that some QA/QC and construction personnel had been trained in the new procedure. Some inspectors felt this training inadequate, but the adequacy of the training could not be evaluated.

2. The allegation that the nonconformance reporting system was inadequate was not substantiated by specific example, however, weaknesses of the system were suggested by conditions generally described by quality control inspectors in interviews.

3. The allegation of quality assurance reluctance to issue non-conformance reports could not be substantiated by specific example, however, generalizations presented by quality control inspectors during interviews indicated that this condition may exist.

4. The allegation of lack of support by quality assurance was not substantiated by specific example, however, the majority of quality control inspectors interviewed indicated that there was a lack of technical assistance provided by the onsite quality assurance engineer.

5. The allegation of poor document control could not be substantiated by specific example, however, interviews with quality control individuals tended to support this allegation and pointed to the shortage of experienced personnel in the quality assurance library as a major factor causing delays in the distribution of documents.

6. The allegation concerning inaccurate Cadweld as-built drawings for the Unit 2 fill slab was not substantiated by review of the drawings in the document vault.

7. The allegation concerning inaccessibility of upper management was generally supported by a majority of the quality control inspectors, however, no specific examples were provided to substantiate this allegation.

8. The allegation concerning undue pressure on quality control inspectors appeared to be valid in light of the friction previously identified between the quality control inspectors and construction personnel, in addition, the large number of items on the inspection "punch list" may have contributed to the felt pressure.

9. The allegation concerning the manner in which repairs were performed, without approved procedures, was not substantiated. The only

specific example documented wherein Brown and Root construction proceeded without approved procedures was the repair of a misaligned anchor bolt for waste monitor tanks. However, the Region IV representatives observed that a field request for engineering action (FREA) 1-C-1298, dated July 11, 1978, was issued with regard to the waste monitor tank anchor bolts. The FREA contained a description of the problem and the recommended disposition, including the method of repair.

10. The allegation concerning the inability of construction engineers to do their job of assuring that civil construction was performed in accordance with drawings and procedures could not be wholly substantiated, however, the large number of and types of deficiencies contained in inspection "punch lists" suggest that the inspections by craft and engineers was less than adequate. Although not directly addressing original design modification, the confusion surrounding the proper use of FREA's vs. NCR's is the only example the staff could locate which partially incorporated the concerns of Intervenor Contentions 1.7a., b. and c.

Q. Was lack of management support for quality control inspectors investigated?

A. Yes, interviews with numerous quality control inspectors evidenced a general feeling that upper management did not support quality control inspectors. However, inspectors spoke in vague generalities and were not sufficiently specific to substantiate particular instances where lack of management support occurred.

Q. Was undue pressure on quality control personnel investigated?

A. Yes, again through interviews with numerous quality control personnel, general allegations were set forth with respect to pressure on

quality control inspectors from construction to complete their tasks. However, as was previously described, the inspectors did not cite specific examples showing such pressure and were unanimous in their feeling that this pressure did not effect their job performance. In fact, several quality control inspectors stated that the pressure led them to be more strict in their inspections.

Q. What, if anything, was done as a result of all these vague generalities concerning problems in the QA/QC area?

A. The Region concluded that in light of the morale problem which was indicated by Report 78-12, a meeting should be held with the Applicant's management to express the concerns identified as a result of 78-12.

Q. I show you a letter, with attachments, dated August 25, 1978, to the Houston Lighting & Power Company, making reference to Report 78-13 and marked for identification as Staff Exhibit No. 9. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to the Houston Lighting & Power Company a report detailing the topics discussed in a meeting between Region IV Staff and Houston Lighting & Power Company on August 15, 1978, held as a result of 78-12.

Q. Are you able to summarize the topics discussed during the August 15, 1978 meeting?

A. Yes, as summarized in Report 78-13, the purpose of the meeting was to discuss alleged problems in the implementation of the site QA/QC civil program, quality control inspector morale and the adequacy of site QA/QC staffing.

Q. As a result of the concerns expressed by Region IV in this meeting, did the Applicant propose any changes in the operation of quality assurance and quality control at the South Texas Project site?

A. Yes, changes were implemented in the quality control training program to provide better training for inspectors. The procedures for nonconformance reporting (NCR) and field requests for engineering action (FREA) were revised to clarify the situations where each report is appropriate. In addition, nonconformance reports were serialized for accountability, QA/QC staffing levels were increased and the Brown and Root QA manager committed to participate more directly in site quality activities. Document control was also improved by additional staffing of the quality assurance library and persons were added to the staff of construction engineering to improve inspection of in process construction work. Both Houston Lighting & Power Company and Brown and Root agreed to step up their surveillance of in process construction activities.

Q. I show you a letter, with attachments, dated October 3, 1978, addressed to the Region IV Chief, Reactor Construction and Engineering Support Branch, United States Nuclear Regulatory Commission, from Houston Lighting & Power Company, marked for identification as Staff Exhibit No. 10. Are you able to identify this document and its attachments?

A. Yes, the letter set forth Houston Lighting & Power Company's commitments in response to the concerns expressed during the August 15, 1978 meeting, as just outlined, and the proposed corrective actions for each of the allegations and concerns set forth in Investigative Report 78-12 and Meeting Report 78-13.

Q. Did NRC Region IV subsequently check to see whether the corrective actions proposed by Houston Lighting & Power in its October 3, 1978, letter were in fact implemented?

A. Yes.

Q. I show you a letter, with attachments, dated November 15, 1978, to Houston Lighting and Power Company making reference to Report 78-16 and marked for identification as Staff Exhibit No. 11. Are you able to identify this document and its attachments?

A. Yes. The letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between October 24 and 27, 1978. Among other items inspected, this report follows up the commitments made by Houston Lighting and Power in its letter of October 3, 1978.

Q. Who conducted this inspection?

A. This investigation was performed by W. G. Hubacek, J. I. Tapia, and L. E. Martin, Reactor Inspectors, Region IV.

Q. Who reviewed this report?

A. This report was reviewed and approved by W. A. Crossman, Chief, Projects Section, and R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. Would you explain your findings and conclusions in this follow up investigation?

A. Yes, the corrective actions taken by the Licensee included the hiring of additional personnel to fill vacancies in the onsite QA/QC organization, an assistant to the QA manager had been hired, it was observed that quality control inspectors were present on the second shift during

construction, quality control inspectors had received additional training as evidenced by the reviewing of nine randomly selected personnel training files, and the quality assurance library was authorized to hire an additional four staff positions. In addition, the situation where field requests for engineering action were required, in contrast to nonconformance reports, was clarified in a memorandum dated October 24, 1978.

Q. I show you a letter, with attachments, dated September 15, 1978, to the Houston Lighting and Power Company, making reference to Report 78-14 and marked for identification as Staff Exhibit No. 12. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC investigation conducted between August 22 and 25, 1978.

Q. Who conducted this investigation?

A. J. J. Ward, Investigation Specialist, W. G. Hubacek, Reactor Inspector, William A. Crossman, Chief, Projects Section, Region IV.

Q. Who reviewed this report?

A. This report was reviewed and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. What was the reason for this investigation?

A. On August 17, 1978, during a meeting between the NRC, the Licensee, and executives of the Brown and Root Company, it was reported that a Brown and Root construction person alleged he had been approached by a Brown and Root Quality Control Inspector who stated that he could help construction get jobs moving if he were "taken care of."

Q. How was the investigation into this allegation conducted?

A. The Region IV investigative team traveled to the site and interviewed the Quality Control Inspector allegedly soliciting bribes. The Quality Control Inspector denied soliciting bribes and counteralleged that, using him as an example, Brown and Root sought to intimidate other Quality Control Inspectors in order that they not report nonconforming situations. The investigative team then examined both allegations.

The first allegation essentially was one man's word against another. The allegation was denied by the Quality Control Inspector and the construction worker was equally vehement in his assertion that the solicitation had been committed. No witness could corroborate either position.

As to the counter allegation, that as a group, Quality Control Inspectors were intimidated, all of the Quality Control Inspectors interviewed denied that any items of nonconformance would be overlooked by them for any reason, including fear of losing their jobs. In addition, no Quality Control Inspector admitted having knowledge of attempted bribery or past incidents of nonconformances having been purposely overlooked in exchange for material favors.

Q. I show you a letter, with attachments, dated October 6, 1978 to Houston Lighting and Power Company making reference to Report 78-15 and marked for identification as Staff Exhibit No. 13. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC investigation conducted between September 11 and 14, 1978, as well as, a Notice of Violation.

Q. Who conducted this investigation?

A. R. E. Hall, Chief, Engineering Support Section and A. B. Rosenberg, Reactor Inspector, Region IV.

Q. Who reviewed this report?

A. This report was reviewed by W. G. Hubacek, Reactor Inspector, and approved by R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. What was the reason for this investigation?

A. On September 9, 1978, Region IV received a telephone call from an individual who identified himself as an employee at the South Texas Project and who reported specific allegations regarding the South Texas Project civil construction and quality assurance programs, as well as, specific irregularities in the Cadwelding procedures.

Q. First, please define Cadwelding.

A. Cadwelding is a process whereby two reinforcing bars are mechanically bonded together by way of a Cadweld sleeve. The two reinforcing bars are placed end to end and the ends to be joined are inserted in the cadweld sleeve. A filler metal is then ignited and the molten filler metal fills the space between the reinforcing bars and the sleeve, thus forming a mechanical bond. In the cadweld process, in contrast to a true weld, the rebar are not fused together.

Q. How was the investigation into these allegations conducted?

A. An onsite review was performed of Cadwelding procedures, Cadwelding records were examined and construction site procedures were compared to procedures set forth in the construction specifications.

Q. What conclusions were reached as a result of this investigation?

A. It was concluded that the Cadwelding procedures were not in conformity with specifications and that there was a lack of quality control inspectors covering the Cadwelding operation. A Notice of Violation was

issued for these irregularities. In addition, a stop work order was issued by the licensee on September 13, 1978, on concrete placement scheduled in the Unit 1 containment area, until such time that existing Cadweld splices were checked to assure they were properly installed. The concerns incorporated in Intervenor Contention 1.6 are, in part, addressed by this report.

