

6/2/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

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| In the Matter of |) (| |
| |) (| |
| APPLICATION OF TEXAS UTILITIES |) (| Docket Nos. 50-445 |
| GENERATING COMPANY, ET AL. FOR |) (| and 50-446 |
| AN OPERATING LICENSE FOR |) (| |
| COMANCHE PEAK STEAM ELECTRIC |) (| |
| STATION UNITS #1 AND #2 |) (| |
| (CPSES) |) (| |

CASE'S RESPONSE TO APPLICANTS' MOTION FOR
SUMMARY DISPOSITION OF CASE'S CONTENTION 5

I. INTRODUCTION

On May 11, 1982, pursuant to 10 CFR 2.749, Applicants filed their Motion for Summary Disposition of CASE's Contention 5. CASE (Citizens Association for Sound Energy), Intervenor herein, hereby files this, its Response to Applicants' Motion for Summary Disposition of CASE's Contention 5. As demonstrated herein, the Applicants' Motion is without merit and as a matter of law CASE is entitled to a full hearing on all aspects of Contention 5.

II. CASE'S RESPONSE TO APPLICANTS' MOTION FOR
SUMMARY DISPOSITION OF CASE'S CONTENTION 5

A. Applicants use an inappropriate logic to support summary disposition.

Applicants repeatedly turn to the logic that if they, the Nuclear Regulatory Commission (NRC), American Society of Mechanical Engineers (ASME), or someone else found a problem and resolved the problem in some way, then there is no genuine issue of fact remaining. See e.g. "Applicants' Motion for Summary Disposition of CASE's Contention 5" (May 11, 1982) at 11, 30-31, 33-34, 42; "Affidavit of Susan L. Spencer Regarding Disposition of NRC I&E Reports" at 1-2.

When the NRC resolves an Inspection and Enforcement (I&E) matter, or ASME resolves an ASME matter, or the Authorized Nuclear Inspector (ANI) verifies

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completion of some activity, such resolutions or verifications are confined to the specific purpose for which they were conducted. See generally Nuclear Engineering Co., Inc. (Sheffield, Ill. Low-Level Radioactive Waste Disposal Site), CLI-80-1, 11 NRC 1 (1980) (Licensing Board not bound by "apparent conclusions" of Commission).

Applicants' reliance on the fact the NRC has "resolved" a particular question may in fact be unwarranted. There have been cases where staff investigations of quality assurance questions have proven incomplete. See Consumers Power Co. (Midland Plant, Units 1 and 2), ALAB-283, 2 NRC 11, 13-14 (1975).

Even where the NRC Director of Inspection and Enforcement has found a violation and resolved the violation to his satisfaction, a Licensing Board is not foreclosed from inquiring into the matter and reaching an independent determination. Houston Lighting and Power Co. et al. (South Texas Project, Units 1 and 2), CLI-80-32, 12 NRC 281, 289 (1980).

A history of non-compliance with NRC regulations, whether resolved or not, can form an independent and sufficient basis for denying an operating license. Id. at 291.

Finally, where it appears the NRC Staff is going to take a position favoring the Applicants, an adversary intervenor should have the opportunity to examine the acceptability of staff resolutions or Applicant resolutions. See Houston Lighting and Power Co. et al. (South Texas Project, Units 1 and 2), ALAB-639, 13 NRC 469, 481-482 (Kohl, dissenting) (1981).

Contention 5 calls into question Applicants' effective implementation of a QA/QC (Quality Assurance/Quality Control) program pursuant to 10 CFR Part 50, Appendix B. Wherever violations of that Appendix have occurred or wherever construction failures demonstrate an inadequate QA/QC program, CASE is entitled to explore these matters and the Board is not bound by any prior determination on these matters by others.

Contention 5 also calls into question the construction practices employed at Comanche Peak. Applicants have continually attempted to limit this contention to the paperwork Quality Assurance/Quality Control aspects of the contention and seek to ignore completely the construction practices employed at Comanche Peak. CASE's Contention 5 basically says that the plant hasn't been built the way it should have been, and that Applicants' Quality Assurance/Quality Control program demonstrates that it hasn't been built according to NRC regulations or the Applicants' own commitments.

QA/QC Organization At Comanche Peak

1. Applicants state:

"Applicants have established a QA/QC program during the construction phase at Comanche Peak which assigns QA/QC functions among TUGCO/TUSI, Gibbs & Hill, Inc., the Architect-Engineer, Brown & Root, Inc., the Construction Manager/Constructor and Westinghouse Electric Corporation, the nuclear steam supply system supplier. Affidavit of David N. Chapman at 2-3."

This statement, while perhaps true if only the words are looked at and not the meaning behind them, is misleading in its implications. In fact, the QA/QC program established by Applicants during the construction phase at Comanche Peak has been in a constant state of change, which is continuing at this very time.

This is clearly evidenced by Inspection and Enforcement (I&E) Reports and other documents which we are attaching. (See CASE Exhibit 2, etc.)

It should be noted that CASE's problem has not been that we do not have documents to support our contention. To the contrary, it has been that we have so many supporting documents that it has been difficult to choose among them to present a manageable, coherent package for the Board's consideration.

This is precisely the situation with regard to I&E Reports. When preparing our answer to Applicants Motion for Summary Disposition of CASE's Contention 5, we went through our I&E Reports and pulled out the ones we felt it important for

the Board to review. When we had finished, the stack was 10" tall.

We have therefore prepared a very brief summary of the violations, infractions, deficiencies and deviations contained in those reports and are attaching copies of just a few of the actual I&E Reports. In addition to the violations, infractions, deficiencies and deviations from the I&E Reports, there have been numerous Quality Assurance/Quality Control (QA/QC) construction problems identified as unresolved items in I&E Reports. As with the violations, infractions, deficiencies and deviations, there have been so many of these that it is simply not feasible to attach all of the I&E Reports in which they are contained.

We have therefore chosen just a few of the unresolved items and other pertinent comments from the Reports and are including them in our summary. Although many of these unresolved items have now been resolved (at least to the apparent satisfaction of the NRC Staff), they help to demonstrate the QA/QC problems and the type of construction practices with which CASE is concerned in our Contention 5.

This does not mean that the other reports which we did not copy are not important, but only that the volume of material would be extremely burdensome for the Board to review at this time with the hearings in a matter of days (in addition to the impossible burden, given the time frame, of CASE's copying them for inclusion in this Answer). Further, the Board has access to these I&E Reports (which we incorporate herein by reference) and we felt it more important to use our time and resources to attach documents which the Board does not have easy access to.

CASE's Exhibit 1 attached is a summary of the meaning of the different levels of violations, as supplied by the NRC Staff in response to CASE's interrogatories. CASE's Exhibit 2 attached is a brief summary of some of the I&E Reports which are pertinent to CASE's Contention 5. We would also point out that the first few I&E reports which were generated regarding Comanche Peak would provide the Board with

very helpful background information regarding the various organizations involved with the project, the initial organization of the QA/QC program, etc.

Since the NRC Staff has now advised (in a telephone conversation with CASE 5/28/82) that it intends to introduce no I&E Reports, it appears that the full burden of supplying copies of these numerous documents will be on CASE if a full and complete record of them is to be contained in the record of these proceedings.

As demonstrated in the early I&E Reports, Applicants didn't really even have what could properly be called a QA/QC program for some time. (See CASE Exhibit 2, pages 1 through 13; CASE Exhibit 3, I&E Report 73-02.) This included the time during which the excavation for the containment buildings, Units 1 and 2, occurred. As stated in I&E Report 75-05 (see CASE Exhibit 2, page 10):

"The inspector visited the site of the excavations for the containment buildings, Units 1 and 2. Evidence of rock 'overbreak' around the perimeters due to blasting was observed in both of the excavations but was more pronounced for Unit 1. This problem was reported by the licensee on February 4 (1975) in accordance with the requirements of 10 CFR 50.55(e).

"The inspector's examination of documentation relative to the excavations indicated an apparent lack of required quality control procedures applicable to excavating operations that have been completed.

