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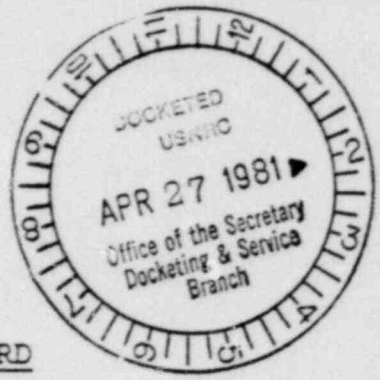

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of:	§	
	§	
HOUSTON LIGHTING & POWER COMPANY, ET AL.	§	Docket Nos. 50-4980L
	§	50-4990L
	§	
(South Texas Project, Units 1 & 2)	§	
	§	

TESTIMONY ON BEHALF OF HOUSTON LIGHTING & POWER COMPANY, ET AL.

OF

MR. G. THOMAS WARNICK
MR. CHARLES M. SINGLETON
MR. LOGAN D. WILSON

ON

THE OPERATIONS OF B&R'S SITE QA/QC PROGRAM AND ALLEGATIONS OF HARASSMENT AND INTIMIDATION OF QUALITY CONTROL INSPECTORS

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APPLICANTS' TESTIMONY ON THE OPERATION OF B&R'S SITE QA/QC PROGRAM AND ALLEGATIONS OF HARASSMENT AND INTIMIDATION OF QUALITY CONTROL INSPECTORS

The following is testimony presented on behalf of Houston Lighting & Power Company, et al. (Applicants) and addresses: (1) various aspects of the Quality Assurance/ Quality Control (QA/QC) program at STP as administered by Brown & Root, Inc. (B&R) at the site level; (2) the allegation that Quality Control (QC) Inspectors have been subject to a pattern of harassment and intimidation; (3) the allegation that pour cards were falsified as a result of an alleged card game in mid-1977 and (4) the alleged thwarting of QC Inspectors' communications with design engineers. The testimony is part of Applicants' testimony addressing the following portons of intervenors' Contention 1:

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:

* * *

(7) Quality Control as per the requirements of 10 CFR 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.

* * *

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 Applicant'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 CFR 1150.57(a)(1) and (2) necessary for issuance of an operating license for the South Texas Nuclear Project.

The panel of witnesses presenting this testimony consists of Mr. G. Thomas Warnick, Mr. Charles M. Singleton, and Mr. Logan D. Wilson.

The testimony consists of the following segments:

(1) Mr. Warnick and Mr. Singleton with respect to the operation of B&R's site level QA/QC program, the allegation that QC Inspectors were subject to a pattern of harassment and intimidation, the allegation that pour cards were falsified as a result of an alleged card game in mid-1977 and the allegation that the QC Inspectors' communications with Design Engineering were systematically thwarted; and

(2) Mr. Wilson with respect to the allegation of harassment and intimidation of QC Inspectors.

TH:12:C

TESTIMONY OF MR. G. THOMAS WARNICK AND
MR. CHARLES M. SINGLETON ON B&R'S QA/QC
PROGRAM AT THE SITE AND ALLEGATIONS
OF HARASSMENT AND INTIMIDATION OF QC INSPECTORS

Q. 1 Please state your names.

A. 1 G. Thomas Warnick (GTW) and Charles M. Singleton (CMS).

Q. 2 Mr. Warnick, by whom are you employed?

A. 2 (GTW): Public Service Company of Indiana.

Q. 3 Mr. Singleton, by whom are you employed?

A. 3 (CMS): Brown & Root, Inc. (B&R).

Q. 4 Please describe your current position and job responsibilities?

A. 4 (GTW): I am the QA Tracking and Trending Supervisor for the Marble Hill Nuclear Project and am responsible for programmatic control of the nonconformance report program and Quality Assurance (QA) trending program.

(CMS): I am the Civil Discipline Quality Control (QC) Superintendent for South Texas Project (STP), and am directly responsible for all QC inspection activities in the areas of concrete. I report to the Quality Control Manager for the STP.

Q. 5 Please summarize your work background, state when you were employed by B&R, and describe your positions held with B&R.

A. 5 (GTW): I have worked in the nuclear quality assurance area for approximately 10 years. Prior to joining B&R, I was employed by Bailey Controls Inc., a subsidiary of Babcock and Wilcox, primarily as a QA Manager. I joined B&R in April 1978 as the Quality Engineering Supervisor at the STP Site. I became Site QA Manager in February 1979, a position I held until June 1980, at which time I became the QC Manager for the South Texas Project. I resigned from B&R in late February 1981 to assume my current position with Public Service Company of Indiana.

(CMS): My employment history is set forth in my previous testimony regarding STP concrete activities.

Q. 6 Please describe the purpose of your testimony.

A. 6 (GTW, CMS): The purpose of our testimony is to describe the QA program at STP as administered at the working level. Our testimony will address the alleged incidents of harassment and intimidation of QC Inspectors, alleged falsification of pour cards, and the alleged thwarting of QC Inspectors' communications with Design Engineers. Our testimony will show that the incidents of serious confrontations between QC and Construction at STP have been isolated occurrences that were handled properly by management. There has been no pattern of harassment or intimidation of QC Inspectors and there is no basis for the allegation that inspections were not performed

due to an alleged card game. Finally, our testimony will show that QC Inspectors have not been "thwarted" in communicating with Design Engineers.

Q. 7 Please briefly describe the basic Project-level organizational structure for the B&R STP QA Program which was in effect for the period between the issuance of the construction permits for STP in December 1975 and the NRC special investigation conducted in late 1979 - early 1980.