In addition, it should be noted that the concerns incorporated in Intervenor Contention 1.3. were identified as an unresolved item in this report. Subsequently, it was determined that missing Field Sketch FSQ-030 was never prepared. Brown and Root, however verified that the Cadwelds were satisfactorily in place, but could not verify individual Cadwelds exact as-built location. Such verification is not an NRC requirement. This matter was resolved in I&E Report 78-18, which has been marked for identification as Staff Exhibit No. 14.

Q. I show you a letter dated November 3, 1978, from Houston Lighting and Power Company to W. C. Seidle, of NRC, Region IV, and marked for identification as Staff Exhibit No. 15. Are you able to identify this document?

A. Yes, this letter sets forth Houston Lighting and Power Company's proposed corrective action in response to the NRC investigative findings in Report 78-15.

Q. Are you able to summarize the corrective action proposed?

A. Yes, a visual Cadweld reinspection program was instituted for Cadwelds in place, a training session for all Cadwelders and inspectors had been given to assure proper understanding of the procedural requirements in Cadweld construction and inspection, Cadweld inspectors had been assigned to both shifts, and construction procedures were revised to require Cadwelder surveillance be performed each shift rather than only once each 24 hour period.

Q. Did the NRC Regional inspection staff ever conduct a followup investigation to determine whether Houston Lighting and Power Company had in fact implemented the corrective action it represented it would undertake in its letter of November 3, 1978?

A. Yes.

Q. I show you a letter, with attachments, dated December 21, 1978, to Houston Lighting & Power Company making reference to Report 78-17 and marked for identification as Staff Exhibit No. 16. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between December 5 and 8, 1978. Among the items inspected, were those items committed to in response to the items of noncompliance set forth in investigation report 78-15.

Q. Who conducted this inspection?

A. W. G. Hubacek, Reactor Inspector, and D. P. Tomlinson, Reactor Inspector, Region IV.

Q. Who reviewed and approved this inspection?

A. This inspection was reviewed and approved by W. A. Crossman, Chief, Projects Section, and R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. From your inspection were you able to determine whether Houston Lighting and Power Company implemented the corrective action it proposed in its letter of November 3, 1978?

A. Yes, procedures had been revised to require inspection and surveillance of Cadweld splicing activities on each shift. Review of records

from September 18, 1978 to December 5, 1978 revealed that Brown and Root inspection personnel and licensee surveillance personnel were present on both shifts. In addition, 20 Cadweld splices were cut out and pull tested and each met the acceptance criteria. All other actions committed to by the Licensee were verified.

Q. Were there any further construction deficiencies during 1978 relevant to the issues or contentions which are the subject of this hearing?

A. Yes, during October of 1978, the NRC was notified by the Applicant through 50.55e letters of a surveying error and concrete voids.

Q. What is a 50.55e letter?

A. Under 10 C.F.R. 50.55e, the Applicant is under an obligation to notify the NRC of each deficiency found in design and construction which, were it to remain uncorrected, could affect adversely the safe operations of the plant. The Applicant must notify the NRC within 24 hours of each reportable deficiency, and further, must submit a written report on the deficiency within 30 days. The 30 day report must include a description of the deficiency, an analysis of the safety implications and the corrective action taken.

Q. Would you please summarize the nature of the deficiencies reported in October of 1978, the corrective action taken and identify the specific contentions in this hearing which these letters addressed.

A. Yes, in regard to Intervenor Contention 1.1, on October 4, 1978, the Licensee notified the NRC of a dimensional error in the base mat of the Unit 2 mechanical-electrical auxiliary building. The error occurred because, rather than using the containment/reactor center line as the point of reference to lay out this building, the Applicant laid out the building using column

line R1 in the fuel handling building. Apparently, column line R1 is offset one foot to the west of the containment/reactor center line, and thus, the east edge of the mechanical-electrical auxiliary building was laid out one foot short of design. The cause of this defect was the failure of the field engineer to properly check survey calculations.

In its final report, dated October 29, 1979, the Applicant stated that the equipment within the mechanical-electrical auxiliary building had been rearranged to compensate for the one foot dimensional error. The redesign affected only the west one-fourth of the building and the one foot error was compensated by eliminating excess floor space around the layout of systems and equipment. The general arrangement of equipment within the redesigned area remained the same. It was concluded that no safety hazards existed as a result of the redesigned mechanical-electrical auxiliary building.

To preclude recurrence, independent verification of a building layout will be double checked by additional supervision and reviewing calculations.

With respect to Intervenor Contention 1.2, on October 20, 1978, the Applicant notified the NRC of the existence of voids in the concrete within lift 15 on the outer surface behind the liner plate in the Unit 1 reactor containment building exterior wall from elevation 127 to 138. This deficiency was reported to be caused by the cumulative affects of inadequate planning, an unusually long pour time, longer than normal slick lines and a concrete pump breakdown. It was also stated that procedural provisions for stopping work due to problems were not exercised by construction or quality control. Brown & Root conducted an investigation of lift 15 voids to determine the extent and location of unacceptable areas. The placement geometry and history were evaluated and suspect areas behind the polar crane brackets

were identified and holes were drilled. Exploratory drilling, sounding and visual examination of holes using fiber optics were the primary methods implemented to determine the extent and location of the unacceptable areas. Calculations based upon this investigation indicated that there were primarily three locations requiring grout injection behind the liner plate. Masterflow 814 grout was selected as an acceptable material for filling the voids based on a program of laboratory and field tests. Following grout injection 12 locations were selected at random for drilling to determine whether there were any ungrouted voids and to inspect the quality of the grout in place, including the grout-concrete interface condtion. No additional voids were found and interface between grout and concrete was found to be tight.

Corrective action taken to prevent recurrence of similar voids during future concrete placement included retraining of construction supervisors and engineers along with quality control personnel relative to problems which contribute to the formulation of voids. Training included consideration of equipment failure, excess placement time, and proper procedures to be followed in such an event.

Also in connection with Intervenor Contention 1.2, it should be noted at this time that by a 50.55e letter, dated June 18, 1979 the Applicant again notified the NRC of voids in the concrete behind the liner plate in the eighth lift of Unit 1 reactor containment building. In response to the voids in lift 8, similar investigative procedures and remedies were implemented as previously testified to in reference to lift 15.

Q. Did there come a time when the NRC investigated allegations incorporated in Intervenor Contention 1.5, which states:

"There are steel reinforcement bars which are missing from the concrete around the equipment doors in the containment and such bars are missing from the containment structures as well, indicating violations of 10 C.F.R Part 50, Appendix B, Sections X, XV and XVI."

A. Yes. During an investigation conducted between June 12-14, 1979, Mr. William Hubacek, Reactor Inspector, Region IV, checked the records for evidence of missing radial reinforcing bars around the equipment hatch in Unit 1, Reactor Containment Building and further spoke with all persons whose names appeared on the relevant documents.

Q. What were the results of that investigation?

A. The pours cards examined revealed no irregularities nor did other documents checked. The various individuals interviewed had no knowledge of any re-bar missing from any structure, including containment. For additional follow-up activity see I&E Report 80-08.

Q. I show you a letter, with attachments, dated February 16, 1979 to Houston Lighting and Power Company making reference to Report 79-01 and marked for identification as Staff Exhibit No. 17. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC investigation conducted between January 23 and February 2, 1979, together with a Notice of Violation.

Q. Who conducted this investigation?

A. This investigation was performed by W. G. Hubacek, Reactor Inspector, R. E. Hall, Chief, Engineering Support Section and J. J. Ward, Investigation Specialist, Region IV.

Q. Who reviewed this report?

A. This report was reviewed by W. A. Crossman, Chief, Projects Section, and R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. What was the reason for this investigation?

A. Between January 13 and 22, 1979, Region IV received several telephone calls from an individual who made specific allegations in regard to the South Texas Project construction activity, quality assurance program and the Cadwelding documentation procedure.

Q. How were these allegations investigated?

A. The investigation team reviewed record copies of Cadwelding check lists and interviewed Cadweld inspectors. In addition, numerous licensee and construction personnel were interviewed with respect to construction and documentation procedures.

Q. What conclusions were arrived at as a result of this investigation?

A. It was determined from a review of the Cadweld records that Cadweld examination checklists were being transcribed by individuals other than the onsite Cadweld inspectors. It was determined that this activity affects quality control, and accordingly, a notice of violation was issued in connection with Inspection Report 79-01 for failure to provide procedures for a quality control activity. All other allegations were not substantiated. The concerns incorporated in Intervenor Contention 1.6. are further addressed by this report.

Q. Did Houston Lighting and Power Company respond to the item of noncompliance set forth in Inspection Report 79-01?

A. Yes.

Q. I show you a letter, dated March 12, 1979, from Houston Lighting and Power Company to NRC, Region IV, and marked for identification as Staff Exhibit No. 18, and ask you if you are able to identify this letter.

A. Yes, this letter submitted the response of Houston Lighting and Power Company to the NRC Notice of Violation, accompanying Inspection Report 79-01.

Q. Are you able to summarize the corrective action proposed?

A. Yes, the Licensee proposed a procedure be followed to control the transcription of Cadwelding examination checklist records.

Q. Did the NRC Region IV conduct a followup investigation to determine whether Houston Lighting and Power Company had implemented the procedures it represented it would undertake in its letter of March 12, 1979?

A. Yes.

Q. I show you a letter, with attachments, dated May 1, 1979, to Houston Lighting and Power Company making reference to Report 79-06 and marked for identification as Staff Exhibit No. 19. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between April 17 and 20, 1979. Among the items inspected, was the Licensee's corrective action in response to the Notice of Violation accompanying Report 79-01.

Q. Who conducted this inspection?

A. This inspection was performed by W. G. Hubacek, Reactor Inspector, Region IV.

Q. Who approved this inspection?

A. This inspection was approved by W. A. Crossman, Chief, Project Section, Region IV.

Q. Are you able to summarize the nature of the inspection and the conclusions reached in regard to the earlier violation?

A. Yes, the Inspector observed that procedures had been revised in the Cadwelding process to include instructions for the transcription of data in Cadwelding records.