"B&R (Brown & Root) inspection procedures relative to quality control activities for the excavations for the containments of CPSES, Units 1 and 2, did not exist." (Emphases added.)

From the time a QA/QC program was set up on paper, it has had many substantive changes -- so many, in fact, that Applicants convinced CASE that the time, cost and usefulness of having Applicants reproduce copies of all their past QA/QC manuals (as we had requested in our requests for documents) would be prohibitive and of questionable value because there were simply so many changes. For example:

From I&E Report 77-04 (see CASE Exhibit 2, page 42):

"(Closed) Unresolved item (76-09/III.A): Supplier control for calibration services. The initial problem regarding the control of calibration services for original equipment and recalibration services resulted in an extensive evaluation and revision to the overall on-site calibration program. The revisions included major revisions to the Construction, QC Inspection, and QA Surveillance Procedures." (Emphases added.)

From I&E Report 78-20 (see CASE Exhibit 2, page 69):

"(Closed) Deficiency (50-445/78-16; 50-446/78-16): Failure to Promptly Report a Significant Deficiency. The licensee's letter of November 7, 1978, stated that the licensee's procedures regarding review and reporting of 50.55(e) items would be revised and that appropriate personnel would receive indoctrination." (Emphasis added.)

"Mid Term Construction Permit Quality Assurance Inspection

"a. Licensee Quality Assurance Manual

"The above captioned inspection was initiated by the IE Resident Inspector, during the reporting period, since it appeared the licensee has essentially completed a major reorganization of the on-site quality assurance/quality control groups as well as the construction management organization. The reorganizations which have taken place also caused significant changes in the licensee's corporate and site quality assurance manuals and in a substantial quantity of the implementing procedures." (Emphases added.)

From I&E Report 79-18 (see CASE Exhibit 2, page 93):

"Reorganization of Quality Assurance

"The licensee and Brown & Root have recently implemented several changes in personnel assignments, some of which have caused the organizational structures to change.

"The licensee's Product Assurance Group has been abolished with all the group personnel assigned to staff functions in support of the Brown & Root QC Supervisor. Brown & Root has subcontracted with Gibbs & Hill for the services of one their employees to fill the position of QC Supervisor with the stated expectation that this person has the background of experience and knowledge to better train and motivate the some two hundred Brown & Root personnel assigned to perform QC functions.

"In addition, Brown & Root has expanded the role of the QA Engineering group and has assigned additional qualified personnel in an effort to provide more explicit direction in the QA/QC procedures and instructions. These changes have not affected Chapter 17.1 of the Final Safety Analysis Report. Site QA/QC procedures describing these changes in functions and responsibilities are currently being changed to reflect the actions.

"The RRI has been fully informed of the above changes before the fact and has no questions on the matter to date." (Emphasis added.)

From I&E Report 79-27/79-26 (see CASE Exhibit 2, page 105):

"Quality Assurance Procedures

"As noted in Inspection Report 50-445/79-18, the licensee has made substantive changes in his site Quality Assurance organization and other like changes have

occurred in the Brown & Root organization. As also noted in that report, the RRI was informed of each of these changes in advance and had no immediate concern since most of the changes appeared to enhance the overall effectiveness of QA/QC.

"During this inspection period it came to the attention of the RRI that the licensee and Brown & Root had failed to revise the organization control procedures to reflect the changes and that there were other procedures in the manuals which assigned functional requirements to personnel by titles which no longer existed. The RRI identified at least nine procedures in the licensee and/or Brown & Root manuals that were known to be obsolete for two or more months since they no longer represented the organization in place nor did they describe how certain activities were being accomplished in practice.

"The licensee was advised that the practice of making substantive changes without immediate addressment in appropriate procedures placed them in non-compliance with Criterion V of Appendix B to 10 CFR 50. The general condition and the nine procedures identified by the RRI were identified to the licensee in a Notice of Violation forwarded on November 21, 1979." (Emphases added.)

From I&E Report 80-04:

"The examination of the report" (TUGCO QA Audit Report TCP-6, Audit of Site Engineering Activities) "of a TUGCO audit conducted early this year revealed that a thorough audit had been conducted of field design activities. A comparison of NRC identified procedural weaknesses with the audit findings revealed that they had been identified by the TUGCO auditors. Management representatives stated that they were aware of the audit findings and were actively revising their procedures to eliminate the identified deficiencies. A schedule for completion of these activities had not been established at the time of this inspection." (Emphasis added.)

From I&E Report 81-02:

"During a tour on February 20, 1981, which included the 790 ft. level of the Unit 1 Safeguards Building, the RRI noted that a run of piping, estimated to have been about 18 feet long, was unsupported except for being attached to a valve by the connecting weld. Further examination revealed that valve was also supported at the other end by a weld to a continuing run of pipe which passed through a sleeve in the adjacent concrete wall. The unsupported length of pipe was estimated to weigh approximately 1500 lbs while the valve may have weighed at least that much more, all combining to place a considerable stress in the valve body. Such practices are not considered to be good industry practice and are specifically prohibited by the Piping Erection Specification, MS-100 and site procedures. An earlier comparable situation was the subject of a Notice of Violation issued with Inspection Report No. 50-445/80-11 to which the licensee has responded with a commitment to instruct the craft via procedures not to leave unsupported pipe in place.

"The licensee's commitment was implemented by a revision to Brown and Root Procedure CPM-6.9E which prohibited pipe from being supported by blocks, jacks or similiar methods if the pipe run were to be unattended. It appeared

to the RRI that this specific instruction had been violated in that there was a floor jack adjacent to the pipe and there was no evidence that there had ever been a more positive support in position. The RRI was also aware that several Nonconformance Reports have been issued during the past year, two of which are still active, dealing with the same problem. These Nonconformance Reports, along with the incident related above, indicate that the corrective action taken earlier was not completely effective. The RRI informed both the licensee and Brown and Root QA management of the findings which was in turn followed up with an official Notice of Violation transmitted by letter, dated February 25, 1981." (Emphases added.)

From I&E Report 81-05 (see CASE Exhibit 2, page 132):

"(Open) Violation (50-445/81-02) Failure to Follow Procedures For Piping Installation. The licensee stated in his letter dated March 19, 1981 to RIV regarding this matter that two procedures would be revised or issued, as appropriate to provide improved instructions to the craft labor force in this matter, i.e., removal of temporary supports to piping resulting in possible damage to installed equipment. The RRI has verified that procedure CPM-6.9E was revised to require that only 'hard' supports be utilized where the pipe fitters are not working on the piping run and that the supports be attached to the pipe so as to make removal by other craft difficult. Brown & Root has also published procedure CPM-14.1 pertaining to protection of installed plant equipment which prohibits craft other than the pipefitters from removing temporary supports from pipe runs without prior coordination with the responsible pipefitters. The RRI has observed that this action plan is in progress throughout the facility and should be completed by the committed final date of April 13, 1981." (Emphasis added.)

From August 28, 1981, letter to Hartford Steam Boiler Inspection and Insurance from Brown & Root, Glen Rose (see CASE Exhibit 12):

"Attached for your review and comment is a copy of the text of the CPSSES QA Manual which was revised as a result of the Houston/STP ASME Survey." (Emphasis added.)

From Response to Implementation Portion of Report of ASME Nuclear Survey Conducted October 12-14, 1981, at CPSSES (see CASE Exhibit

"The Corrective Action taken to resolve and preclude the recurrence of the deficiencies noted in the Implementation Portion (Section II) of your report dated November 23, 1981, are as follows:

"B. DEFICIENCY

"Instruction Procedures & Drawings - B&R Construction Procedure 6.9G, reviewed by the Site QA Manager, was in direct conflict with the QA Manual and the Code (NA-5241) in that it stated that the ANI would sign a blank process sheet and then B&R would add the ANI hold points. The AIA representatives stated that this procedure was not honored by them and that they had requested the procedure to be revised. The procedure has not been revised.

"The purpose of the site QA Manager's review is to assure that the procedure complies with the Code and the QA Manual.