A. 7 (GTW, CMS): From September 1975 to February 1979, the day-to-day on-site operations of the B&R Project QA/QC organization were directed by B&R's on-site Project QA Manager. Mr. Terry Gardner held this position from September 1975 until March 1978 and Mr. Charles Vincent held this position from April 1978 until February 1979. In February 1979, the Project QA Manager was relocated from on-site to the Houston Office and a Site QA Manager position was established and filled by Mr. Warnick. The Project QA Manager became responsible for coordination of all Project related QA/QC activities, including vendor surveillance, quality engineering and Houston QA coordination functions. In addition, the Project QA Manager was responsible for management of the Site QA/QC activities through the Site QA Manager.

This Houston Project QA management function was part of the matrix management system adopted by the B&R senior manage-

ment in October 1978 for STP. Under the matrix management system, there exists for each discipline (Engineering, Construction, Material Management, QA, etc.) a Project Manager who is responsible for all Project-related decisions in the particular discipline. In those instances in which an issue arises on the Project which, in the judgement of the Project management, has broad implications for company-wide policy in a discipline area, there is consultation with the central discipline office before the problem is resolved at the Project level.

In the case of QA for STP, when a Project-related QA issue arises which impacts company-wide QA policy, resolution of such issues rests with the B&R Power Division QA Manager. This individual is responsible for all B&R Project QA programs, including the QA Program for STP.

Under the Site QA Manager, there have been QA Supervisors in charge of QC Inspectors in various disciplines; Quality Engineering Supervisors, in charge of discipline Quality Engineers; and QA Records Supervisors, as well as other administrative positions. The numbers of personnel in these areas have steadily increased since construction began in 1976. The average numbe of QC Inspectors increased from approximately 15 Inspectors in late 1976, to approximately 125 Inspectors in 1979.

Q. 8 Compare your QA job responsibilities at STP with the QA responsibilities you had in other jobs.

A. 8 (GTW, CMS): The basic concepts and organization for QC and QA are the same throughout the nuclear industry, although particular technical expertise required to fulfill specific job responsibilities will vary depending on the product or activity involved. In addition, a wider range of knowledge and experience is required as individuals advance into higher positions of QA supervision and management. In each of our situations, the QA positions we have held outside the Project have required very similar knowledge and experience as that required in the positions we have held for at STP.

Q. 9 Explain generally B&R's process for hiring QA/QC personnel.

A. 9 (GTW, CMS): B&R's qualification requirements for QA/QC positions satisfy the requirements of NRC Regulatory Guide 1.58 (which endorses ANSI N45.2.6 and SNT-TC-1A) and ACI-359/ASME Section III, Division 2, for Civil QC Inspectors.

Resumes and/or job applications describing an applicant's experience and qualifications are reviewed by the applicant's potential immediate supervisor. If he or she is being considered for a technical position, qualifications and experience are also reviewed by Quality Engineering personnel recognized as being technically competent in the applicant's discipline. If the review of the applicant's qualifications indicates that he or she meets the basic job requirements, the applicant is then

interviewed. Based on the interview and evaluation of the applicant's previous job-related education and experience, a decision regarding hiring is made by QA/QC management.

Q. 10 What levels of B&R management does a QC Inspector come into contact with, and with what frequency? Has this organizational arrangement remained the same since the beginning of the project?

A. 10 (GTW, CMS): The QC Inspector interacts daily with his discipline Lead Inspector and with his discipline QC Superintendent. Those individuals represent first and second line management and are a crucial link in the communication chain from the Inspectors to upper management. The Inspector normally interacts with the QC Manager on an average of once a week, and less frequently with the Project QA Manager. This organizational arrangement has remained the same since the beginning of the Project.

Q. 11 What is the basic role of the QC Inspector at STP?

A. 11 (GTW, CMS): The basic responsibilities of an Inspector are the same regardless of which discipline areas are involved. The role of the Inspector is to provide documented verification that the work performed by Construction has been done in accordance with the appropriate procedures, specifications and other related engineering design documents. Daily inspections are performed in accordance with pre-planned check-

lists provided by Quality Engineering. These checklists provide the QC Inspector with specific requirements for the performance of his work.

Q. 12 What do you view to be the role of Construction in the implementation of the B&R QA program for STP?

A. 12 (GTW, CMS): Construction has the responsibility to fabricate and erect the plant in compliance with approved engineering design documents.

Q. 13 How does QC interact with Construction?

A. 13 (GTW, CMS): QC Inspectors interact most often at the Foreman and General Foreman level of the Construction organization. The Inspector discusses work schedules and particular conditions arising in his inspection area with these Construction supervisors on a daily basis, and works with them closely to resolve problems.

Q. 14 Describe the QC/Construction relationship at STP. Did tension exist between Construction and QC? Was there concern about the level of tension that existed? What was done to mitigate the tension?

A. 14 (GTW, CMS): Since 1977, there have been periods when there was concern about tensions between Construction and QC personnel. It is natural for there to have been tension resulting from QC's critical evaluations of certain construction activities. In an ideal world, all such criticism would be

given and taken in a tactful and constructive manner. Unfortunately, this is not always the case in the course of construction of a large project.

B&R Project management was concerned about such tensions, and continually emphasized the need for cooperation and teamwork. We think that as the Project has developed, the tensions that existed during certain early periods have been greatly reduced. We also think that the apparent perceptions by some that there was a pervasive "intimidation and harassment" of QC by Construction are completely out of proportion, and not well-founded. We know of only two instances over the past five years that tensions resulted in physical contact between a Construction worker and a QC Inspector. We think it is significant that of the thousands of QC inspections that have occurred, there have been only these two incidents.