Q. I show you a letter, with attachments, dated April 11, 1979, to Houston Lighting and Power Company making reference to Report 79-04 and marked for identification as Staff Exhibit No. 20. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing results of an NRC inspection conducted between March 20 and 23, 1979, together with a Notice of Violation.

Q. Who conducted this inspection?

A. The inspection was performed by W. G. Hubacek, Reactor Inspector, L. D. Gilbert, Reactor Inspector, R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. Who reviewed this report?

A. This report was reviewed and approved by W. A. Crossman, Chief, Projects Section, and R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. What was the reason for this inspection?

A. This was a routine, unannounced inspection of construction activity at the South Texas Project.

Q. Did this inspection result in any items of noncompliance?

A. Yes, on March 22, 1979, during observation of concrete placement, an I&E inspector observed pools of standing water between the interior form

and the water stop. Brown and Root quality control procedures specify that before depositing concrete, foreign materials and standing water shall be removed from the area of placement. In addition, on two occasions, during the initial phase of concrete placement, concrete was observed being moved laterally, by vibrators, by as much as eight to ten feet.

Q. Did Houston Lighting and Power Company respond to these items of noncompliance and make certain commitments regarding corrective action?

A. Yes.

Q. I show you a letter, dated May 3, 1979, to NRC, Region IV, from Houston Lighting and Power Company, and marked for identification as Staff Exhibit No. 21, and ask you if you are able to identify this letter.

A. Yes, this letter conveyed to NRC, Region IV, Houston Lighting and Power Company's response to NRC Inspection Report 79-04 and the items of noncompliance set forth in that report.

Q. Are you able to summarize the corrective action Houston Lighting and Power committed to as a result of the items of noncompliance set forth in Report 79-04?

A. Yes, Houston Lighting and Power Company committed that a training session had been held April 11, 1979, for the appropriate construction craft personnel covering concrete placement and surface preparation. In addition, the Licensee represented that additional surveillance of concrete preplacement and placement will be performed to circumvent this problem.

Q. Did the NRC Region Staff conduct a followup inspection to verify that Houston Lighting and Power Company performed the corrective action it committed to in its letter of May 3, 1979?

A. Yes.

Q. I show you a letter, with attachments, dated August 3, 1979, to Houston Lighting and Power Company making reference to Report 79-12 and marked for identification as Staff Exhibit No. 22. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between July 9 and 19, 1979. During the inspection, personnel training records were reviewed to determine whether the April 11, 1979, training session had occurred.

Q. What conclusion was reached with respect to the corrective action the Licensee represented it would undertake as a result of the Notice of Violation issued in connection with 79-04?

A. The training records indicated that on April 11, 1979, the training session took place addressing adverse consequences which may result from the failure to remove water from construction joints and from over consolidation of concrete. The report also deals with the repair of voids in the concrete in the Reactor Containment Building of Unit 1.

Q. I show you a letter, with attachments, dated April 30, 1979, to Houston Lighting and Power Company making reference to Report 79-05 and marked for identification as Staff Exhibit No. 23. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between April 2 and 6, 1979, together with a Notice of Violation.

Q. Who conducted this inspection?

A. This inspection was performed by W. G. Hubacek, Reactor Inspector, and L. E. Martin, Reactor Inspector, Region IV.

Q. Who reviewed this report?

A. This report was reviewed by W. A. Crossman, Chief, Projects Section, and R. E. Hall, Chief, Engineering Support Section, Region IV.

Q. What was the reason for this inspection?

A. This was a routine, unannounced inspection of construction activities, including observation of housekeeping and equipment storage at the South Texas Project.

Q. Were any items of noncompliance identified as a result of this investigation?

A. Yes, a Notice of Violation was attached to Report 79-05 due to Houston Lighting and Power Company's failure to follow procedures for storage of material and failure to follow procedures for preparation of nonconformance reports.

Q. Would you summarize what gave rise to these violations?

A. Yes, during inspection of the storage area on April 4, 1979, the Inspector observed that the Boron Recycle Evaporator stored in the Unit 1 Mechanical Electrical Auxiliary Building, was wet as a result of water draining from work areas located above. In addition, as documented in the maintenance records on February 9, 1979, a Residual Heat Removal Pump Motor was found to be wet and the motor terminal connection box was observed to be full of water.

The Westinghouse "Technical Manual and Operating Instructions" requires that the Boron Recycle Evaporator be stored in a warm, dry place and the Brown and Root quality assurance procedures require that the description of a nonconforming condition provide sufficient detail to establish the sequence of events pertaining to the nonconformance and an accurate description of

the nonconformance. In the applicable nonconformance report, no reference was made to the motor terminal connection box being full of water or the possibility of water being in the motor. Accordingly, these two incidents constituted infractions and a Notice of Violation was issued.

Q. Did Houston Lighting and Power Company respond to this Notice of Violation and make certain representations regarding corrective action?

A. Yes.

Q. I show you a letter dated May 25, 1979, from Houston Lighting and Power Company to Region IV, marked for identification as Staff Exhibit No. 24 and ask if you are able to identify this letter.

A. Yes, this letter constitutes Houston Lighting and Power Company's response to the items of noncompliance attached to 79-05.

Q. Are you able to summarize the corrective action committed to by Houston Lighting and Power?

A. Yes, the immediate corrective action consisted of covering the Boron Recycle Evaporator with an interim structure that met the storage requirements. On May 4, 1979, the interim structure was replaced with a durable structure also meeting the storage requirements. In addition, the nonconformance report in reference to the Residual Heat Removal Pump Motor was reissued and revised giving a more detailed account of the conditions identified. Also, by memorandum, all quality control and quality assurance engineering personnel had been instructed that a proper nonconformance report must include a description of the sequence of events pertaining to the nonconformance.

Q. Did the NRC region staff subsequently conduct a followup inspection to determine whether Houston Lighting and Power had implemented the

corrective action it represented it would undertake in its letter of May 25, 1979?

A. Yes.

Q. I show you a letter, with attachments, dated November 14, 1979, and making reference to Report 79-17 and marked for identification as Staff Exhibit No. 25. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting and Power Company a report detailing the results of an NRC inspection conducted between October 24 and 26, 1979. Among the items inspected, the NRC Staff followed up the items of noncompliance set forth in 79-05 to assure implementation.

Q. Who conducted this inspection?

A. This inspection was conducted by W. G. Hubacek.

Q. Who reviewed this inspection?

A. This inspection was reviewed by H. S. Phillips, Resident Reactor Inspector, Projects Section, Region IV and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. What findings and conclusions were made by the Reactor Inspector with respect to the corrective action taken in regard to the items of noncompliance previously set forth in Inspection Report 79-05?

A. The inspector reviewed the corrective actions described in the Licensee's response dated May 25, 1979 and reviewed maintenance and inspection records for the Boron Recycle Evaporator, as well as observing that other equipment stored in the Mechanical Electrical Auxiliary Building met specifications.

Q. I show you a letter, with attachments, dated June 8, 1979, to Houston Lighting & Power Company making reference to Report 79-09, and marked for identification as Staff Exhibit No. 26. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC investigation conducted between May 15 and 23, 1979.

Q. Who conducted this investigation?

A. W. G. Hubacek and W. A. Crossman, Region IV.

Q. Who reviewed this report?

A. This report was reviewed and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. What was the reason for this investigation?

A. On May 1, 2, and 7, 1979, Region IV received telephone calls from an individual who made allegations that the responsible quality control inspector refused to sign a concrete pour card for lift 5 of the Unit 2 Reactor Containment Building, and further, that there were widespread discrepancies in the documentation of Cadweld as-built locations.

Q. How was the investigation into these allegations conducted?

A. An onsite investigation was conducted in May of 1979, all quality control inspectors involved in the placement of lift 5 and their supervisors were interviewed and the pour cards for lift 5 were reviewed. The responsible quality control inspector had in fact refused to sign the pour card due to preplacement debris; however, following some additional preplacement preparation by construction personnel, the quality control supervisor signed the concrete pour card. It could not be established whether or not the

final cleanliness of the area was acceptable as it was no longer accessible for visual inspection. This procedure was not in violation of any specification or regulation as the supervisor had authority to sign the pour card. This report addresses, in part, the concerns incorporated in Intervenor Contention 1.7.d.

As to the Cadweld as built records, the investigation team reviewed approximately 30 folders of Cadweld records against information provided in the allegation. Most of the allegation was substantiated, however, discrepancies were already known to the Applicant and corrective action was underway. In addition, the Applicant had documented this situation by speed letters, dated September 11 and 14, 1978. This further addresses Contention 1.6.

Q. Was any corrective action mandated as a result of this investigation?

A. No, however, it was noted that the Applicant's progress with respect to correcting Cadweld records would be inspected during subsequent I&E inspections.

Q. I show you a letter, with attachments, dated October 5, 1979, to Houston Lighting & Power Company making reference to Report 79-13 and marked for identification as Staff Exhibit No. 27. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted between August 6 and 10, 1979.

Q. Who conducted this inspection?

A. This inspection was conducted by W. G. Hubacek, J I Tapia, H. S. Phillips, all of Region IV and L. E. Foster of Region II.

Q. Who reviewed this report?

A. This report was reviewed and approved by W. A. Crossman and R. E. Hall, Region IV.

Q. What was the reason for this inspection?

A. This was a special, announced Mid-Term Quality Assurance inspection to determine the establishment and implementation of the Applicant's quality assurance program.

Q. How was this inspection and review conducted?

A. An onsite review encompassed review of the QA management structure, procurement control procedures, document control procedures, design control procedures, vendor surveillance, audits, QA/QC organization and site construction activities.

Q. What conclusions were reached as a result of this inspection?

A. Of the eight areas inspected, five items of noncompliance were identified in three areas. Specifically, the Applicant was cited for its failure to follow procedures for maintaining QA manuals, failure to follow procedures for performing site audits, failure to delineate organizational changes in the QA manual, failure to maintain completed audit checklists in the audit files, and failure to destroy or stamp as deleted QA procedures no longer in effect. In addition to these matters the inspection also looked at Cadweld inspection records and Cadwelders' qualifications.