"1. CORRECTIVE ACTION

Procedure CP-CPM-6.9G has been revised and Revision 4 issued on December 9, 1981. This revision has deleted Paragraph 2.6.1.2, which describes the Piping Modification Inspection Plan for establishment of ANI hold points. (See Attachment B)

The subject procedure was revised as the result of a meeting between B&R and an ANI. The revision was endorsed by the ANI because they were unable to review the large number of process sheets prepared by B&R. In any case, the stated practice was never used." (Emphases added.)

From 12/23/81 letter from Brown & Root, Glen Rose, to Hartford Steam Boiler Inspection and Insurance Company (see CASE Exhibit 13):

"In accordance with the Brown & Root CPSES Quality Assurance Manual, I am submitting the following B&R QA Manual changes for your review and acceptance:" (followed by a listing of 21 new sections). "The above revisions will not be issued until your acceptance is received. Please note your acceptance or re-question for resubmittal by checking the applicable block, signing in the space provided, and returning a copy of this letter to this office."

Acceptance is indicated on the bottom of the letter, along with the signature of R. C. Howard, and the date of 12/28/81.

From I&E Report 82-01 (see CASE Exhibit 11, page 9):

"The licensee stated that a final condition inspection program was under development that would be applicable to piping, piping support, electrical cable installations, and to instrument installation activities to detect damage and other conditions which develop as a consequence of the on-going activities affecting earlier accepted work."

"The licensee indicated that the necessary implementation procedures are under development, along with the manning requirements for the effort. This matter will remain unresolved until such time as the procedures have been published and reviewed by NRC inspectors." (Emphasis added.)

From I&E Report 82-02 (see CASE Exhibit 2, page 180):

*Preoperational Test Program Quality Assurance

"The inspector reviewed the applicant's Quality Assurance Plan to ascertain the following:

- "a. That the plan will provide controls over conduct of preoperational testing and related activities.
- "b. That the plan is consistent with FSAR commitments.

- "c. That the plan has been implemented.
- "d. That authorities and responsibilities have been established.
- "e. That requirements for inspection frequencies, procedures, and checklists have been established.
- "f. That methods for identification of deficiencies and methods of corrective actions have been defined.
- "g. That a system of audits has been defined.
- "h. That the personnel involved in the QA program have received the required training.

The inspector concluded that the applicant's program generally meets the above requirements, but the plan and procedures showed discrepancies and/or weaknesses in the following areas: a, e, and g, above. These areas and the program were discussed with applicant representatives. The NRC inspector was informed by the licensee that the program and procedures are undergoing a complete revision. It is the NRC inspector's understanding that the program and procedures when revised will fully address those areas where concerns were identified. Until such time as the revision is complete and has been reviewed, this item will be considered unresolved. (8202-01)" (Emphasis added.)

From CPSES Quarterly Report on QA Department and QA Program Activities for the First Quarter of 1982 (see CASE Exhibit 14):

"A. QA Manual Maintenance

"During this report period a general rewrite of the Brown and Root CPSES QA Manual was completed in preparation for the scheduled January 1982 ASME resurvey."

"The QA Manual was reissued on January 19, 1982 following incorporation of the ASME Resurvey Team's comments."

"Subsequent to the ASME resurvey, 2 revisions have been issued to the Brown and Root CPSES QA Manual."

From October 1, 1981 TUGCO Office Memorandum from G. Wayne Parry, Site Surveillance Supervisor, to A. Vega, re: Construction Site Surveillance Scheduling & Manpower (see CASE Exhibit 15):

"In order to establish a basic organization in this office, I have spent the past several weeks developing a scheduling system which will ensure QA coverage of the CPSES construction program..."

"Further evaluation of this schedule, which I consider only adequate, combined with the other requirements of this office...has lead me to the realization of increased manpower requirements. These requirements...if met, should provide for adequate schedule coverage once all personnel have achieved the training and experience level required for efficient performance of their assigned tasks."

"It is possible that increased manning may be required at a later time. This will be evaluated in mid-1982 and further addressed. However, the proposed manpower usage...I considered most effective based on the present level of training and experience of my staff." (Emphases added.)

Thus, the most recent changes of the Comanche Peak paper QA/QC program does little to relieve CASE's concerns regarding the QA/QC program and construction practices employed at Comanche Peak. There is no indication from past experience to suggest that these most recent revisions will provide proof that the plant has been built correctly any more than the past manual revisions have provided such proof. In any event, it is too late to correct many of the construction problems which have already occurred at the plant. Some have already been buried beneath the concrete, to resurface in years to come. Others might yet be discovered before the health and safety of the public is jeopardized.

2. Applicants state:

"TUGCO, as the lead applicant, has ultimate responsibility for quality assurance activities at Comanche Peak. TUSI is designated by TUGCO to have the authority to conduct the required support activities for implementation of the QA program at the site. Affidavit of David N. Chapman at 3-4."

This statement is also misleading in its implications. The responsibilities and authority for quality assurance activities at Comanche Peak have undergone drastic changes during the construction phase.

It may well be true that TUGCO has always had the ultimate responsibility for quality assurance activities at Comanche Peak. However, there are strong indications that they have abdicated that responsibility in the past -- including the recent past.

In their 4/1/82 (1) Responses to Requests to Produce, (2) Supplementation of Answers to CASE's Eighth Set of Interrogatories and Requests to Produce, and (3) Motion for Protective Order, Applicants stated in response to CASE's Eighth Set, Question 18.b:

"Question 18. We understand from your previous answers to interrogatories that TUGCO maintains ultimate control over Quality Assurance/Quality Control at Comanche Peak and has since October 17, 1974, concurrent with the issuance of the Limited Work Authorization.

"However, the FSAR indicates that Brown & Root, Inc. (B&R) as constructor and construction manager, is implementing the overall Quality Assurance system. In this regard, please supply the following information:

"(a) Has TUGCO and/or TUSI taken over more direct control of QA/QC from Brown and Root than was initially the case at the beginning of the CPSES project?"

(Answer was yes.)

"(b) If the answer to (a) above is yes, explain briefly the history of such change(s), the reason for such change(s), and any other pertinent details regarding such change(s)."

Answer: "As stated in our March 16, 1982, response to CASE's Eighth Set of Interrogatories, TUGCO has always maintained ultimate responsibility for QA/QC at Comanche Peak. Initially, Brown & Root was responsible for assuring the quality of work performed by Brown & Root and their contractors.

"As indicated in the documents provided in response to Question 18.c., TUGCO took over direct management of most activities because we were dissatisfied with Brown & Root's QA management at that time and their implementation of their QA Program. As early as 1976, we had become concerned over Brown & Root's QA Program implementation related to their suppliers. Also, at that time, it appeared to TUGCO that Brown & Root management needed to be more diligent in enforcing Quality requirements. In response to these concerns, TUGCO first placed a restraining order on Brown & Root vendor release inspections, requiring TUGCO supervision of these activities. This was in October, 1977.

"Over the next few months, the benefit of such direct involvement became obvious. Consequently, in January, 1978, we assumed direct management of all non-ASME related QA/QC work involving CPSES for which Brown & Root originally had been responsible. Work subject to ASME Boiler and Pressure Vessel Code, Section III, continued under Brown & Root's Certificates of Authorization. Applicants consider this arrangement to be acceptable in that ASME Code work is subject to an additional level of inspection by an independent third party.

"In sum, the principal purpose of the QA/QC reorganization was to develop a construction QA Program which would be tailored specifically and be responsive to the needs of the Comanche Peak project." (Emphasis added.)

This matter was also discussed in the NRC Staff's Trend Analyses done at the Region IV office.

From the 1976 Trend Analysis:

"During the early part of 1976, it became apparent to the Principal Inspector that the effectiveness of the licensee's QA/QC Program was in a state of degradation as a result of a domineering and overpowering control by the contractor's site construction management." (Emphasis added.)