On these occasions, B&R Project management was aware of, and concerned about the incidents, and in each case, took immediate and strong corrective action. To the best of our knowledge, QC personnel were never negligent in carrying out their inspection duties.

Q. 15 Have you witnessed any situations in which physical contact has occurred between a Construction worker and a QC Inspector?

A. 15 (CMS): Yes. I did witness one situation in which a disagreement led to physical contact between a Construction Foreman and a QC Inspector. On June 30, 1977, a confrontation occurred between a Concrete Foreman and a Civil QC Inspector in which, after a heated argument concerning the relocation of a concrete slick line, the Concrete Foreman grabbed the Inspector by the shirt and shoved him backward. The Inspector fell into an erected section of rebar for a slab placement which was directly behind him and the Foreman fell on top of him. After they got up, the Foreman walked away from the placement location and the Inspector was taken to the site medical center for examination. Both Construction and QC management were summoned by radio and arrived shortly after the incident occurred. They investigated the circumstances surrounding the situation and assured that the work was continuing on the placement in a proper manner. The Concrete Foreman left the site immediately after the incident and was subsequently discharged by B&R. This incident was investigated by the NRC and reported in I&E Report 77-08.

(GTW): Yes. I witnessed one situation in which a disagreement led to physical contact between a Construction Engineer and a QC Inspector. On March 7, 1979, these individuals were working on a concrete pour and had a dispute over pour cleanliness. The dispute went on for several hours. I was summoned

to the placement location, along with Construction management, to resolve the disagreement. While I was there, the QC Inspector called the Construction Engineer a liar and the Construction Engineer swung at the QC Inspector, just grazing his shoulder. The Construction Engineer immediately realized his mistake and ceased to fight. The QC Inspector was reprimanded for his unprofessional behavior and the Construction Engineer was removed from the site.

Q. 16 Are you aware of situations involving verbal threats between Construction and QC? If so, how were such situations handled by B&R management?

A. 16 (GTW, CMS): Construction and QC personnel often have had verbal disagreements about job related issues. These verbal exchanges, however, have rarely amounted to what we would call "verbal threats", which we define as statements presenting serious possibilities of physical confrontation. QA/QC management has urged the Inspectors not to argue with Construction, but rather, to elevate any unresolvable disagreements to their Supervisors for resolution.

(GTW): I have never witnessed a situation involving verbal threats between Construction and QC personnel. In my capacity as Site QA Manager, I investigated personally or had others investigate a few specific clai of verbal harassment which were brought to my attention in the latter half of 1979.

As discussed in Mr. L. D. Wilson's testimony, these investigations were normally carried out with HL&P's involvement. In most cases, the threats resulted from a specific dispute in which one or more parties lost their tempers. While unprofessional, these verbal exchanges were not serious threats in my opinion.

(CMS): Since December 1976, I have only witnessed one situation which could be characterized as a "verbal threat". This situation involved an exchange between a Concrete General Foreman and a QC Inspector over a concrete placement problem where the Concrete General Foreman misinterpreted a statement made by a QC Inspector and lost his temper at the post-placement meeting.

On November 1, 1979, I discussed with the Lead QC-Civil Inspector and two of his Inspectors, the problems associated with the concrete placement of the east secondary shield wall, steam generator block-out area which had been made the previous day. The two QC Inspectors mentioned that Construction had cut off the tremies (chutes used to direct the flow of concrete) too short thus resulting in concrete free-fall of about 10 feet instead of the maximum permissible free-fall of 42 inches. The Inspectors had mentioned this problem to the Concrete Foreman twice, but he failed to correct the situation. They also had mentioned the problem to the Concrete General Foreman, however, he did not attempt to correct the condition until they threat-

ened to walk off the pour. I told them that they only need to tell a Foreman once to correct a situation and that if he doesn't correct the condition prior to continuing the pour, they have "Stop-Work" authority. I told them that I would attend the post-placement meeting and would try to get things straightened out.

At the post-placement meeting, the excessive free-fall of concrete and the apparent lack of construction action to correct the matter was discussed. I informed the Concrete Superintendent that the Inspectors had been instructed to stop the pours if they had any difficulty in getting items of concern corrected. The Concrete General Foreman said that based on what he was told about the problem, he took immediate corrective steps. One of the QC Inspectors said that he disagreed with the Concrete General Foreman. The Concrete General Foreman replied, "Don't call me a liar or I will come across that table after you." At that point, I told the Concrete Superintendent that unless we changed the attitude of this meeting real quick, we would reconvene in the QA Manager's office. After much discussion on the topic, we all agreed that better communication was needed between Construction and QC. Later that day, Construction management met with the Concrete General Foreman to discuss the unacceptability of his attitude and actions at the post-placement meeting.

In addition, on one occasion in 1979, a QC Inspector informed me that a carpenter had threatened him with a wrench because the Inspector kept turning on a water hose to keep moist a concrete pour that was curing. The carpenter was stripping forms from the pour and the hose being on made his work wet and cold. I went back to the area involved with the QC Inspector, but the carpenter was gone. The QC Inspector was not able to identify the carpenter, so the Inspector and I agreed to drop the matter.

Q. 17 In your view, did there at any time exist "a pattern of behavior designed to intimidate the inspectors?"

A. 17 (GTW, CMS): No. Although there were job gripes by Inspectors, together with natural QC/Construction tensions, as discussed above, these never amounted to any "pattern of intimidation." In the five years of construction, there have been only two situations of physical contact between QC and Construction personnel, and although everyone viewed these instances as highly unfortunate, they do not amount to any pattern of assaults on QC Inspectors. Even those directly involved in these situations have explained them as isolated emotional exchanges rather than a part of a pattern of harassment.