Q. I show you a letter dated November 2, 1979, from Houston Lighting & Power Company to the NRC, Region IV, and marked for identification as Staff Exhibit No. 28. Are you able to identify this document?

A. Yes, this letter sets forth Houston Lighting & Power Company's proposed corrective action in response to NRC inspection findings set forth in Report No. 79-13.

Q. Was the proposed corrective action deemed sufficient by Region IV staff?

A. No, by letter dated January 31, 1980, Houston Lighting & Power was notified that its letter of November 2, 1979, did not adequately address all of the items of noncompliance cited in the Notice of Violation, accompanying 79-13.

Q. I show you a letter marked for identification as Staff Exhibit No. 29 and ask you whether this is the NRC letter of January 31, 1980, asking for clarification of the corrective action proposed by Houston Lighting & Power?

A. Yes.

Q. Did Houston Lighting & Power supply further response to the Notice of Violation attached to Inspection Report 79-13?

A. Yes, by letter dated February 26, 1980, Houston Lighting & Power revised its corrective action to satisfy the Staff concerns set forth in its letter of January 31, 1980.

Q. I show you a letter from Houston Lighting & Power Company to Region IV, dated February 26, 1980, and marked for identification as Staff Exhibit No. 30 and ask you if this is the letter wherein Houston Lighting & Power sets forth its additional corrective action.

A. Yes.

Q. Did the NRC Region inspection staff ever conduct a followup inspection to determine whether Houston Lighting & Power had implemented

the corrective action it committed to in its letters of November 2, 1979, and February 26, 1980?

A. Yes.

Q. I show you a letter, with attachments, dated May 19, 1980, to Houston Lighting & Power Company making reference to Report 80-06 and marked for identification as Staff Exhibit No. 31. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted in April of 1980. Among the items inspected, were those items committed to in response to four of the five items of noncompliance set forth in Investigative Report 79-13.

Q. Who conducted this inspection?

A. H. S. Phillips, Resident Reactor Inspector.

Q. Who reviewed and approved this inspection?

A. This inspection was reviewed and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. From your inspection were you able to determine whether Houston Lighting & Power implemented the corrective action it proposed?

A. Yes, from a review of the QA manual and audit records it was determined that three of the five items of noncompliance previously set forth were considered corrected and closed. The Resident Reactor Inspector reviewed Section 16.5 of the new QA Manual and found that it described the use of supplements for site specific QA manuals. The requisite auditor qualifications were set forth in Section 15.6 of the QA Manual. It was further determined that the QA manuals were currently revised, corrected

and being properly maintained; and lastly, that with respect to the missing audit, Audit 77-202, a re-audit had been accomplished. Corrective action relative to the remaining two items of noncompliance were verified in I&E Reports 81-06 and 81-09.

Q. I show you a letter, with attachments, dated October 16, 1979, to Houston Lighting & Power Company making reference to Report 79-14 and marked for identification as Staff Exhibit No. 32. Are you able to identify this document and attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a Report detailing the results of an NRC investigation conducted between September 4 and 14, 1979, together with a Notice of Violation.

Q. Who conducted this investigation?

A. This investigation was performed by W. G. Hubacek, Reactor Inspector and H. S. Phillips, Resident Reactor Inspector, Region IV.

Q. Who reviewed and approved this report?

A. This report was reviewed and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. What was the reason for this investigation?

A. During the site inspection resulting in 79-13, the NRC inspector was informed by Houston Lighting & Power of alleged incidents of intimidation of quality control inspectors by Brown & Root construction personnel. In addition, Region IV received information concerning alleged QA/QC irregularities at the South Texas Project from confidential sources. Information contained in this Report directly impacts upon Intervenor Contentions 1.4., 1.5 and 1.7e.

Q. How were these allegations investigated?

A. An onsite investigation occurred during September of 1979, construction and quality control personnel were interviewed and quality control records were inspected.

Q. As a result of this investigation, were any items of noncompliance cited?

A. Yes, the Applicant was cited for an infraction; specifically, failure to follow procedures for release of a stop work notice. In addition, one deviation was identified for Houston Lighting and Power's failure to include the date and identification of the person entering supplemental information on an inspection report.

Q. Please summarize the allegations and NRC inspection findings relative to Contentions 1.4, 1.5 and 1.7e.

With respect to Intervenor Contention 1.4, it was alleged that the waterproofing membrane seals in reactor containment building, Unit 1, were installed at night, without proper QC inspection prior to the placement of backfill, and apparently, it has been assumed the seals were damaged. The NRC investigation team interviewed five individuals who were involved or had previously been involved in inspection of waterproofing membrane seal installation. All of the individuals stated that they had no knowledge of the placement of backfill against the membrane seals prior to proper completion of membrane inspections by quality control. During review of documents relevant to membrane installation, it was uncertain whether 100% quality control verification was required for this process or a lesser degree of verification. In any event, the allegation was not substantiated and the inspection procedures were considered unresolved pending clarification.

With respect to Intervenor Contention No. 1.5, it was alleged that 116 Cadwelds were missing from lift 5 of reactor containment building, Unit No. 2. This nonconformance was previously reported to the NRC in accordance with 10 CFR 50.54(e) by Brown & Root Noncomformance Report S-C2228, dated April 26, 1979. The 114 Cadwelds were shown to be in lift 5 due to errors made by quality control personnel in the frame of reference used to determine as built locations. Correct locations of the cadwelds are expected to be established by means of the computer-assisted records review.

With respect to Intervenor Contention 1.7e, two allegations are relevant. First, it was alleged that two quality control inspectors were intimidated by five construction persons. The quality control persons involved stated five construction persons threaten them and intended to hinder their performance as quality control inspectors. The five construction persons involved denied making threats or using abusive language in direct conversation with the quality control inspectors. Further investigation revealed no evidence that any inspector was fired for doing his job, nor that this incident represented a pattern of intimidation designed to prevent quality control inspectors from performing their functions. Further, there was no indication that the two quality control inspectors harassed failed to perform their job functions.

Secondly, it was alleged that Brown & Root quality control inspectors were involved in continuous card games during working hours for several months during 1977. The allegation stated that the quality control inspectors left the card game only to sign inspection forms when requested by

construction without performing the requisite inspections of safety related work. The allegation could not be substantiated. The investigative team interviewed nine individuals who were present at the site during the alleged card games, but none were aware of the 1977 card games. However, two of the individuals stated that such card games took place in 1976, but these persons also stated that the games were not of the scope alleged and did not have adverse impact on the performance of quality control inspections.

Q. I show you a letter dated November 16, 1979, to the NRC, Region IV, from Houston Lighting & Power Company marked for identification as Staff Exhibit No. 33 and ask you whether you are able to identify this document.

A. Yes, this is Houston Lighting & Power Company's initial proposal for corrective action in response to the NRC investigation of September 4 and 14, 1979.

Q. Are you able to summarize the corrective action proposed by Houston Lighting & Power?

A. Yes, with respect to Houston Lighting & Power's failure to follow procedures for release of a stop work order, the site quality assurance manager was instructed in the appropriate procedures and reminded of the importance of complying with all program requirements. With respect to the failure of an Applicant employee to include the date of entry and his name on a supplemental entry on an inspection report, the delinquent individual confirmed the entry and signed and dated it "late entry" on September 13, 1979. In addition, an inter-office memo, dated April 13, 1979, was issued to all QA/QC personnel stating that the identification of the individual making an entry and the date of such entry are required for all corrections and additions to documents.

Q. Was the corrective action proposed by Houston Lighting & Power sufficient?

A. No, by letter dated January 11, 1980, the NRC, Region IV, asked for additional information before approving the proposed corrective actions.

Q. I show you a letter dated January 25, 1980, from Houston Lighting & Power to the NRC, Region IV, and marked for identification as Staff Exhibit No. 34. Are you able to identify this document?

A. Yes, this is the letter from Houston Lighting & Power to Region IV supplementing the Applicant's November 16, 1979 response.

Q. Are you able to summarize the supplemental information provided?

A. Yes, in addition to what has previously been stated, the Applicant reissued instructions with respect to making changes and late entries on QA documentation and Brown & Root QC personnel were reinstructed on the proper methods for making changes and late entries on QA documentation.

Q. Did Region IV have reason to follow up the committed to actions to determine whether the corrective action was implemented?

A. Yes.

Q. I show you a letter, with attachments, dated April 30, 1980, to Houston Lighting & Power Company making reference to Report 80-07 and marked for identification as Staff Exhibit No. 35. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company, among other things, a report detailing the results of an NRC inspection conducted between April 8 and 11, 1980. Among the items inspected, were those items committed to in response to the Notice of Violation attached to Inspection Report 79-14.

Q. Who conducted this inspection?

A. This inspection was conducted by W. G. Hubacek, Reactor Inspector, Region IV.

Q. Who reviewed and approved this inspection?

A. This inspection was reviewed and approved by W. A. Crossman, Chief, Projects Section, Region IV.

Q. From your inspection, were you able to determine whether Houston Lighting & Power implemented the corrective action it proposed?

A. Yes, the NRC Inspector observed that the inspection dated November 9, 1978, was signed and dated on September 13, 1979 by the individual who had made the supplemental entry and, in addition, the Applicant had prepared instructions entitled "Construction/QA Documentation" dated January 30, 1980, which addressed the handling of corrections and additions to construction and QA generated documents. Also, the I&E Inspector ascertained that the Brown & Root site QA manager had been informed in writing with respect to the need for following procedural requirements for the release of stop work notices.

Q. I show you a letter, with attachments, dated October 19, 197[illegible], to Houston Lighting & Power Company making reference to Report 79-15 and marked for identification as Staff Exhibit No. 36. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted between September 17 and 30, 1979, together with a Notice of Violation.

Q. Who conducted this inspection?

A. H. S. Phillips, Reactor Inspector, Region IV.

Q. Who approved this inspection and report?

A. W. A. Crossman, Chief, Projects Section, Region IV.

Q. What were the reasons for this inspection?

A. This was a routine inspection by the Resident Reactor Inspector of safety related construction activities, including the placement of containment structural concrete.