In response to CASE's Third Set of Interrogatories and Requests to Produce to NRC Staff (see 5/7/82 NRC Staff Additional Answers to CASE's Third Set of Interrogatories on Contention 5), Questions 4.g.(1) and (2), the Staff stated:

"It was the inspector's observation that the Brown & Root construction management, from the foremen up through the site manager, were demonstrating oppressing/domineering, and intimidatating attitudes toward, both the Tugco QA and B&R QA/QC staff personnel. At the time, there appeared to be no response, or attempt to correct this unpleasant atmosphere by either Tugco or B&R corporate management; thus, the inspector's comment that 'The licensee's QA/QC program was in a state of degradation.'" (Emphasis added.)

The Staff's answers to CASE's Question 1 of our Third Set indicated that the above statement had been made by R. G. Stewart, NRC Staff.

Mr. Stewart goes on to say:

"On June 11, 1976, at the request of the Region IV staff, the President of TUGCO/TUSI, two Senior Vice Presidents and the QA Manager met in conference at the NRC regional office in order to alert top management of the seriousness of the apparent breakdown in corporate management."

From the 1979 Trend Analysis, which we were told was done by R. G. Taylor (Staff's answer to Question 1 of our Third Set to Staff):

"Effectiveness of QA/QC Program

"This item seems to need addressing in two parts to be effective:

"Part one is the overall theory of Quality Assurance as a management tool. In this area, I believe that the licensee has been led down a poor path by Brown & Root during past years. It appears to me that Brown & Root has, in many instances, provided construction procedures to fulfill Appendix B that provide a minimum amount of direction to the construction force and yet comply to the words, if not the spirit of Appendix B. This is not too bad if the construction force is really a competent group but leads to some pretty bad things if that is not the case. What I have begun to see, but have difficulty proving, is that the Brown & Root construction philosophy is to build something any way they want to and then put it up to the engineer to document and approve the as-built condition. If the engineer refuses, he is blamed for being too conservative and not responsive to the client's needs. Thus the driving force behind my request for a special engineering audit of site operations.

"The second part of the addressment is to that phase called QC. Only recently has there been a real effort on the part of the licensee itself, or on the part of Brown & Root, to write explicit instruction to the line

inspectors on what they were to inspect. Previously, the procedures were frequently pretty general, again not too bad if the inspectors are knowledgeable in the subject being inspected but terrible if they are not. In a couple of cases, I have been able to show them that their people are essentially incompetent even though they had been through the site training and had been certified as competent. I see a desire on the part of the licensee to turn this situation around in the important areas of electrical and piping installation. However, the situation discussed above has a bearing since too often an installation clearly accomplished other than as originally designed and buildable has been approved by the licensee's on-site engineering arm as fulfilling requirements. In effect, the engineer has approved a nonconforming installation in advance of QC being called. QC is then signing for the as-built condition and the underlying problem is not addressed." (Emphases added.)

"Any Other Trends Indicative of Poor Performance"

"I don't see any other problem not discussed above except possibly a future development in the public relations arena. It seems likely to me that the licensee will use his full powers to be less open with us in the area of identified construction deficiencies than he has in the past. I think he will take maximum advantage of part 50.55(e) and the guidance to go through the necessary formalities but avoid, if at all possible, having to report to us. It is, of course, premature to really get into this arena until we prove a case." (Emphasis added.)

The NRC Staff Trend Analyses for 1976, 1977, 1978 and 1979 are attached as CASE Exhibits 16, 17, 18, and 19, respectively.

In the set of documents provided CASE in response to our Question 18(c) of our Eighth Set (see CASE Exhibit 20), there were also documents which addressed this matter:

From July 30, 1975 letter from Antonio Vega to Brown & Root:

"This will document our discussions at the meeting held at the CPSES site with regard to the stop work directive on Category I Concrete Placement issued by TUSI field quality assurance on July 25, 1975...TUSI's statement of concerns was as follows:

"TUSI referenced memo No. TUQ-016 wherein we request B&R's aid in determining whether Audit No. 2 performed by Mr. B. C. Scott on April 30, 1975 had been responded to. In addition, it references TUSI surveillance reports wherein problems identified in the B&R audit were again evident. Although an immediate response was requested on these items, we have not received such as yet. In addition, problem areas identified during the placement of the containment number 1 mat were listed in memo No. TUQ-014. This list includes twelve items -- two of which have been identified by B&R QA, two of which were not observed by B&R QA, and eight of which were observed but not identified by B&R QA. We acknowledge B&R's position that some of the items observed, but not identified, have

essentially no effect on the quality of the pour. It is our position that problems of this nature must be identified by quality assurance and that it is up to appropriate engineering personnel to determine the effect of deficiencies and nonconformances on the activity. It is also our position that B&R quality assurance at the site has been too lenient in not identifying problems because of a difference of opinion with this philosophy. Consequently, TUSI site quality assurance has had to identify and bring up for resolution numerous problems which we feel B&R quality assurance should have taken the initiative in identifying. TUSI expressed the belief that the problems identified in the two mentioned memos are symptomatic of a more basic problem. We feel these problems indicate a lack of effectiveness of the Hunt QA system and a lack of effectiveness on the part of B&R quality assurance to bring about timely identification and resolution of these problems. TUSI stated that it was with this in mind that the stop work directive had been issued. It is our position that before work can be resumed B&R will provide the necessary evidence to verify that the B&R audit of April 30, 1975 has been responded to. In addition, B&R will address the referenced surveillance reports performed by TUSI on the Hunt lab operation and will address the items identified during the course of the containment mat pour. We further understand that where B&R disagrees with the substance of the deficiency they will so state. Where they agree with the substance of the deficiency, they will provide TUSI with the measures they have taken to prevent recurrence on subsequent pours."

The documents attached as CASE Exhibit 20 are all the documents Applicants supplied to CASE in response to our Question 18(c) of our Eighth Set. It is therefore not precisely clear what the references/^{mean} regarding stop work directive, the problem areas identified during the placement of the containment number 1 mat listed in memo No. TUQ-014, or Brown & Root's response to Applicants' July 30, 1975 letter. However, it is clear that Applicants were well aware of the problems with the Brown & Root QA/QC program at Comanche Peak, as well as the problems with the Hunt QA system. It appears that Brown & Root resolved the problems to the satisfaction of the Applicants.

The next item in the packet supplied by Applicants was a 5/14/76 conference memorandum from P. M. Milam, Jr., regarding "B&R QC Performance." (CASE Exhibit 20.)

"We are recognizing that hard work and since effort has been present during the past 18 months of the B&R QC effort, but not until recently has this begun to pay off...Jim (Hawkins) recognized the extremely difficult job

the QC inspectors had due to the apparent unfamiliarity of construction workers with the rigorous requirements applicable to this Project. Hopefully, a continued effort on the part of the B&R QC Division will eventually result in a recognizable turnaround in the construction effort. ...We do realize that much of our QA function, both TUSI and B&R, is one of education. This is our most effective preventative action. Because of this, we do find ourselves going out on the limb. These instances should not be viewed by the QC inspector as a sign of weakness in our attitude or in the QC Program. We are all learning as we go. The Designer is showing some sign of recognizing that the 'Nothing can be done so poorly by Construction that it cannot be accepted on a 'use-as-is' basis' syndrome has some undesirable ongoing effects.

"The meeting was concluded with our compliments on evidence that B&R QC is getting their act together. We have been encouraged and this meeting was called so that we might encourage them." (Emphases added.)

It is very disturbing to know that, although Applicants were aware of the severe problems with the QA/QC program of Brown & Root at Comanche Peak, it took over two years for Brown & Root QC to get their act together. It is even more disturbing that Applicants allowed over two years to go by before seeing that action was taken in response to the citations received as set forth in I&E Reports 73-02 and 74-02 (see CASE Exhibit 2, pages 1 through 5). As demonstrated on pages 5 through 11 of this pleading, neither Applicants or Brown & Root have their act together yet.

The October 27, 1976 letter from D. N. Chapman, TUGCO, to P. J. Karnoski, Brown & Root, details further problems between Applicants and Brown & Root regarding Brown & Root's handling of the stop work order at Bostrom-Bergen, based upon the supplier's failure to resolve longstanding deficiencies which indicated an ineffective QA program. Applicants stated (See CASE Exhibit 20):

"We agreed with that decision (the stop work order). We could not agree, however, with your recommendation only one week after stopping work to allow a resumption of activities in the absence of documented evidence that the supplier had issued and implemented the revised and approved Quality Assurance Program. In general, the B&R recommendation was inconsistent with sound QA principles. In particular, it was not supported by objective evidence that this vendor had resolved the deficiencies which had brought about the work stoppage.