Q. 18 Do you know of any case in which an Inspector was fired as part of a "pattern of behavior designed to intimidate the Inspectors?"

A. 18 (GTW, CMS): Absolutely not. Inspectors were terminated for different reasons, including such things as excessive tardiness, excessive absenteeism, insubordination, or false information on an application form. We know of no incident in which a QC Inspector was fired in order to intimidate that Inspector or other Inspectors on the Project.

Q. 19 What technical knowledge is required for a QC Inspector to competently perform his duties?

A. 19 (GTW, CMS): The technical knowledge required of an Inspector varies depending on discipline. In general, an Inspector does not need the level of engineering expertise required to design a structure, but must have sufficient technical knowledge of his particular discipline to understand technical terminology and to understand and interpret the design/construction requirements established by the Engineers. On the other hand, an Inspector will often be more familiar with, and experienced in, judging the adequacy of construction practices than the original designer would be.

Q. 20 Would there be situations in which an Inspector would need additional engineering guidance in order to fully perform his work?

A. 20 (GTW, CMS): Although an Inspector would have the basic skills necessary to read and apply various design/construction requirements, there are situations in which an Inspector's

interpretation may differ from a constructor's interpretation, and a higher level of quality or design engineering clarification is required.

Q. 21 Mr. Singleton, in light of the panel's response to question 20, please explain the intent behind a memo, dated April 18, 1979, from you to all Civil QC Inspectors, limiting communications between QC and Design Engineering to "a level no lower than the Lead Inspectors."

A. 21 (CMS): I wrote that memo after receiving comments from both Construction personnel and QC management that inspectors were spending too much time out of their assigned inspection areas discussing design issues with Design Engineers by telephone. The primary intent of that memo was to assure that the Inspectors were available at all times to perform their required field activities. It was not intended to prevent a QC Inspector from obtaining design engineering clarifications. The memo was consistent with the QA organizational structure, and the functional job description for QC Inspectors and Lead Inspectors. The Lead Inspector generally has equivalent or greater technical expertise than an Inspector working under this direction, and in addition, he has first line supervisory responsibility for the Inspectors assigned to him. Furthermore, similar questions often arise with respect to design documents used throughout the plant, and I felt it was important to try to have consistent

QC resolution of such questions, by assuring that resolution was achieved at the management level. In short, I felt that the best distribution of responsibility was to have Inspectors take up design interpretation questions with Lead Inspectors who would then decide, with Engineering input as needed, the resolution of such Inspector questions.

In retrospect, we might have done a better job of communicating to Inspectors the resolution of the design questions raised by them. However, one of the difficult problems in supervising QC Inspectors is that there is a natural tendency for a motivated Inspector to want to make individual judgments as to engineering adequacy, as opposed to performing the more limited function of verifying compliance with engineering design documents as he is supposed to do. It is the task of the discipline QC Supervisor to make sure that the Inspector understands the scope of his review.

Q. 22 Mr. Warnick and Mr. Singleton, who in the organization is responsible for verifying the design, if it is not the Inspector?

A. 22 (GTW, CMS): Once the design is completed by the designer, it is submitted to another individual in B&R design Engineering with equivalent technical expertise who was not involved in the original design. Through the use of alternate or simplified calculation methods or by the performance of a

suitable testing program, this reviewer checks and verifies the adequacy of the original design. These documents are then transmitted to the appropriate HL&P Design Engineering group for their review and concurrence.

Q. 23 How are nonconformances identified and resolved?

A. 23 (GTW, CMS): The procedures for handling nonconformances have been changed in some details a few times over the life of the Project, but they have generally been handled as follows: Nonconformances are usually identified by QC Inspectors during final inspections, and are documented on a Nonconformance Report (NCR). Valid NCR's are forwarded for Engineering disposition and the Engineer usually will make one of the following dispositions: (1) use-as-is (the departure has no adverse impact on a safety margin and Construction may proceed as is); (2) rework (the condition is not acceptable as is, and must be changed by Construction to bring it into conformance with the design document); (3) repair (the condition is not acceptable, cannot be reworked, and must be made acceptable by some approved alternate method, such as grouting of concrete voids or removing defective weld material and rewelding); or (4) scrap (the condition is not acceptable and is not able to be reworked or repaired, and must be removed).

After the NCR is dispositioned, it is sent to Construction or to another discipline as appropriate, for implementation of

the Engineer's disposition instruction. The QC Inspector then reexamines the work against the Engineer's instruction, and if the work is found acceptable, closes out the nonconformance and records this on the NCR. If not acceptable, he notes this on the original NCR and writes a second NCR, and the above cycle is repeated.

Q. 24 Was there a concern by Inspectors that Nonconformance Reports were not being properly resolved, in the time prior to the Order to Show Cause?

A. 24 (GTW, CMS): Some Inspectors were concerned over the number of nonconformances that were dispositioned "use-as-is." Unfortunately, a number of Inspectors apparently viewed the "use-as-is" disposition as a conclusion by Engineering that there was no basis for the original nonconformance. In other words, the Inspectors felt they were being told that their conclusion was wrong.

However, Site QA management understood that the "use-as-is" resolution was not a criticism of the Inspector's nonconformance report, and tried to make the Inspectors understand this. It was stressed by QA/QC management that the Inspectors should continue to identify all nonconformances without concern that similar nonconformances may previously have been dispositioned "use-as-is." As previously stated, we believe that Inspectors did just that, and that all nonconformances were identified.