Q. As a result of your inspection, was the Applicant cited for any items of noncompliance?

A. Yes, the Applicant was cited for failure to follow concrete consolidation procedures in that during the placement of pour No. CS2-W7 in the Reactor Containment Building, one of the vibrator operators was not vibrating the concrete properly in that the vibrator did not penetrate completely through the upper layer and at least 6 inches into the next lower layer to assure thorough binding. This was in contradiction to specifications and constituted an infraction.

Q. I show you a letter to NRC, Region IV, dated November 13, 1979, from Houston Lighting & Power Company and marked for identification as Staff Exhibit No. 37 and ask if you are able to identify this letter?

A. Yes, this letter sets forth the response of Houston Lighting and Power concerning the Notice of Violation accompanying Report 79-15. Houston Lighting & Power Company did not propose corrective action, as it contended its vibrator operator was performing his job according to specifications and that the item of noncompliance was a result of a misunderstanding and overreaction.

Q. I show you a letter from NRC, Region IV, to Houston Lighting & Power Company, dated January 24, 1980, and marked for identification as Staff Exhibit No. 38, and further ask if you are able to identify this.

A. Yes, as a result of Houston Lighting & Power's letter of November 13, 1979, Region IV concluded that additional information was required. It was concluded that Houston Lighting & Power's response did not address measures that will be taken to assure compliance with concrete consolidation procedures. In addition, the Region did not concur with the Applicant's position that the particular item of noncompliance was the result of a misunderstandings or overreaction.

Q. I show you a letter dated February 12, 1980 from Houston Lighting & Power to Region IV and marked for identification as Staff Exhibit No. 39 and ask you whether this letter sets forth the additional corrective action proposed by the Applicant.

A. Yes.

Q. Are you able to summarize the proposed corrective action?

A. Yes, the concrete placement identified in 79-15 was revibrated to the satisfaction of the Resident Reactor Inspector, and further, Brown & Root construction personnel were to be retrained every 90 days on the basis of current vibrator procedures.

Q. Did the NRC, Region IV, have reason to follow up on the Applicant's representation to determine whether the proposed corrective action had in fact occurred?

A. Yes.

Q. I show you a letter, with attachments, dated November 6, 1980, to Houston Lighting and Power Company making reference to Report 80-24 and

marked for identification as Staff Exhibit No. 40. Are you able to identify this documents and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted between August 18 and September 19, 1980. Among the many items inspected within this report were those items committed to in response to the item of noncompliance set forth in Inspection Report 79-15.

Q. Who conducted this inspection?

A. J. I. Tapia, Reactor Inspector, Engineering Support Section, Region IV and D. P. Tomlinson, Reactor Inspector, Region IV.

Q. Who reviewed and approved this report?

A. W. A. Crossman, Chief, Projects Section and R. E. Hall, Chief, Engineering Support Section, both of Region IV.

Q. What findings and conclusions were reached in reference to the item of noncompliance set forth with 79-15?

A. It was inspected and confirmed that Brown & Root requires all vibrator operators to be retrained every 90 days and incorporates the training requirements contained in the American Concrete Institute Manual.

Q. I show you a letter, with attachments, dated December 12, 1979, to Houston Lighting & Power Company making reference to Report 79-16 and marked for identification as Staff Exhibit No. 41. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted between October 1 and 12, 1979, together with a Notice of Violation.

Q. Who conducted this inspection?

A. H. S. Phillips, Resident Reactor Inspector.

Q. Who approved this inspection?

A. W. A. Crossman, Chief, Projects Section, Region IV.

Q. What gave rise to this inspection?

A. This was a routine inspection by the Resident Reactor Inspector of safety related construction activities.

Q. What was the nature of the item of noncompliance identified as a result of this inspection?

A. Based on the results of the NRC Inspection, the Applicant was cited for its failure to include appropriate quantitative or qualitative acceptance criteria in instructions, procedures or drawings. This was determined to be an infraction.

Q. Would you set forth the basis for this infraction.

A. Yes, on September 17, 1979, the Reactor Inspector observed the placement of pour No. CS2-W7. The Resident Reactor Inspector found excessive free standing water on the prepared joint and closer examination revealed a significant amount of water. The Resident Reactor Inspector also determined that the specifications and procedures failed to give quantitative or qualitative acceptance criteria to define what constitutes the saturated surface dry condition, in regard to the amounts of free standing water present prior to concrete placement.

Q. I show you a letter dated January 15, 1980, from Houston Lighting and Power to NRC, Region IV, and marked for identification as Staff Exhibit No. 42, and further ask if you are able to identify this letter.

A. Yes, this letter submitted Houston Lighting & Power Company's proposed corrective action as a result of the Notice of Violation attached to 79-16.

Q. Are you able to summarize the proposed corrective action and state whether it was deemed acceptable?

A. Yes, the Applicant stated that the Brown and Root concrete construction specifications were being revised to state that no standing water will be allowed on construction joints unless it is documented and approved by the Construction Engineer. However, Region IV did not consider the Applicant's response to be adequate, and accordingly, by letter dated March 3, 1980, requested additional information in regard to the criteria for engineering action.

Q. I show you a letter dated March 3, 1980 and marked for identification as Staff Exhibit No. 43 and further ask you if you can identify this as the NRC, Region IV, request for additional information.

A. Yes.

Q. I show you a letter dated April 2, 1980, from Houston Lighting & Power to the NRC, Region IV, and marked for identification as Staff Exhibit No. 44 and further ask if you are able to identify this document.

A. Yes, this letter sets forth the additional corrective action requested in the NRC letter of March 3, 1980.

Q. Are you able to summarize the additional corrective action proposed?

A. Yes, the Brown & Root quality construction procedure was to be revised to state that no standing water will be allowed on construction

joints. In addition, training was scheduled to inform affected personnel of the change.

Q. Did the NRC, Region IV, have reason to follow up the proposed corrective action to determine if such corrective action was implemented?

A. Yes.

Q. I show you a letter, with attachments, dated October 28, 1980, to Houston Lighting & Power Company making reference to Report 80-25, and marked for identification as Staff Exhibit No. 45. Are you able to identify this document and its attachments?

A. Yes, the letter transmitted to Houston Lighting & Power Company a report detailing the results of an NRC inspection conducted during September of 1980. Among the items inspected was the corrective action proposed by the Applicant following the Notice of Violation attached to 79-16.

Q. What findings and conclusions were reached as a result of this inspection?

A. It was determined by a review of the quality concrete construction procedure, dated September 22, 1980, that within the manual, specifically ¶8.5.10, the acceptance criteria was clearly stated.

Q. To conclude, is the panel able to characterize the I&E Reports which were the subject of this testimony?

A. Yes. The reports incorporated in this testimony reflects that aspect of the NRC's inspection activity which most directly led to the formation of the special inspection team which prepared 79-19.

Q. In summation then, based upon this inspection and enforcement history, is the Panel able to characterize Houston Lighting & Power's

performance under its construction permit for the South Texas Project up to the fall of 1979?

A. Yes, although Houston Lighting & Power was cooperative and diligent in correcting specific problems when cited, the same or similar problems eventually resurfaced, evidencing Houston Lighting & Power's inability to control construction activity. For example, on November 4, 1979, the NRC again received allegations from workers at the South Texas Project concerning lack of management support, threats and harassment of civil QC inspectors and general charges concerning the QA/QC program. In addition, repeated Cadwelding problems, failure to follow concrete pour procedures and QA/QC problems further evidenced Houston Lighting and Power's inability to control construction activity.

Q. What was the result of Houston Lighting & Power's inability to prevent recurrance of identified problems at South Texas?

A. As a result of Houston Lighting & Power's inability to correct identified problems and particularly as a result of chronic allegations concerning lack of QC management support, intimidation and harassment of quality control inspectors and the like, it was decided by the NRC to conduct a thorough, in depth, investigation into the effectiveness of the QA/QC program for the South Texas Project.

Q. Is this Panel prepared to offer testimony concerning that inspection effort?

A. No, this is the subject of the next panels testimony.

APPENDIX A

1973-81 CHRONOLOGY OF INSPECTIONS--SOUTH TEXAS PROJECT

Docket Nos. 50-498 and 50-499*

Inspection	Dates	Inspectors	General Area Inspected
73-01	November 8, 1973	R.E. Hall G.L. Madsen	Predocketing QA Management Meeting
74-01	June 5-7, 1974	W.A. Crossman R.E. Hall R.C. Stewart	Predocketing QA Inspection
74-02	October 9-11, 1974	W.A. Crossman R.C. Stewart W.G. Hubacek	Initial Inspection of Construction QA Program Implementation
75-01	February 4-5, 1975	M.W. Dickerson W.G. Hubacek	Followup of Initial Construction QA Inspection
75-02	March 17-20, 1975	W.A. Crossman M.W. Dickerson R.C. Stewart W.G. Hubacek	Second Pre-Construction Permit/SER QA Inspection
75-03	May 20-22, 1975	W.A. Crossman M.W. Dickerson	Second Pre-Construction Permit/SER QA Inspection
75-04	September 25-26, 1975	B. Murray	Initial Environmental Programs and previous inspection findings
75-05	December 15-17, 1975	M.W. Dickerson W.G. Hubacek	Site Preparation
76-01	January 29-30, 1976	J.B. Baird	Environmental Protection
76-02	April 21-23, 1976	W.A. Crossman M.W. Dickerson A.B. Rosenberg	Site Preparation and Construction

* All Inspections relate to both Units 1 & 2, unless otherwise indicated.