"Your letter...notified Bostrom-Bergen that the decision not to lift the stop-work order was made by the TUGCO QA Manager and not by Brown & Root QA. This approach serves notice to the vendor that you are enforcing QA requirements only because we insist.

"Although TUGCO has ultimate responsibility for the overall quality of the Comanche Peak Steam Electric Station, Brown & Root has the primary responsibility for assuring the quality of work performed by its contractors. In discharging our responsibility, we intend to see that Brown & Root QA does make all those decisions necessary to insure that vendors meet quality related prerequisites and continuing commitments on a timely basis."

Attached to the October 27, 1976 letter from TUGCO to Brown & Root is a "chronology of events relative to (Bostrom-Bergen Metal Products), Surveillance and Audit Activities, September 1975 - October 1976 which sets forth the many problems regarding the company's QA/QC program, including "deficiencies which indicate in the words of the inspector, 'a poor attitude towards Quality Assurance requirements.'"

As in the previously-referenced instance, it is not precisely clear what transpired between the October 27, 1976 letter and the next item supplied to CASE (the February 7, 1977, letter from D. N. Chapman, TUGCO, to P. L. Bussolini, Brown & Root). In the February 7 letter and its attachment, the following are discussed: steps taken to avoid placing concrete against unbonded expanded metal at construction joints (apparently Containment Mat Construction Joints); constructing the expanded metal construction joint bulkheads in a more secure and stable manner by using extra support material in order to prevent void gaps; determination by QC of the amount and control of the blasting required to clean the construction joints in order not to over-blast the construction which may deteriorate the bond. It is not clear what transpired between the February 7, 1977 letter and the next item in the packet, the July 29, 1977 letter from D. N. Chapman, TUGCO, to Brown & Root, which states, in part:

"To confirm our verbal directive issued during the exit critique of TUGCO QA Audit TBR-8 on July 27, 1977, the following restraint is hereby applied to B&R Vendor Surveillance activities, and it shall remain in effect until you receive written notification to the contrary:

1. Effective immediately, no final release inspections (with exceptions listed below) will be performed by B&R unless they are directly supervised by TUGCO QA personnel. Additionally, all final release inspections affected by this directive shall be witnessed by B&R's Vendor Surveillance Manager or a Senior Inspector approved by TUGCO QA.

2. No waivers of final release inspections affected by this directive shall be allowed unless approved by TUGCO QA.
3. To correct a major finding during our audit, we are requiring the recall of the B&R resident inspector at Bostrom Bergen, effective August 8, 1977, until such time that an inspector whose qualifications are in compliance with the Brown & Root requirements for that job can be reassigned.
4. Excluded from this directive are vendor surveillance activities, including final release inspections, related to the following items:
 - A. Reinforcing steel
 - B. Weld rod
 - C. Cadwelding material
 - D. Containment liner (CB&I)
 - E. Paints
 - F. Other categories specifically approved by TUGCO QA

"We will evaluate the effectiveness of this action to determine if it results in the necessary level of confidence that future B&R releases from vendors' facilities will be found acceptable when received at the site." (Emphases added.)

The next item in the packet was the January 3, 1978 letter from R. J. Gary, TUGCO, to J. G. Munisteri, Brown & Root, stating in part:

"This confirms and formalizes our decision to effect a change in management of Quality Assurance/Quality Control activities for the CPSES project. Effective immediately, TUGCO will provide overall technical management of QA/QC functions for CPSES except for those activities under the jurisdiction of the ASME Code, Section III, Division 1. Brown and Root will retain the responsibility for technical management of the ASME Code work as well as provide services such as training (as requested) and personnel administration for CPSES activities." (Emphases added.)

"The attached organization chart discussed among Messrs. Chapman, Tolson, Biggs, Gamon, and Paperno on December 28, 1977 has been incorporated into the TUGCO/TUSI QA Program and the CPSES QA Plan effective January 3, 1978."

There is attached to the letter a chart as indicated above.

Here again, there is no indication from the information with which we were supplied as to what transpired between the July 29, 1977 letter and the January 3, 1978 letter. There follows a telegram of January 7, 1978 from R. J. Gary to J. G. Munisteri:

"Request acknowledgement by 10:00 a.m. Monday, January 9, 1978, that you will issue letter of deviation to Brown & Root Quality Assurance Program referenced in my letter to you dated January 3, 1978.

"Your acknowledgement shall state that this deviation letter will be telecopied to me in draft form no later than 5:00 p.m. Monday, January 9. Your acknowledgement shall further state that final copy of deviation letter shall be dated and shall be effective no later than Tuesday, January 10. If I receive no such acknowledgement by 10:00 a.m. Monday, I will call Mr. Feehan and instruct him to issue the necessary deviation letter."

The next item is the January 10, 1978 letter from J. G. Munisteri, Brown and Root, Houston, to R. J. Gary, TUGCO:

"Brown & Root has taken steps to initiate the change in management of the CPSES Quality Assurance/Quality Control program requested by you in the referenced letter...

"Section 17 of the PSAR describes the organizational interfaces and responsibilities of the TUGCO and Brown & Root organizations. This is the basis on which the construction permit was issued by the NRC. Brown & Root is concerned with the effects this change in management may have on the issuance of an operating license by the NRC. We recommend the NRC be notified of this change and written approval of the change be obtained to forestall possible problems in this area...

"We are presently investigating other effects this change in organizational structure may have upon the relative responsibilities of TUGCO and Brown & Root...we understand that TUGCO will also be responsible for any NRC findings regarding the implementation of the amended program..." (Emphases added.)

The next item in the packet was the January 10, 1978 letter from T. H. Gamon, Brown & Root, Houston, to D. N. Chapman, TUGCO, attaching a letter to key Brown & Root personnel relative to the planned QA program deviation authorization.

This is followed by the January 16, 1978 letter from T. H. Gamon to D. N. Chapman with a memorandum announcing the organization change and stating:

"We believe that making this change at this time is not in the best interest of the Project. We would have preferred to have kept Quality Assurance and Vendor Surveillance as separate functions. However we have made the change to comply with your direction." (Emphases added.)

There is then an interoffice memo from T. H. Gammon, B&R, advising of the change in site QA organization and stating:

"In addition, the Quality Assurance section and the Vendor Surveillance section have been combined into one section called 'Quality Assurance and Vendor Surveillance.' This section will be managed by B. C. Scott. The Quality Control section will remain under the management of J. P. Clarke.

"Your cooperation with Mr. Scott in his new position is requested."
(Emphasis added.)

Again, there is a gap in the information with which we were provided by Applicants. The next item we have is the March 20, 1978 letter from R. J. Gary, TUGCO, to J. G. Munisteri, Brown & Root, Houston, which states in part:

"We do, however, continue to experience difficulties in the area of ASME Code responsibilities. The major obstacle to improvement in this area is the current edition of the B&R QA manual governing ASME work. This manual is cumbersome, is entirely too detailed, and contains numerous commitments not related to the ASME Code or other Regulatory documents. The non-essential detail in the manual requires for its implementation an excessive manpower commitment, both in Houston and at the site.

"Attempts thus far to convince Brown & Root to remove pointless and costly commitments from the manual have failed. Consequently, we have made the decision to obtain our own ASME stamp authority. We are preparing our application to the ASME, and will soon begin development of our manual. We intend for this effort to be parallel with Brown & Root's obtaining their N-stamps for Comanche Peak. In this way we can provide ourselves the option of continuing under the B&R approach or of taking control of all ASME work using our manual, should we for any reason see the need to do so..." (Emphases added.)