Q. 25 Was Construction critical of the number of nonconformances issued by QC Inspectors?

A. 25 (GTW, CMS): As already stated, there is a natural tendency for some Construction workers to be unhappy when their work is subjected to unfavorable review by Inspectors, and this was the case with some Construction workers at STP. Furthermore, some Construction workers viewed Engineering's "use-as-is" dispositions as evidence that Inspectors were being overly critical of Construction, and made this known to the Inspectors.

Q. 26 Regarding the criticisms discussed above, do you think the Inspectors were satisfied that they had adequate backing and support from their QA management?

A. 26 (GTW, CMS): With respect to the "use-as-is" situation discussed above, it was important to the Inspectors that their Site QA management defend the nonconformances being written and support the Inspectors when construction was critical. In this area, the QC Inspectors generally viewed QA management as supportive of their nonconformance reporting practices. However, to the extent that the Inspectors themselves were unhappy with the number of "use-as-is" Engineering dispositions as discussed above, there did persist the feeling by some Inspectors that somehow B&R management should reduce the number of "use-as-is" dispositions and that the failure to do so represented "a lack of management support." QA management's

position was to keep stressing that Inspectors should continue to identify all nonconformances. We believe Inspectors continued to perform all required inspections and to identify all nonconformances.

Q. 27 Was Construction critical of the QC Inspectors for reasons other than alleged excessive writing of nonconformances?

A. 27 (GTW, CMS): Yes. There were, from time to time, criticisms expressed to QA management that Inspectors were not available at the proper time to perform required inspections, and that this unavailability of Inspectors resulted in unnecessary delays, and in cost and schedule impacts that could have been avoided with no adverse impact to the QA functions. In addition, there were some complaints that Inspectors were not always as tactful as they should have been in communications with their peers in Construction during inspection activities. To the extent that those criticisms were well-founded, such actions by Inspectors resulted in a worsening of the natural tension that existed between QC and Construction. QA management was of course, concerned about such criticism, and stressed to Inspectors that they should make every effort to perform thorough inspections as efficiently and in as timely a manner as possible.

Q. 28 Were there criticisms of QA management by QC Inspectors other than those discussed above?

A. 28 (GTW, CMS): Yes. QC Inspectors have complained that they were not being given adequate salaries and other job benefits. Although these Inspectors were initially satisfied enough with Inspector salaries and benefits to cause them to accept employment as Inspectors, once they were on the Project, they tended to feel that remuneration and other recognition was not increased sufficiently over time. In fact, however, salaries have been substantially increased.

Other than salary, common Inspector complaints centered on the need for such things as pick-up trucks, field radios, field shacks (as opposed to smaller metallic "gang boxes" similar to those used by craft personnel), and gold-colored construction hats (denoting management status). Without these benefits, Inspectors felt that they appeared to have "second class status." QA management worked to obtain upper level B&R and HL&P authorizations for such benefits, and these have been instituted over time although not as fast as some Inspectors would have liked.

In addition, on occasion a QC Supervisor would have to overrule an Inspector's decision on a particular issue. While this rarely happened, it may have been perceived by some Inspectors as a lack of management support. In reality, however, it was simply part of the Supervisor's job to correct errors made by his Inspectors or exercise judgment based on his experience.

Q. 29 With reference to the QC Inspector criticisms discussed above, to your knowledge, did the Inspectors feelings and attitudes which caused such criticisms to be made ever adversely affect an Inspector's job performance?

A. 29 (GTW, CMS): No. We are not aware of any situation in which an Inspector's dissatisfaction with management resulted in a failure to properly and fully perform all required inspections.

Q. 30 Mr. Singleton, it has been alleged that certain QC inspections were not performed beginning in July 1977 because certain Inspectors decided to play cards rather than "risk their safety on the plant grounds". Do you know of any instances in which required inspections were not performed because of card playing, fears about personal safety, or for any other reason?

A. 30 (CMS): This charge is totally without basis, and I believe the NRC Staff has fully investigated such charges and concluded the same. There had been from time to time, during periods of especially low construction activity, some card playing among QC Inspectors during working hours. I recall a period between December 1976 and January 1977 when this occurred. Subsequently, there has been no card playing except during lunch breaks. Although I have been accused of being one of the card players during mid to late 1977, I have no knowledge of

these alleged card games. In no case was there a failure by a QC Inspector to perform a required inspection because of card playing.

Q. 31 Mr. Warnick and Mr. Singleton, what is your overall assessment of the effectiveness of the STP QA program during your association with STP?

A. 31 We are confident that all significant structural deviations have been identified by QC. We are aware of the welding and concrete problems that have come to light in the course of the project. What we are saying is that the QA/QC program has identified these matters.

We take personal offense at any suggestion that QC on this job was not performed properly. The QC program was working as evidenced, in part, by the problems that have been identified through the NCR's written in the course of carrying out the QC program. As stated several times already, there was no pattern of harassment or intimidation of QC Inspectors, nor are we aware of any QC Inspectors who have failed to perform assigned inspections as a result of attempted intimidation or harassment.

T.Hudson:11:02:F

Testimony of Mr. Logan D. Wilson
On Allegations of Harassment and Intimidation of QC Inspectors

Q. 1 Please state your name, occupation and work location.

A. 1 L. D. Wilson. I am employed by Houston Lighting & Power Company (HL&P) at the South Texas Project (STP) construction site as Project QA Supervisor, Mechanical/NDE.

Q. 2 Please describe your educational background and work history prior to your employment at STP.

A. 2 I graduated from Sam Houston State University in 1968 with a Bachelor of Science degree in Industrial Arts.

From 1967 through 1971, I was employed by Todd Shipyard's Nuclear Division and worked on the nuclear ship U. S. Savannah. My assignments included: drafting, conceptual design of facilities and equipment, prototype testing, procedure and welder qualification, welding engineering and stress analysis. I was in charge of the work crew performing the modification of the Savannah's reactor core II. This work required extensive involvement in welding design and construction and quality control requirements.