Inspection	Dates	Inspectors	General Area Inspected
76-03	June 16-18, 1976	M.W. Dickerson R.G. Taylor	Site preparation, staffing and concrete construction
76-04	August 10-13, 1976	R.G. Taylor	Structural concrete and previous inspection findings
76-05	September 21-24, 1976	R.G. Taylor R.A. Hermann	Concrete construction QA program for containment liner
76-06	October 4-7, 1976	R.G. Taylor	Concrete construction
76-07	November 30-December 3, 1976	R.G. Taylor A.B. Rosenberg J.I. Tapia W.C. Seidle	Containment liner, concrete records, backfill placement and previous inspection findings
77-01	January 3-6, 1977	R.G Taylor R.C. Stewart J.I. Tapia	Containment liner and concrete construction and previous inspection findings
77-02	January 27-28, 1977	J.B. Baird	Environmental Protection
77-03 Unit 1	February 2-3, 1977	W.A. Crossman R.G. Taylor	Investigation of reported falsification of test records for concrete construction
77-04 Unit 1	February 15 and March 1-4, 1977	R.G. Taylor I. Barnes A.B. Rosenberg	Welding activities, and follow-up of possible construction deficiency related to cracks in Fuel Handling Building wall and previous inspection findings
77-05 Unit 1	March 28-31, 1977	R.G. Taylor R.E. Hall R.A. Herman	Follow-up on investigation 72-03, containment liner, Cadwelding and previous inspection findings
77-06 Unit 1 77-03 Unit 2	April 26-29, 1977	R.G. Taylor J.I. Tapia	Backfill records, concrete construction and previous inspection findings

Inspection	Dates	Inspectors	General Area Inspected
77-07 Unit 1	June 20-22, 1977	R.E. Hall R.A. Hermann	Cadwelding, containment liner and pool liner and previous inspection findings
77-08 Unit 1	July 6-8, 1977	R.G. Taylor J.E. Foster	Investigation of alleged threats to quality control inspectors
77-09 Unit 1 77-04 Unit 2	September 27-30, 1977	R.G. Taylor A.B. Rosenberg L.D. Gilbert	Concrete construction, containment liner, site fabricated tanks and previous inspection findings
77-10 Unit 1 77-05 Unit 2	October 25-28, 1977	R.G. Taylor D.L. Kelley	Licensee audit reports, NSSS supports and previous inspection findings
77-11 Unit 1 77-06 Unit 2	November 8-11, 1977	R.G. Taylor R.A. Hermann A.B. Rosenberg	Structural steel, concrete construction, polar crane support brackets and previous inspection findings
77-12 Unit 1 77-07 Unit 2	November 29- December 1, 1977	R.G. Taylor	Design review, QA program evaluation committee and audits
77-13 77-08	December 19-21, 1977	R.G. Taylor L.D. Gilbert	Repair of strucutral steel columns, containment liner, concrete records and previous inspection findings
77-14 Unit 1 77-09 Unit 2	December 15-16, 1977	R.G. Taylor J.J. Ward	Investigation of alleged questionable radiographs
78-01	January 10-13, 1978	R.G. Taylor J.I. Tapia W.A. Crossman W.G. Hubacek	Repair of structural steel columns, concrete construction, and containment liner

Inspection	Dates	Inspectors	General Area Inspected
78-02	January 25-28, 1978	J.B. Baird K.J. Everett	Environmental Protection program
78-03	February 21-24, 1978	W.G. Hubacek R.G. Taylor D.L. Kelley	Concrete construction, NSSS component supports, Class IE electrical cables and previous inspection findings
78-04	March 21-23, 1978	W.G. Hubacek A.B. Rosenberg L.D. Gilbert J.I. Tapia	Containment, liner, concrete construction, foundation soils, and previous inspection findings
78-05	March 21, 1978	J.J. Ward W.G. Hubacek	Investigation of allegation that individual was a potential scapegoat for improper procedures
78-06	April 4-7, 1978	W.G. Hubacek T.H. Cox H.S. Bassett	Review of previous inspection findings and meeting to determine status of construction
78-07	April 17-20, 1978	W.G Hubacek A.B. Rosenberg L.D. Gilbert	Containment liner, structural steel, concrete activities, implementation of 10 C.F.R. 21 requirements, essential cooling water pipe welding, and previous inspection findings
78-08	May 16-19, 1978	W.G. Hubacek W.A. Crossman	Concrete records, quality procdedure development and voids in fuel handling building slab
78-09	May 16-18, 1978	J.J. Ward W.A. Crossman W.G. Hubacek	Investigation of alleged falsification of cadweld records, qualification of QC inspections and procedural violations

Inspection	Dates	Inspectors	General Area Inspected
78-10	May 30-June 2, 1980	W.G. Hubacek J.I. Tapia	Concrete activities, backfill records, and receipt and storage internals, voids in fuel handling building slab and previous inspection findings
78-11	July 11-14, 1978	W.G. Hubacek A.B. Rosenberg L.D. Gilbert	Structural steel, containment liner, penetrations and major equipment supports, receipt and storage of NSSS components, voids in fuel handling building slab review of implementation procedures for electrical components and previous inspection findings
78-12	July 25-28, 1978	J.J. Ward W.G. Hubacek W.A. Crossman	Investigation of allegations related to irregularities in the civil QA program
78-13	August 15, 1978	W.C. Seidle W.A. Crossman W.G. Hubacek	Management meeting to discuss alleged weaknesses in civil QA program, morale of inspectors and present staffing level
78-14	August 22-25, 1978	J.J. Ward W.G. Hubacek W.A. Crossman	Investigation of alleged misconduct of Brown & Root QC inspector
78-15	September 11-14, 1978	R.E. Hall A.B. Rosenberg	Investigation of allegations concerning Cadwelding and mislocation of the Unit 2 mechanical electrical auxiliary building
78-16	October 24-27, 1978	W.G. Hubacek J.I. Tapia L.E. Martin R.E. Hall	Essential cooling pond, electrical activities, site QA/QC program and staffing, 50.55(e) items, and previous inspection findings

Inspection	Dates	Inspectors	General Area Inspected
78-17	December 5-8, 1978	W.G. Hubacek D.P. Tomlinson	Safety related piping, concrete activities, licensee organization changes, 50.55(e) items, and previous inspection findings
78-18	December 19-22, 1978	W.G. Hubacek W.A. Crossman	Concrete activities, housekeeping and equipment storage post tensioning, and previous inspection findings
79-01	January 23-26 and 30, 1979	J.J. Ward W.G. Hubacek R.E. Hall	Investigation of Cadwelding irregularities
79-02	January 23-26 and January 30 - February 2, 1979	W.G. Hubacek R.E. Hall J.I. Tapia L.D. Gilbert	Safety related Piping, concrete activities, cadwelding, 50.55(e) items, and previous inspection findings
79-03	February 21-23, 1979	W.G. Hubacek L.E. Martin D.P.Tomlinson	Storage and maintenance of materials, electrical components and systems, NSSS storage procedures, 50.55(e) item and previous inspection findings
79-04	March 20-23, 1979	W.G. Hubacek R.E. Hall L.D. Gilbert	Concrete activities, containment liner, receiving records for electrical components, NSSS component supports, polar crane girder, 50.55(e) items, and previous inspection findings
79-05	April 2-2, 1979	W.G. Hubacek L.E. Martin	Housekeeping, of storage Class IE electrical equipment, HVAC, and previous inspection findings
79-06	April 17-20, 1979	W.G. Hubacek	Concrete activities, housekeeping, equipment storage and previous inspection findings

Inspection	Dates	Inspectors	General Area Inspected
79-07	May 7-9, 1979	R.J. Everett	Environmental protection program and previous inspection findings
79-08	May 15-18, 1979	L.D. Gilbert W.C. Seidle	Reactor Coolant system supports
79-09	May 15-18 and 22-23, 1979	W.G. Hubacek W.A. Crossman	Investigation of concrete and Cadweld irregularities
79-10	June 12-15, 1979	W.G. Hubacek	Concrete activities, polar crane test and previous inspection findings
79-11	June 26-28, 1979	W.G. Hubacek D.P. Tomlinson	Voids in Unit 1 reactor containment building wall, fabrication of NSSS equipment supports
79-12	July 9-11 and 16-19, 1979	J.I. Tapia D.P. Tomlinson	Reactor vessel installation, voids in Unit 1 containment wall, identification of anchor bolt material, and previous inspection findings
79-13	August 6-10, 1979	W.G. Hubacek J.I. Tapia L.E. Foster H.S. Phillips	Mid term QA inspection of implementation of QA program
79-14	September 4-7 and 11-14, 1979	W.G. Hubacek H.S. Phillips	Investigation of alleged irregularities in QA/QC program
79-15	September 1979	H.S. Phillips	Concrete activities
79-16	October 1979	H.S. Phillips	Concrete activities fire prevention, essential cooling pond, storage of materials and preious inspection findings
79-17	October 24-26, 1979	W.G. Hubacek	Previous inspection findings and 50.55(e) item

Inspection	Dates	Inspectors	General Area Inspected
79-18	November, 1979	H.S. Phillips	Containment liner, soil compaction, concrete activites, and previous inspection findings
79-19	November 10, 1979 to February 7, 1980	D.W. Hayes R. Herr H.S. Phillips E.P. Jernigan R.M. Compton R.B. Landsman	Special investigation
79-20	November 13-16,	L.D. Gilbert L.E. Martin D.G. McDonald J.I. Tapia	Control of weld filler metal, reactor coolant supports, containment liner, electrical components and systems, earthwork, and concrete activities and previous inspection findings
79-21	November 27, 1979	H.S. Phillips W.A. Crossman C.E. Wisner	Meeting with local public officials of Bay City, Texas
79-22	December 11-14, 1979	W.G. Hubacek	ASME certification, concrete placement, HVAC activities, and previous inspection findings
80-01	December 1979, January 1980 and February 1980	H.S. Phillips	Previous inspection findings and construction deficiencies
80-02	February 5-8, 1980	W.G. Hubacek D.P. Tomlinson	Reactor coolant piping, falsification of personnel records, weld filler metal control, review of qualifications of a Foreman, verification of repair radiographs and previous inspection findings
80-03	February 26-29, 1980	L.D. Gilbert	Reactor coolant piping and other safety related piping