The next item, the March 31, 1978 from Joseph G. Munisteri, B&R, to R. J. Gary, TUGCO, states in part:

"We are surprised at your desire to undertake and obtain an ASME 'N' and N.P.T. stamp for the fabrication and installation of code piping; however, we recognize that this will be necessary if you wish to fabricate and install nuclear power piping systems on nuclear plants and we would be pleased to help you in any way we can..."

The May 2, 1978 letter from D. N. Chapman to H. Paperno, B&R, was the next item in the packet, changing the individual to whom site civil QC functions related to concrete and reinforcing steel as well as soils inspection shall report to, and attaching a Revision Request No. 41/Deviation Request No. 63 which incorporated that change into the QA Plan.

The final item in the packet was a letter of September 26, 1978 from R. J. Gary to J. G. Munisteri, B&R, which states in part:

"In my letter to you dated March 20, 1978, I stated that we had made the decision to obtain our own N-stamp for ASME Code construction at CPSES. The reason for this decision was the inability to get Houston QA to make ASME manual changes which were in the best interest of the project.

"In the past few months, however, we have noted significant improvement in the overall management of ASME activities affecting Comanche Peak. We are pleased with the responsiveness of Herb Paperno and your Houston office in making the necessary improvements in Brown & Root's manual. At the job-site both Construction and QA/QC have done an outstanding job of implementing that manual. This was confirmed by last week's ASME survey team. Consequently, we have canceled our ASME survey which was scheduled for this November.

"I believe that we now have in place a strong framework for completing this project successfully under the present system." (Emphases added.)

Thus, even with the limited information CASE was supplied by Applicants in response to our request for documents, it can be seen that Applicants did not have firm control over Brown and Root's activities at Comanche Peak. And although Applicants apparently believe, as stated above, "both Construction and QA/QC have done an outstanding job of implementing (the) manual," a review of the I&E Reports during the time-frame to which Applicants refer indicates the following (see CASE Attachment 2, pages 55-61):

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Follow Pipe Fabrication Procedures

Potential 10 CFR 50.55(e) Item -- Unit 1 pressurizer potential damage

Unresolved Item -- Containment Steel Structures

Potential 10 CFR 50.55(e) Item -- Classification of Equipment Foundations

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Follow Piping Installation Procedures

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Follow Welding Procedures

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Follow Weld Monitoring Procedures

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Adequately Control and Tag Nonconforming Items

Infraction - Appendix B, 10 CFR 50, Criterion V -- Failure to Follow Concrete Testing Procedures

Unresolved Item -- Reactor Coolant Pressure Boundary Pipe Welding

All of the above occurred between 3/21/78 and 8/31/78.

Applicants' lack of control over Brown & Root is acknowledged by two NRC inspectors (see page 12, beginning second paragraph from bottom, through page 14 of this pleading).

And in the review done by Applicants' own consultant, it is stated:

"A definitive written policy with regard to TUGCO's responsibilities for the independent review, audit and surveillance of the ASME program, including interface control with Brown & Root, is lacking." (Emphasis in the original.)

"It is the author's opinion based on a review of audits related to ASME program activities and discussions with members of the QA staff that TUGCO QA may be acting in too restrained a manner with regard to the exercise of its authority, as the owner, over ASME related activities." (Emphasis added.)

See CASE Exhibit 21, "Final Report, Review of the Quality Assurance Program for the Design and Construction of the Comanche Peak Steam Electric Station," Prepared for the Texas Utilities Generating Company by F. B. Lobbin, Consulting Engineer, February 4, 1982, hereinafter referred to as the Lobbin Report.

In CASE's Eleventh Set of Interrogatories to Applicants and Requests to Produce, filed 5/7/82, we asked Applicants several questions about the Lobbin Report and Mr. Lobbin. Their answers, received 5/18/82 indicated the following:

Question: "96. Your answer to Question 102 of CASE's Ninth Set to Applicants indicated that you had no plans to call Mr. Lobbin as a witness.

(a) Who of Applicants' employees is most knowledgeable about the Lobbin Report and could answer questions on cross-examination regarding it? Give such person's name, title, and company affiliation."

Answer: "A. Vega, TUGCO, Supervisor, Quality Assurance Services"

Question: "96. (b) Provide Mr. Lobbin's mailing address and telephone number."

Answer: "6186 Campfire, Columbia, Maryland 21045, (301) 730-6633"

Question: "96. (c) It seems reasonable to us that if you spent the time, effort, and money to hire a consultant such as Mr. Lobbin to prepare a report such as the Lobbin Report which deals specifically with the subject of Contention 5, you would logically call him as a witness.

"Please explain the reason and rationale for not calling him as a witness in the upcoming hearings."

Answer: "As stated in Applicants' response to CASE's Ninth Set of Interrogatories, Mr. Lobbin was retained to evaluate the TUGCO QA Program.

The results of his evaluation are contained in his report, and we consider them to be self explanatory. We see no reason, therefore, to question Mr. Lobbin at this time."

CASE believes Applicants are underestimating the importance of Mr. Lobbin's report, however. We believe it is important for the Board to review it, and we are attaching a copy of it as CASE Exhibit 21. It contains such statements as:

"The level of experience within the TUGCO QA organization, in particular commercial nuclear plant design and construction QA experience, is low and is the prime contributing factor to other areas of concern identified during this evaluation."

"Staffing of the audit and surveillance functions should be increased."

"The number and scope of audits should be increased, especially audits of site engineering and construction activities. The author could find no direct evidence that quality program requirements are not being met in these areas. However, the lack of clear evidence, obtainable through audits, which indicates the program is effective and being fully implemented, erodes one's confidence that quality has and is being ensured."

"QA management has not defined clearly the objectives for the surveillance program resulting in a program which, in the author's opinion, is presently ineffective."

"A definitive written policy with regard to TUGCO's responsibilities for the independent review, audit and surveillance of the ASME program, including interface control with Brown & Root, is lacking. It is the author's opinion based on a review of audits related to ASME program activities and discussions with members of the QA staff that TUGCO QA may be acting in too restrained a manner with regard to the exercise of its authority, as the owner, over ASME related activities."

"The design and construction audit program is an area which, in the opinion of the author, requires considerable attention and improvement. Simply stated, the author believes that more audits of a broader range of quality related activities need to be planned and conducted. In addition, the focus of the audit program should be shifted somewhat from verifying compliance with procedures and instructions for the control of quality related activities to verifying that plant structures, systems and components have been designed and constructed in accordance with the design and quality assurance criteria and commitments established for the CPSES. This shift in focus is recommended in part to compensate for the relatively low level of audit activity over past years." (Emphases added.)

The Lobbin Report was not done in 1974, or in 1978. It was done in February, 1982. When you tell a utility that they should go back and find out whether or not their nuclear power plant has been built right eight years after construction

began on that plant, it is obvious that there has been a severe breakdown not only in Applicants' oversight of Brown & Root's construction activities but in their entire QA/QC program as well.

This also means that it would be virtually impossible for Applicants, Brown and Root, or the NRC Staff to prove that the Comanche Peak plant has been built, as required by NRC regulations:

"...in conformity with the construction permit and the application as amended, the provisions of the Act, and the rules and regulations of the Commission..."
10 CFR 50.57(a)(1)

or that:

"The facility will operate in conformity with the application as amended, the provisions of the Act, and the rules and regulations of the Commission; and

"There is reasonable assurance (i) that the activities authorized by the operating license can be conducted without endangering the health and safety of the public, and (ii) that such activities will be conducted in compliance with the regulations in this chapter; and

"The applicant is technically and financially qualified to engage in the activities authorized by the operating license in accordance with the regulations in this chapter."

10 CFR 50.57(a)(2, 3, and 4)

This is further emphasized by the fact that the American Society of Mechanical Engineers (ASME) allowed Brown & Root's certification and stamps to expire at Comanche Peak on January 8, 1982. The NRC Staff itself admitted that this was an unprecedented action on the part of ASME, stating that the Staff "is not aware of any comparable situations elsewhere." (See NRC Staff's 3/10/82 Answers to CASE's First and Second Sets of Interrogatories on Contention 5 and NRC Staff Motion for a Protective Order, answer to CASE's Question 1(g)(6), page 10). And even when the certification and stamps were reissued, it was with certain specific requirements, and ASME's 3/19/82 letter to Brown & Root stated that: "Acceptance and use of the enclosed Certificates is subject to an unannounced audit at your expense to be conducted through the life of the Certificates." (See CASE answers to

Applicants' statements regarding ASME matters, elsewhere in this pleading for further details.)