In 1971, I joined Southwestern Gas Pipeline. My assignments included (1) the drafting of specifications and procedures for pipeline construction, testing, operation and maintenance; (2) qualification of welders; (3) calculations

and design of pipelines; (4) construction projects, including gas handling, compressing and metering stations. I also was in charge of the company's safety program and its compliance with applicable state and federal regulations.

In 1974, I joined the HL&P Quality Assurance (QA) Department. I worked extensively on a fuel oil pipeline project which involved surveillance of welding activities. In the course of this work, I supervised and assisted in the interpretation of approximately 40,000 radiographs of various welds. I also worked on the Allen's Creek Nuclear Generating Station QA program in an off-site capacity.

Q. 3 Please describe your work history at STP.

A. 3 I came to the STP site in March 1976 as Lead Specialist-Mechanical Section in HL&P's QA department. In this capacity I was primarily responsible for implementation of the QA program as it related to the mechanical discipline. I reported to Mr. S. A. Viaclovsky, the HL&P Site QA Supervisor. In November 1978, I became the Site QA Supervisor for HL&P with administrative responsibility for the overall site QA program. Following the NRC's Show Cause Order of April 30, 1980, HL&P reorganized the QA department by removing several layers of off-site management and moving the head of the program to the site. I became the Project QA Supervisor, Mechanical/NDE in the reorganized QA department.

My group provides programmatic and technical direction in the formulation and implementation of B&R's QA/QC program for Mechanical/NDE activities.

Q. 4 What is the purpose of your present testimony?

A. 4 I will describe, from the perspective of the HL&P site QA personnel, HL&P's review and participation in the resolution of concerns regarding harassment and intimidation of Quality Control (QC) Inspectors by Construction forces.

Q. 5 Have there been instances at STP of physical confrontations between QC Inspectors and Construction personnel or verbal threats directed at QC Inspectors by Construction personnel?

A. 5 Yes, there have been several such instances. While the number of cases has been small, these were matters deserving of management attention. The evidence does not indicate that there was ever any widespread pattern or plan of harassment designed to intimidate QC, nor has the quality of construction been adversely affected. We believe that appropriate measures have been implemented on the Project to minimize the likelihood of similar cases occurring in the future.

Q. 6 When did you first become aware of any physical confrontations or verbal harassment involving QC Inspectors?

A. 6 From the time I arrived at the STP site in March 1976 until mid-1977, I saw nothing, nor was anything brought to my attention, indicating that Construction forces were harassing or attempting to intimidate QC inspectors.

I first became concerned about the degree of tension between the Brown & Root (B&R) Construction and QC personnel following a physical confrontation between Mr. James Marshall (B&R QC) and Mr. Joe Bazea (B&R Concrete Foreman) on June 30, 1977, which is described in the testimony of Mr. Singleton.

Q. 7 How did HL&P become aware of the Marshall incident?

A. 7 We did not witness the event, but were promptly informed by B&R.

Q. 8 How did HL&P respond to this incident?

A. 8 We were concerned and I instructed one of my inspectors to investigate the situation. As a result of the investigation, I wrote a memorandum which Mr. Vaclovsky sent Mr. Phillips, the immediate off-site supervisor of HL&P's STP QA department, setting forth our concerns. Although the Marshall incident was an isolated incident involving QC and Construction personnel, we were concerned that the quality of work on the Project would be jeopardized if QC Inspectors were intimidated in the performance of their inspection duties. We felt that a strong response by

B&R would help to clear the air and to set a proper standard for future Construction-QC relationships.

Q. 9 Did Mr. Phillips take any action upon receipt of your memorandum?

A. 9 Yes, he and Mr. Asbeck, HL&P's Site Construction Manager, met with Mr. Carl Crane, B&R's Construction Project Manager, to discuss our concerns. Mr. Crane subsequently reported to Mr. Asbeck that B&R had taken the following actions:

(1) held a meeting at which QC and Construction Supervisors were told (i) that disagreements in the field shall be passed up the line of command for resolution in a business-like manner and not resolved by arguments in the field and (ii) that failure to follow the policy would result in disciplinary action;

(2) held a meeting with all concrete personnel to explain the policy described above; and

(3) informed the QC Inspectors that disciplinary action would be taken against anyone who was threatening then.

Q. 10 Was HL&P satisfied with the actions taken by B&R?

A. 10 Yes. Such action was adequate in light of the events that had occurred at that time. We had investigated the matters thoroughly, made recommendations to B&R and saw that the problems were addressed by B&R. Our interviews indicated that the QC Inspectors were not being intimidated, that no quality problems were being overlooked and that the Marshall incident did not amount to, or evidence, a pattern of harassment or intimidation directed at QC Inspectors. Our findings were confirmed by the NRC's investigation which included interviews with all Civil QC Inspectors and was reported in I&E Report 77-08.

Q. 11 Have there been any other physical confrontations between QC Inspectors and Construction personnel since the Marshall incident in mid-1977?

A. 11 I know of only one incident that has occurred since then. This incident occurred on March 7, 1979, and involved a B&R Construction Engineer, Gary May, and a Civil QC Inspector, Jerry Lacey. These individuals were working on a particular pour and a disagreement started over the cleanliness of the pour. The disagreement started early, continued during the morning and became more heated as the day progressed. Eventually Mr. Lacey indicated that Mr. May was a liar and Mr. May took a punch at Mr. Lacey, grazing his shoulder. Mr. Lacey grabbed Mr. May who regained his composure and the incident ended.