Inspection	Dates	Inspectors	General Area Inspected
80-04	March 4-7 and 11-14, 1980	W.A. Crossman W.G. Hubacek	Nine point action plan relative to concrete activities
80-05	March 1980	H.S. Phillips	Backfill test program and construction deficiencies
80-06	April 1980	H.S. Phillips	Safety related piping previous inspection findings, containment liner, structural steel and construction deficiencies
80-07	April 8-11, 1980	W.G. Hubacek	Previous inspection findings
80-08	January 19-33 and February 20, 1981	W.A. Crossman W.G. Hubacek L.D. Gilbert	Investigation of alleged construction deficiencies and inaccuracy of an in service inspection device
80-09	April 15-18, 1980	D.D. Driskill P.E. Baci	Investigation of allegations relative to termination of Brown & Root employees
80-10	May 1980	H.S. Phillips	Concrete activities, structural backfill, embeds, anchor bolts, storage and maintenance of equipment, and construction deficiencies
80-11	May 5-8, 1980	L.D. Gilbert L.E. Martin	Reactor coolant piping, containment liner, safety related piping, and electrical cable and raceway installation
80-12	May 12-15, 1980	J.I. Tapia	Earthwork and concrete activities, and construction deficiencies

Inspection	Dates	Inspectors	General Area Inspected
80-13	May 27, 1980 and February 25-27, 1981	W.G. Hubacek D.P. Tomlinson	Investigation of allegations related to the welding and piping programs
80-14	June 5-6, 18-20 and 24-26, 1980	D.D. Driskill R.K. Herr	Investigation of allegations concerning intimidations, falsification of records, promotion of unqualified individual and altered noncomformance report
80-15	June 5-6, 1980	D.D. Driskill R.K. Herr	Investigation of allegation that a consultant recommended construction be halted
80-16	June 1980	H.S. Phillips	Previous inspection findings, structural steel, QA records system, and NSSS components
80-17	June 23-26, 1980	R.E. Hall J.I. Tapia S.K. Chaudhary R.B. Landsman	Previous inspection findings related to earthwork
80-18	July 1980	H.S. Phillips	Previous inspection findings Show Cause Order items, concrete activities, structural steel and supports
80-19	July 22-24, 1980	J.I. Tapia	Previous inspection findings related to earthwork and concrete
80-20	July 28-29, 1980	D.P. Tomlinson	Issuance and disposition of nonconformance reports
80-21	July 28-Aug. 1 & 4, 1980	R.K. Herr, D.D. Driskill	Investigation of falsification of maintenance records

Inspection	Dates	Inspectors	General Area Inspected
80-22	July 29, 1980	D.D Driskill	Investigation of allegations related to piping systems
80-23	August 1980	H.S. Phillips	Previous inspection findings and Show Cause Order items
80-24	August 18-22, September 2-5 and September 16-19, 1980	J.I. Tapia D.P. Tomlinson	Previous inspection findings and Show Cause Order items
80-25	September 1980	H.S. Phillips	Previous inspection findings and Show Cause Order items
80-26	September 4-5 and 9, 1980	R.K. Herr J.I. Tapia	Investigation of allegations related to audits, intimidation and personnel qualifications
80-27	October 1980	H.S. Phillips	Previous inspection findings and Show Cause Order items
80-28	October 6-10 and 14-17, 1980	D.P. Tomlinson	AWS welding and previous inspection findings
80-29	September 24, 1980	D.D. Driskill	Investigation of alleged drug use
80-30	October 21-24 and 27-31, 1980	W.G. Hubacek L.D. Gilbert J.I. Tapia	Previous inspection Findings and Show Cause Order items
80-31	October 15-17, October 22-23 and November 13, 1980	D.D. Driskill R.K. Herr	Investigation of alleged firing of a Foreman, formerly fired individuals were being rehired, and falsification of records
80-32	October 21-23, 1980	L. Wilborn	Environmental protection programs and previous inspection findings

Inspection	Dates	Inspectors	General Area Inspected
80-33	November and December 1980	H.S. Phillips	Show Cause Order items, storage and maintenance of equipment, structural steel and safety related welding
80-34	October 27-31 and November 11-12, 1980	D.D. Driskill A.R. Johnson	Investigation of allegations related to personnel qualifications, safety-related pipe storage and piping isometric drawings
80-35	November 3-7, 1980	D.P. Tomlinson	AWS welding activities and review of previous inspection findings
80-36	November 17-21 and December 1-4, 1980	W.G. Hubacek L.D. Gilbert	Previous inspection findings and Show Cause Order items
80-37	November 18, 1980	K.V. Seyfrit W.C. Seidle W.A. Crossman R.E. Hall	Meeting with corporate staff of Houston Lighting and Power Company and Brown & Root Co. Inc. to discuss Show Cause Order items and limited work restart
80-38	December 15-18, 1980	J.I. Tapia D.P. Tomlinson	Previous inspection findings and Show Cause Order items
81-01	January 1981	H.S. Phillips	Previous inspection findings, Show Cause Order items and storage and maintenance of equipment
81-02	January 5-9, 1981	D.P. Tomlinson	Previous inspection findings and ASME welding
81-03	January 19-23, 1981	J.I. Tapia L.D. Gilbert	Previous inspection findings and Show Cause Order items

Inspection	Dates	Inspectors	General Area Inspected
81-04	February 1981	H.S. Phillips	Previous inspection findings and Show Cause Order items
81-05	February 2-5, 1981	W.G. Hubacek	Previous inspection findings and Show Cause Order items
81-06	February 23-27, 1981	D.P. Tomlinson W.G. Hubacek	Previous inspection findings and Show Cause Order items
81-07	March 1981	H.S. Phillips	Previous inspection findings and Show Cause Order items
81-08	March 2-6, 1981	L.D. Gilbert	Show Cause Order and immediate action letter items
81-09	March 25-27, 1981	W.G. Hubacek	Previous inspection findings, and 50.55(e) items

APPENDIX B

ITEMS OF NONCOMPLIANCE AND DEVIATIONS

Inspection No.	Description	Type
75-02	B-1 Incomplete Brown & Root Manual	Deviation
	B-2 Lack of schedule for development of Brown & Root procdedures	Deviation
	B-3 Lack of Brown & Root procedural provision for field initiated design	Deviation
	B-4 Brown & Root procedure did not clearly delineate authority and duties of QA personnel	Deviation
76-03 Unit 1	I.A.2 Failure to follow Brown & Root specification for verification of vibroflotation	Infraction
76-07	I.A.2 Lack of Pittsburgh-Des Moines procedural controls resulting in use of unqualified welder	
77-04	I.A.2 Failure to follow Pittsburgh-Des Moines procedure for calibration of welding machines	
77-05 Unit 1	I.A.2.a. Failure to follow Brown & Root procedure for fabrication of cadwelds	Infraction
77-05 Unit 1	I.A.2.b. Failure to follow Brown & Root procedure for inspection and acceptance of cadwelds	Infraction
77-06 77-03 Units 1 & 2	A. Failure to follow Brown & Root procedures for surveillance of Pittsburgh Testing Laboratory for earthquake activities	Infraction
77-06 77-03 Unit 1	B. Utilization of Brown & Root personnel to inspect concrete placement who were not qualified in education and experience	Deviation
77-09 77-04 Unit 2	A. Brown & Root concrete QC inspector was not qualified as required by proposed ACI 359 Code	Infraction

Inspection No.	Description	Type
77-12 77-07 Units 1 & 2	A. Failure of licensee to maintain audit checklists	Infraction
77-12 77-07 Units 1 & 2	B. Licensee Design Review Committee Minutes failed to document audits of design reviews	Deviation
78-01 Units 1 & 2	A. Failure to follow Brown & Root procedures during concrete placement for 1. Concrete temperature control	Infraction
	2. Vibrator spacing	Infraction
78-04 Unit 2	A. Failure to follow procedures for the control of special processes. (Response not required--corrected during inspections) (premature signoff of checklist)	Infraction
78-07 Units 1 & 2	A.1. Failure to provide revised drawings	Infraction
78-07 Units 1 & 2	A.2. Incomplete inspection of structural steel documented as completed	Infraction
78-15 (Investigation), Unit 1	A. Failure to follow cadweld procedure (4 examples)	Infraction
78-15 Unit 1	B. Failure to provide specified in-process Cadweld inspection	Infraction
78-16 Units 1 & 2	A.1. Failure to provide procedure for housekeeping inspection	Infraction
78-16 Units 1 & 2	A.2. Failure to provide acceptance criteria for testing of class IE motors.	Infraction
78-16 Units 1 & 2	A.3. Failure to follow procedures for surveillance of maintenance on Class IE equipment	Infraction
78-17 Units 1 & 2	A. Reporting of cadwelds qualifications test results by a Level I inspector	Deviation

Inspection No.	Description	Type
79-01 (Investigation) Units 1 & 2	A. Transcription of cadweld inspection records without approved instructions or procedures	Infraction
79-02 Units 1 & 2	A. Failure to control superseded drawings	Infraction
79-03 Units 1 & 2	A. Failure to follow procedures for storage of material. (2 examples) Stainless steel and reinforcing steel	Infraction
79-04 Unit 2	A. Failure to follow concrete placement procedures (2 examples--standing water and lateral movement)	Infraction
79-05 Unit 1	A. Failure to follow procedures for storage of material (recycle evaporator)	Infraction
79-05 Unit 1	B. Failure to follow procedures for preparation of nonconformance report	Infraction
79-08 Unit 2	A. Failure of Pittsburg-Des Moines to have a procedure for monitoring welding operations	Infraction
79-13 Units 1 & 2	A. Failure to follow procedures for maintaining Pittsburg-Des Moines QA Manuals	Infraction
79-13 Units 1 & 2	B. Failure to follow procedures for conduct of Pittsburg-Des Moines site audits	Infraction
79-13 Units 1 & 2	C. Failure to delineate organizational change in the Pittsburgh-Des Moines QA Manual	Deficiency
79-13 Units 1 & 2	D. Failure to maintain completed audit checklists in the licensee's audit files	Deficiency
79-13 Units 1 & 2	E. Failure to destroy or stamp a deleted Brown & Root QA procedure	Deficiency

Inspection No.	Description	Type
79-14 (Investigation) Unit 2	A. Failure to follow Brown & Root procedures for release of stop work order	Infraction
79-14 (Investigation) Unit 1	B. Supplemental entry to QA record did not include date of entry or identification of persons making the entry	Deviation
79-15 Unit 2	A. Failure to follow concrete concrete consolidation procedure	Infraction
79-16 Units 1 & 2	A. Failure to include appropriate quantitative or qualitative acceptance criteria for concrete surface moisture prior to placement (2 parts)	Infraction

PROFESSIONAL QUALIFICATIONS

OF

WILLIAM C. SEIDLE

OFFICE OF INSPECTION AND ENFORCEMENT, REGION IV
UNITED STATES NUCLEAR REGULATORY COMMISSION

Mr. Seidle is Chief, Reactor Construction and Engineering Support Branch, Region IV, Office of Inspection and Enforcmenet, Arlington, Texas. In this position, he plans, organizes, directs and coordinates the work of the Branch. He is responsible for the implementation of programs of inspection, investiqation and enforcement for nuclear power plants under construction in Region IV to assure that the quality of construction is such that the plants can be operated safety.