3. Applicants state:

"Interfaces among participating organizations in the QA program have been established for QA functions at Comanche Peak. Affidavit of David N. Chapman at 9."

Answers 1 and 2 preceding also apply to this statement.
See especially pages 12, 18 through 23.

Satisfaction of 10 CFR Part 50, Appendix B Criteria

4. Applicants state:

"The QA program at Comanche Peak establishes procedures and requirements to address each of the criteria set forth in 10 CFR Part 50, Appendix B. Affidavit of Antonio Vega at 2."

See answers to 1, 2 and 3 preceding. In addition, documents supplied to CASE by Applicants during discovery clearly show that Applicants have repeatedly violated the provisions of 10 CFR Part 50, Appendix B. This is demonstrated perhaps most graphically by the attached examples of monthly trending reports and 32 done by Applicants (see CASE Exhibit 31/attached), which include graphs of the nonconformances.

During discovery, CASE has received DDR logs which Applicants use for tracking purposes for Deficiency and Disposition Reports (DDR's), NCR logs of Nonconformance Reports (NCR's), and Deficiency Logs of DR's (Deficiency Reports). Each item on the logs represents a separate DDR, NCR, or DR.

Applicants have done trending about each of these, as indicated on the attached sample copies of the various logs. We have also included with each type of log

information as to what Applicants' trending means. See CASE Exhibit 33 attached. There had been 353 DR's issued from the time that system was begun 4/77 until it was discontinued 7/79. The trending of these reports is based specifically on the Criteria categories of 10 CFR Part 50 Appendix B, thus supporting CASE's contention directly.

It is obvious from the information contained in this pleading and its attachments that Comanche Peak has monumental problems in regard to its QA/QC program and the construction practices which have been employed during its construction. We are attaching just a few DDR's, NCR's, and DR's to avoid overburdening this pleading and making it more difficult for the Board to make a decision regarding CASE'S Contention 5 insofar as Applicants' Motion for Summary Disposition is concerned. (See CASE Exhibit 33 Attached.)

This is necessary since there are 353 items listed on the DR logs, 3504 on the Brown & Root NCR logs and DDR logs (predecessor to NCR logs), and 437 on the TUGCO NCR logs.

5. Applicants state:

"The CPSES QA program is described in the CPSES Quality Assurance Plan, attached to the Affidavit of Antonio Vega, and the Final Safety Analysis Report ("FSAR"), admitted as Applicants' Exhibit 3 in this proceeding. Affidavit of Antonio Vega at 2."

Answers to 1, 2, and 4 preceding also apply to this statement. In addition, the fact that a program is set down in writing does not mean that its procedures are followed in practice. CASE is prepared to show that Applicants have not practiced what they preached.

In addition to the preceding, it appears from the documents with which CASE has been supplied by Applicants in response to our interrogatories and requests for documents that we have discovered potentially significant new information. Unless there is additional information which Applicants have not supplied as requested, it appears that:

1. Applicants have not reported to the NRC the full extent of the damage to the Fuel Building foundation when overexcavation occurred.
2. Applicants did not report to the NRC a seven-foot (7') crack on 812' Base Mat Containment #1. "Brown & Root QC found a vertical crack that extended completely through the seven (7) foot thick mat near the center of its midspan across the cavity. The crack extended horizontally to the cavity liner along a line between 90⁰ and 270⁰ azimuth."

Damage to the Fuel Building Foundation:

CASE had been concerned about the QA/QC program in regards to the overexcavation which occurred when the foundations for Comanche Peak were being excavated. However, we had not really looked into the construction practices involved too closely until recently. We had thought that, since CFUR had a contention (Contention 7) about the overexcavation, CFUR would logically be able to follow through on the QA/QC portion under Contention 5. When CFUR withdrew February 23, 1982, CASE began to look more closely at the QA/QC program and the construction practices involved with the overexcavation.

As part of that discovery, we received certain documents from Applicants and slides of some of the overexcavations which had occurred. We had seen slides which CFUR had received on discovery on Contention 7, but we had always thought we were looking at the overexcavation of the containment buildings. However, we recently realized that what we were looking at was not only the overexcavation of the containment buildings, but also the overexcavation of the Fuel Building foundation.

This was puzzling to us, because it appeared that the Fuel Building foundation was the most severely damaged of all. We are attaching as CASE's Exhibit 22 documents supplied to us by Applicants in response to discovery requests regarding the over-excavation.

The first page of CASE's Exhibit 22 is the February 4, 1975 letter from Robert W. Caudle, Project Manager-Nuclear Plants, TUGCO, to Dr. D. F. Knuth, Director Nuclear Regulatory Commission, Office of Inspection and Enforcement, Washington, D. C. 20555, in which the NRC was advised of the initial overexcavation:

"In accordance with the requirements of 10CFR50.55(e)(1)(IV) and in the interest of conservatism, we are submitting the following description of a possible deficiency which was observed during the base mat excavation for Units 1 and 2 Reactor Buildings.

"On January 23, 1975 the structural excavation, to approximately elevation 793, for Unit No. 1 containment began. As the excavation and geologic mapping progressed it became apparent that there had been a noticeable amount of overbreak and/or fracturing of the rock, which was to have remained in place around the excavation perimeter.

"Following a meeting between representatives of Brown & Root, Inc., Mason-Johnston & Associates and Texas Utilities Generating Company, the blasting techniques which had been used on Unit No. 1 containment were modified. The initial blast for excavation to elevation 793 on Unit No. 2 was accomplished on 1/25/75. After the blasted material was removed, visual inspection revealed very little, if any, damage to the perimeter walls.

"A formal report outlining the construction procedures, investigative program utilized to determine the extent of the rock damage and analysis of the safety implications and corrective action required will be forwarded to you within the next 30 days..."

The second, third, and fourth pages of CASE's Exhibit 22 is a memorandum to Raymond C. Mason from Herbert C. Crowder, Field Geologist, Mason-Johnston & Associates, Inc., Field Office, CPSES, marked received Nov. (date unclear) 1975, Mason-Johnston & Associates. It states:

"The removal of fractured rock from around the perimeters of Containment Buildings #1 and #2 foundation excavations has been completed. The removal of damaged rock from the Fuel Building Foundation area is approximately 80% complete and is scheduled to be completed immediately after completion of the placement of Containment #1 foundation.

"As previously reported by others, horizontal fractures were discovered when

excavation of Containment #1 cavity was completed. Enclosed are copies of sketches made showing the maximum degree of overbreak in both units. The areas containing the most damage were removed as part of the Safeguard Building excavation. Photographs (1 & 2) were taken of both units prior to blasting of the Safeguard Building. Brown & Root's method of removal of this rock was as follows:

1. A narrow trench was sawn to a depth of approximately 30 inches, a distance of 10 feet from the perimeter of the Containment excavation. The rock between these limits was removed by using a large blackhoe. The exposed surfaces were then cleaned and inspected. Fractures were found to still exist.
2. A second trench was sawn a distance of 20 feet from the perimeter of the Containment and the rock removed as above. Inspection revealed no fractures remained in this section.
3. A third trench was then cut in the same location as step #1 above and the rock removed. Inspection revealed that all horizontal fractures had been removed.
4. The removed rock was replaced by dental concrete to an elevation of 805.5 feet. The horizontal fractures around Unit #2 Containment excavation were removed in the same manner as in Unit #1. Photos were taken with 35 mm camera showing the referenced areas after the rework, was complete (3).