B&R took the following actions within two days of the incident:

(1) removed Mr. May from the site;

(2) reprimanded Mr. Lacey for his unprofessional conduct; and

(3) gave the Inspector's Supervisor, who was present throughout, a three day suspension for allowing the situation to deteriorate to a physical confrontation.

I personally investigated this matter for HL&P by interviewing eye-witnesses. B&R's response was appropriate and demonstrated strong support for the QA/QC program. The NRC also investigated this incident and reached the same conclusion in I&E Report 79-04.

Q. 12 Did you sense friction between B&R Civil QC and Construction personnel in 1977-78?

A. 12 There is always some friction between construction and QC, if QC is performing its job, and the level varies from time to time. The nature of the relationship between Construction workers and the QC Inspectors who review their work assures that there will be some degree of tension between the two organizations. In fact, as a QA man, I would be suspicious if there were no disagreements, or friction, between QC and Construction. It appeared to me,

however, that there might have been more friction than necessary at STP in 1977 and 1978. It is ironic that this QC-Construction friction is cited by some as evidence of a "breakdown" in the QC program, because the friction that existed actually evidences just the opposite. This greater than normal friction would not have existed at all if QC had not been doing its job and doing it well. A "breakdown" in QC would have resulted in little or no friction with Construction.

Q. 13 Was the existence of QC-Construction friction the same thing as "harassment and intimidation" of QC?

A. 13 Absolutely not. We were concerned about this friction because it could cause harassment, abuse, or attempted intimidation, which could result in non-conformances being overlooked; but QC-Construction friction is not the same thing as harassment or intimidation. Most QC and Construction personnel have properly performed their jobs under pressure and with some friction between themselves, but without abuse or harassment from either side, that is, they have performed as professionals should.

I&E Report 77-08 found that in one instance threats had been made by and to a QC Inspector and that minor harassments, such as offensive comments on the radio, had been directed at some of the QC Inspectors. During the period

1977 through mid-1979, however, neither HL&P nor the NRC, as evidenced by the I&E Reports, was receiving specific allegations of serious threats or abuse being directed to QC Inspectors. The Inspectors' principal complaints in this time period related to inspection burdens and problems they perceived with QA/QC management rather than Construction. Thus, while we were concerned that the QC-Construction friction could lead to abuse or attempted intimidation, we received no indications from the QC Inspectors that there were problems in this regard.

Q. 14 Would you have known if B&R QA/QC was receiving any specific complaints of harassment or intimidation?

A. 14 Yes. We were in daily contact with B&R QA/QC management and they were equally sensitive to the issue of possible harassment of QC Inspectors. We had meetings on a more or less weekly basis to discuss QA/QC matters and they would have raised this issue had they received complaints of this nature. In addition, HL&P had QA personnel in the field quite often and nothing spread faster on the Project than news of any type of confrontation between workers.

Q. 15 Since the Marshall incident in mid-1977, has HL&P had any other occasions to be concerned about potential harassment or intimidation of QC inspectors?

A. 15 Yes, as discussed in Dr. Broom's testimony, Mr. Swayze was fired on August 22, 1978. Mr. Swayze claimed that his firing was a form of intimidation and the NRC immediately initiated a site investigation. In light of this allegation, the unusual circumstances of Mr. Swayze's firing, and the NRC investigation, we were concerned that some QC Inspectors might improperly interpret the firing as an attempt at intimidation. To guard against any deterioration in QC, HL&P increased its formal and informal surveillances of concrete placements in September 1978 and for several months thereafter. The formal surveillance, i.e, a surveillance which is documented on a checklist, was normally done once a month, but in September we performed five such surveillances. We performed at least two in each of the next eight months. In addition, the informal, undocumented surveillances were substantially increased in September 1978. By having our people out in the field more often, we were able to evaluate the QC Inspectors' reaction to Swayze's firing and its impact on their job performance.

Q. 16 What was the conclusion of your evaluation?

A. 16 Mr. Swayze's firing had no adverse impact on the QC Inspectors' job performance. It appeared to us that the Inspectors were continuing to do a good job. Our observations confirmed statements made by the individuals interviewed by

the NRC as reported in I&E Report 78-14. All of these individuals, except Mr. Swayze of course, doubted that Swayze's firing would adversely affect the job performance of other Inspectors.

Q. 17 Were any other steps taken at this time to insure that QC Inspectors would not misinterpret Mr. Swayze's termination?

A. 17 Yes. B&R's Site QA manager issued a memorandum to all QA/QC personnel confirming management support for their activities. The memorandum reiterated that QC Inspectors did not have to put up with verbal abuse from any level. QC Inspectors were instructed not to react to verbal abuse, but rather, to report any incidents to management. The memorandum also confirmed that Inspectors were not to compromise the design requirements by overlooking violations of Codes or Standards during their inspections.

Q. 18 Has HL&P taken seriously any threats made against QC Inspectors and verbal abuse of Inspectors?

A. 18 Yes, we have always investigated any complaints of this type and taken appropriate action. This problem, however, is much tougher to deal with than physical confrontations because language at a construction site that constitutes verbal abuse to the listener may be the speaker's normal and natural way of expressing disagreements. When a

Construction worker tells you that he disagrees with a criticism you have made of his work, he is not likely to use the terms of a lawyer, i.e, "Sir, I beg to differ with you on that point." Instead, the Construction worker is likely to be loud, direct and possibly profane in communicating that you are wrong. Unfortunately, to some QC Inspectors this type of conversation may constitute verbal abuse, even when it was not so intended by the speaker.