Mr. Seidle received a Bachelor of Science degree from Washington State University in 1953 and he is registered as a Professional Engineer in Nuclear Engineering.

Prior Work History

1976 - PRESENT	Chief, Reactor Construction and Engineering Support Branch - Plan, organize, direct and coordinate work of branch. Responsible for programs of inspection, investigation and enforcement, Region IV (NRC).
1975 - 1976	Chief, Reactor Project Section, Reactor Operations and Nuclear Support Branch - Supervised six to seven inspectors with overall responsibility for programs of inspection, investigation and enforcement for assigned reactors in (NRC/AEC).
1974 - 1975	Chief, Facilities Test and Start-Up Branch - Responsible for inspection program for power reactors in pre-op and start-up testing phase, Region II (AEC).
1972 - 1974	Chief, Reactor Operations Branch - Responsible for inspection programs for assigned power reactors and research, test and training reactors, Region II (AEC).
1969 - 1972	Senior Reactor Inspector - Responsible for inspection program for assigned reactors under construction and during operation, Region II (AEC).

1966 - 1969	Reactor Inspector - Inspected assigned power, test, training and research reactors during construction and operation, Region II (AEC).
1958 - 1966	Reactor Operations - Various supervisory titles and responsibilities at the General Electric Test Reactor (GETR), Vallecitos Atomic Lab, Pleasanton, California; last assignment as Manager, GETR Operations. In this assignment, managed some forty employees, including reactor supervisors, operators, engineers and administrative personnel (GE).
1955 - 1958	Reactor Operations - Various supervisory responsibilities including those for shift activities involving reactor refueling and a health physics program associated with eight Hanford production reactors operated by the General Electric Co., Richland, Washington (GE).

PROFESSIONAL QUALIFICATIONS

OF

WILLIAM A. CROSSMAN

OFFICE OF INSPECTION AND ENFORCEMENT, REGION IV
UNITED STATES NUCLEAR REGULATORY COMMISSION

Mr. Crossman is Chief, Projects Section, Reactor Construction and Engineering Support Branch, Region IV, Office of Inspection and Enforcement, Arlington, Texas. In this position, he is responsible for the supervision of the project inspectors who inspect the South Texas Project and other nuclear facilities that are under Region IV jurisdiction. Mr. Crossman has held this position since May, 1974 and in the course of his responsibilities he has reviewed, approved and performed inspections and investigations related to the South Texas Project.

Mr. Crossman received a Bachelor of Science degree in chemical engineering from the University of Texas in 1950. He is a registered Professional Engineer in Nuclear Engineering in the State of California.

Prior Work History

Prior to joining the Atomic Energy Commission (Nuclear Regulatory Commission) in February 1968, Mr. Crossman was an employee of the General Electric Company from March 1950 to July 1965. During this period of employment, he was a supervisor of nuclear related work; including nuclear reactor operation, plutonium and uranium recovery, irradiated fuel processing, plutonium production and radioactive waste management. From July 1965 to December 1967, Mr. Crossman was a supervisor in Nuclear Reactor Operations for Douglas-United Nuclear, Inc.

PROFESSIONAL QUALIFICATIONS

OF

ROBERT G. TAYLOR

OFFICE OF INSPECTION AND ENFORCEMENT, REGION IV
UNITED STATES NUCLEAR REGULATORY COMMISSION

Mr. Taylor is currently the Resident Reactor Inspector at the Comanche Peak Nuclear Power Station. In this position, he serves to coordinate all safety related inspection efforts relative to the NRC region and the site. In addition, he maintains a field office, develops and recommends enforcement action, and acts as a liaison with regional, state and local agencies. Prior to being the Resident Reactor Inspector at Comanche Peak, Mr. Taylor was the construction project reactor inspector at the South Texas Project from 1975 to 1978.

Mr. Taylor is a registered Professional Engineer in the State of California, specializing in quality control engineering.

Prior Work History

1978 - PRESENT	Resident Reactor Inspector, Comanche Peak Nuclear Power Station. Duties include coordinating all safety related inspection efforts relative to the NRC region and the site, as well as, maintaining a field office and being a liaison with regional, state and local agencies.
1976 - 1978	Construction Project Reactor Inspector, Arkansas Nuclear Power Unit No. 2 and South Texas Project. Duties included inspection of the South Texas Project while under construction to ascertain whether this facility conformed to the provisions of the construction permit and relevant specifications.
1974 - 1976	Reactor Inspector, Vendor Inspection Branch, Project Inspector for Stone and Webster Corp. and Construction Engineering, Inc.
1968 - 1974	Senior Quality Assurance Engineer, Fort Calhoun Nuclear Power Station. Mr. Taylor was the Senior Quality Assurance Engineer for Gibbs and Hill, Inc.
1962 - 1968	Senior Quality Assurance Engineer, AMF Inc. Duties included various quality assurance positions in regard to ballistic missile construction projects.

1960 - 1962	Construction Section Supervisor, Quality Control, Titan 1, Denver, Colorado, United States Air Force.
1953 - 1960	Electronic Section Supervisor, Quality Control, Chicago Air Procurement District, United States Air Force.

PROFESSIONAL QUALIFICATIONS

OF

WILLIAM G. HUBACEK

OFFICE OF INSPECTION AND ENFORCEMENT, REGION IV
UNITED STATES NUCLEAR REGULATORY COMMISSION

Mr. Hubacek is a Reactor Inspector, Reactor Construction and Engineering Support Branch, Region IV, Office of Inspection and Enforcement, Arlington, Texas. In this position, he is responsible for project inspection of the South Texas Project and other nuclear facilities within Region IV jurisdiction. Mr. Hubacek has held this position since June, 1974, and in the course of this position has been regularly assigned to perform inspections related to the South Texas Project.

Mr. Hubacek received a Bachelor of General Studies degree from the University of Nebraska in 1973. He is a registered Professional Engineer in Nuclear Engineering in the State of California.

Prior Work History

1974 - PRESENT	Reactor In[illegible]ctor, Region IV, United States Nuclear Regulatory [illegible]ommission. In this position he is responsible for project inspection of nuclear facilities under Region IV jurisdiction, including the South Texas Project.
1958 - 1974	Military Reactor Program, United States Army Engineer Power Group. Duties included a variety of job assignments in nuclear related work; including operator/instrument technician, instrument shop supervisor, shift supervisor, nuclear power plant superintendent, and chief of the instrumentation training section.

PROFESSIONAL QUALIFICATIONS

OF

HARRY SHANNON PHILLIPS

OFFICE OF INSPECTION AND ENFORCEMENT, REGION IV
UNITED STATES NUCLEAR REGULATORY COMMISSION

Mr. Phillips is the Resident Reactor Inspector, South Texas Project, Bay City, Texas. In this position, he serves as Senior Resident Reactor Inspector, responsible for coordinating all safety related inspections and acts as a liaison between the NRC region and site. He has held this position since August, 1979.

Mr. Phillips received a Bachelor of Science degree from the University of North Alabama in 1962, majoring in chemistry and math. In addition, Mr. Phillips received a masters of science from Mississippi State University, in 1971, majoring in materials engineering with a metallurgical option.

Prior Work History

1977 - Present	U.S. Nuclear Regulatory Commission, Region III, Glen Ellyn, Reactor Inspector (Projects). Project Inspector for safety related construction activities (structural, mechanical, electrical, material) at several nuclear sites in several states. Duties included evaluation of management, organization, procedures and practices for compliance to rules, orders, and regulations. Performs evaluations and investigations related to issuance, suspension, modification and revocation of license. Review and analyze company/corporate reports to determine possible violations of the AEC act of1954.
1972 - 1977	Defense Supply Agency (DSA), DEFENSE CONTRACT ADMINISTRATION SERVICES OFFICE (DCASO), Houston, Texas, Quality Assurance Division Chief. Direct and administer Quality Assurance effort on 988 Department of Defense contracts at 353 contractor facilities located throughout Louisiana, and Southeast Texas. Supervise five subordinate branch supervisors and a staff of five plus 45 technical specialist.
1970 - 1972	DSA, Defense Contract Administration Services Region, Dallas, Texas, Materials Engineer. Served as Staff Engineer and Advisor to Quality Assurance Directorate on

1970 - 1972	DSA, Defense Contract Administration Services Region, Dallas, Texas, Materials Engineer. Served as Staff Engineer and Advisor to Quality Assurance Directorate on all Metallurgical/Mechanical Manufacturing Processes. Performed engineering surveillance at all major contractors in Texas, Oklahoma, Arkansas, New Mexico, and Louisiana on Military hardware.
1965 - 1975	Army Missile Command, Redstone Arsenal, Alabama, Solid State Chemist. Materials testing of all systems components used in Army Missile Systems. Worked in chemical, metallurgical and materials engineering capacity.
1963 - 1965	Post Engineers, Redstone Arsenal, Alabama. Corrosion Control Chemist. Corrosion Control Program for 40 high/low pressure Boiler Plants as well as efficiency studies.
1963 - 1965	Norton Abrasive Company, Huntsville, Alabama. Analytical Chemist, Quality Control of refractories manufactured in electric arc furnaces. All wet and instrumental tests required to control refractories.