I want to stress that I do not approve of using abusive or profane language in work situations. Nor am I suggesting that all allegations of verbal abuse result from misunderstandings of this type. There have been a limited number of instances of true verbal abuse of QC Inspectors. But not every comment a QC Inspector finds offensive constitutes verbal abuse. It is reasonable to demand, and we do demand, that no person lose his temper to the point of striking another person, but it is unreasonable to require that every Construction worker conduct himself so as to not offend any QC Inspector, and vice versa. We and B&R investigate all complaints of verbal abuse or threats and action is taken when warranted. The actions taken have included reprimands, suspensions without pay, and firings in extreme cases involving serious threats.

Q. 19 What actions has HL&P taken with respect to the allegations of physical confrontations with or verbal abuse and harassment of QC inspectors?

A. 19 As I noted earlier, there were no specific allegations of this sort brought to our attention prior to mid-1979, other than the Marshall and Lacey incidents and Mr. Swayze's termination of employment. After both the Marshall incident and Mr. Swayze's termination, the QC inspectors were informed that they did not have to take verbal abuse or threats from anyone and that these matters should be reported to management for resolution. The actions taken by B&R after the Lacey incident in March 1979 demonstrated again that such events were taken seriously and that sanctions would be applied when warranted.

While no specific allegations of harassment or abuse that could be investigated had been made to us, we were aware of the friction between QC and Construction and increased our surveillance of concrete pours in an attempt, in part, to control this situation. Beginning in early 1979, HL&P QA personnel covered almost all major concrete pours. These personnel were instructed to be particularly alert to any harassment or intimidation of QC Inspectors and to report such incidents to me. Since concrete placements had been the scene of past controversies, we thought our presence

would tend to preclude such behavior. I also worked out an arrangement with Mr. Warnick at B&R whereby he would inform me as soon as he became aware of any such allegations and enable HL&P to participate in the initial investigations. I did this so that HL&P would have a better understanding of any allegations and to demonstrate to any QC Inspector making an allegation that HL&P, as well as B&R, was concerned and involved in the resolution of his or her concerns.

Q. 20 Have HL&P and B&R jointly investigated any allegations of abuse or threats directed at QC Inspectors?

A. 20 Yes. The first specific allegation of this nature since the Marshall incident of which I am aware occurred in August 1979. Mr. Warnick and I jointly investigated allegations made by two QC Inspectors that five Construction Superintendents or Foremen had threatened them. HL&P also reported this allegation to the NRC. While we generally confirmed that the Construction personnel had made the statements attributed to them, or similar statements, it was very difficult to determine whether these statements were truly serious threats. Because the statements represented, at a minimum, unprofessional conduct by relatively senior Construction personnel and were interpreted as serious threats by the QC personnel, the Project Manager reprimanded

the Construction personnel and warned them that any repeat would result in dismissals. In late November 1979, I spoke with both QC Inspectors and some of the Construction personnel and neither group reported any subsequent problems. Since then I have seen one of the QC Inspectors on several occasions and have inquired about harassment/abuse problems. On each occasion the answer has been that no problem existed.

Q. 21 Have there been any other allegations of harassment or abuse since the August 1979 incident described above?

A. 21 Yes. Between August 1979 and year-end there were several allegations, one of which involved the incident witnessed by Mr. Singleton and described in his testimony. All allegations were investigated and the actions taken included reprimands and terminations.

Q. 22 What actions were taken by HL&P and B&R as a result of the complaints investigated in late 1979 and the NRC investigation during the same period?

A. 22 As described in HL&P's May 23, 1980 response to the NRC Notice of Violation, many actions were taken by HL&P and B&R to provide positive support by management and eliminate any harassment, intimidation and threats to inspection personnel. The revision of procedures for handling Non-Conformance Reports as well as the adoption of new procedures

for resolving disputes between Construction and QA/QC personnel were aimed at eliminating confrontations which could result in harassment and at improving perceptions of the "fairness" of decisions reached. Steps have been taken to improve morale of B&R's QA/QC personnel through job reclassifications, salary reevaluations, more frequent contacts between QA management and site QA/QC personnel, emphasis on the B&R "open door" policy for all employees and refresher training courses. HL&P has increased its involvement in the QA/QC program at the site and taken steps to improve HL&P QA visibility in the field and thus lessen the probability of harassment and intimidation. Accordingly, in addition to attending virtually all concrete placement meetings as well as concrete placements since early January 1980, HL&P personnel have been instructed to spend more time in the field, have been provided "high-visibility" hard hats, have received extra radios so as to better monitor B&R radio traffic, etc.

Q. 23 Have these measures been successful?

A. 23 Yes, we believe they have. I am aware of only two substantiated instances of threats or confrontations between QC and Construction since the Show Cause Order was issued. In one instance both the QC Inspector and the Construction man were at fault and both were suspended for 3 days without pay. In the other incident, a Construction

worker made an idle threat, apologized immediately, but was disciplined anyway. In addition, B&R surveys and NRC interviews have confirmed that the Civil Mechanical and NDE QC Inspectors do not perceive that they are being harassed. See I&E Report 80-25.

The possibility of future conflicts between Construction and QC personnel cannot be precluded at STP anymore than at any other large construction site. Construction forces, however, now have a much better appreciation of QC's role and the importance of that role. Moreover, both Construction and QC personnel understand that neither B&R nor HL&P will tolerate fighting on the job or other forms of harassment or intimidation.

Q. 24 Have the incidents of harassment and attempted intimidation resulted in any non-conforming conditions being overlooked?

A. 24 We have asked this question in every investigation and the answer always has been negative. There is no evidence indicating that these problems have resulted in deficiencies which compromise the quality of the work completed to date. This fact was confirmed by the NRC in I&E Report 79-19.

T.Hudson:06:D