"Vertical fractures were also found as a result of blastings. All of the fractures are tight and radiate out from the center of the Containment excavation with the exceptions of those described below which occurred when the Safeguard Buildings were blasted. There are two fractures in Unit #1. These fractures are on the south side near the N-S centerline. They are tangential to the excavation, trending to the east for an undetermined distance, and were open about 1/8 inch. Grout pipes were installed in the dental concrete backfill. Grout is to be placed after placement of Containment #1 foundation. There is one fracture in Unit #2. This fracture is on the north side and runs from the northeast corner of the Safeguard Building, curving around from an easterly trend to a southerly trend, intersecting the Containment excavation near the N-S centerline. This fracture is open 1/8 of an inch in the referenced corner and tight at the excavation intersection. A grout pipe is to be installed and grout placed after the placement of the Containment #2 foundation and the walls in the #2 Safeguard Building. These fractures have been mapped (4) and photographs (5) taken of the two fractures in Containment #1.

"Major fracturing also occurred in the Fuel Building foundation area when the Service Water Intake Pipe Tunnel was blasted. This rock is being removed and will be completed as stated above. Photographs (6) were taken and mapping (4 & 7) is basically complete at this time.

"Attached is a list of photo numbers as referenced in the above text."
(Emphases added.)

CASE Exhibit 22, page 4, is the attachment to Mr. Crowder's memorandum.

On it, item 6) lists "Photographs of fractures in Fuel Building foundation area.

Photo numbers K 153772 - 30 thru 36 incl. and Photo numbers K 153778 - 1 thru 8 incl." CASE obtained slides of those photographs from Applicants through discovery, and copies made from those slides are attached as CASE's Exhibit 22, pages 7 through 21.

As can be readily seen, there is nothing resembling those slides in the FSAR. In the FSAR (2.5.4.5 Excavations and Backfill and the Figures attached) it is stated "Figure 2.5.4-36 is the photo grid for photographs taken of the Unit 1 Containment and reactor excavation walls and Figure 2.5.4-37 (Sheet No. 1 thru 31) are the photographs depicted in Figure 2.5.4-36. All other facture maps and photographs are part of the permanent construction records which are available for review from Texas Utilities Services Inc." (Emphasis added.)

It was not until the last few days when we were comparing what had been said by Mr. Crowder with what TUGCO had told the NRC that we realized that the information contained in Mr. Crowder's November 1975 Memorandum was basically the same as what was sent to the NRC on December 12, 1975 (see Exhibit 22, pages 5 and 6) with one important exception: The next-to-last paragraph of Mr. Crowder's Memorandum had been omitted from the letter to the NRC (see Exhibit 22, pages 3 and 6) -- the paragraph which stated that there had been major fracturing in the Fuel Building foundation area when the Service Water Intake Pipe Tunnel was blasted.

This gives rise to the implication that Applicants may have withheld the fact that extreme damage was done to the Fuel Building foundation area in addition and apart from the damage done when overexcavation of the Containment Buildings occurred, and further, that such withholding was deliberate.

We will be submitting further information regarding this in the next few days, but wanted to make the Board aware right away of our findings.

Crack in Base Mat Containment #1:

One of the items obtained by CASE during discovery was Nonconformance Report (NCR) C650 and its revisions (see CASE Exhibits 23, 24, 25, 26, and 27 attached). As stated in the original NCR C650 and all its revisions with which CASE was provided:

"Vertical cracks were discovered on 812' Base Mat Containment #1 (Pour #101-2812-001 & 002) on 4-26-77. These cracks are located at approximately 270⁰ and 90⁰ extending horizontally to the cavity liner. These cracks were reported via 3 part memo to B&R Construction with a copy hand carried to TUGCO QA on 4-27-77."

"Concerning Containment #1 Pour 101-0812-001 and -002 at approximately 270⁰ and 90⁰ on the 8'2' mat there are vertical cracks. Also at the 90⁰ location the vertical crack extends horizontally to the cavity liner. Your evaluation of this problem will be appreciated and until this problem has been evaluated and solved there will be no continuation of concrete pours on the aforementioned mat." 5-17-77 memo from James D. Pace (spelling?) to Gary Mochel, Containment Engineer.

"Please see RFIC 1203 for engineering comments. Work may proceed." Response on 5-17-77 memo from James D. Pace to Gary Mochel; signed by J. R. Locklar.

"It has been observed that there exist (2) areas that contain cracks in the 812 mat, pour (101-2812-001). These areas are around the cavity at azimuth 90⁰ and 270⁰. Your review as to acceptability of these areas is required before continuing concrete in the cavity area. Shoring is still in place, and 28 day concrete strengths are acceptable. The exact locations will be pointed out at your request." 5-3-77 Request for Information or Clarification (RFIC) C-1203, from J. R. Locklar, B&R Civil Eng., to C. H. Gatchell/D. Fellingner. (Emphasis added.)

"The areas in question were visually inspected by the design engineer (R. E. McGrane) on 5-11-77. It was determined that subject discontinuities can be attributed to shrinkage due to the size of placement, the unique circular configuration, and the formwork on the interior circumferential face which precluded normal shrinkage. Construction in this area may proceed with the stipulation that these cracks are to be repaired at a future date." Answer on RFIC C-1203, from D. Fellingner, 5-17-77.

"As the forms and decking were removed from the 812' mat placement in Containment No. 1 (pour 101-2812-001 and 002), B&R QC found a vertical crack that extended completely through the seven (7) foot thick mat near the center of its midspan across the cavity. The crack extended horizontally to the cavity liner along a line between 90⁰ and 270⁰ azimuth. Since the job specifications do not address cracks relative to any acceptance criteria, QC generated a memo to B&R Construction identifying the situation and stating that QC would not allow any more concrete placements in this area until the design engineer had made an evaluation. A copy of this memo was hand-carried to Mr. R. G. Tolson, the TUSI Site QA Supervisor on 4/26/77.

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"The design engineer (Mr. R. E. McGrane) inspected the cracks on 5/11/77 attributing the cracks to shrinkage and stipulated that the cracks be repaired at a future date. Since a repair is to be made, an adequate procedure developed, etc., the nonconforming condition was formally documented via NCR #C-650, on 6/1/77. Attached is a copy of the subject memo and related correspondence between B&R and G&H." June 3, 1977 Interoffice Memo to File from Peter L. Bussolini, Project Quality Assurance Manager.

NCR C-650 contained 35-1195-CEI-17, September 6, 1977, Revision 0, "Special Engineering Instruction...to set forth specific work requirements for performance of the following construction task: Grouting Discontinuities (Shrinkage Cracks) in Unit 1 Containment Elevation 812 Mat (Pour No. 101-2812-001)."

The procedures included Veeing out the cracks approximately 1/2" deep, drilling 3/8" holes on 18" spacing or as required, drilling holes on the crack approximately 1/2 the depth of the slab, inserting 1/4" copper tubing in the 3/8" holes, sealing tubes in place, injecting grout liquid and hardener mixture into the cracks, and cutting off the tubes flush with the concrete surface, then sealing the cracks.

NCR C-650 had been closed out on 10/3/77, but this was marked through with a note: "Closed in error by early signoff."

See CASE Exhibit 23 attached.

NCR C-650R1, showing input date of 4/26/77, was "Revised to incorporate CEI-17, Rev. 2 in disposition." (See CASE Exhibit 24 attached.)

NCR C-650R1, showing input date of 6/19/78, was "Revised to incorporate CEI-17, Rev. 3 in disposition." (See CASE Exhibit 25 attached.)

NCR C-650R2, showing input date of 6/19/78, was "Revised to incorporate CEI-23, Rev. 0 in disposition." (See CASE Exhibit 26 attached.) This procedure was titled "Repairing Concrete Water Seepage Areas Below Grade" and was "prepared to set forth specific work requirements for performance of the following construction task: Repairing concrete water seepage leak areas on various walls in power block below grade." The issue date of this procedure was 11/3/78.

The attached Interoffice Memorandum of January 5, 1979 to J. T. Merritt, Jr., from R. E. Heim, Resident Engineer, Gibbs & Hill, Inc., had a handwritten note at the top: "HOT!" and stated "By copy of this letter we are advising Brown & Root that the repair disposition on the attached subject NRC (650, Revision 2) is acceptable. Repair of the cracks in accordance with Civil Engineering Instruction No. 35-1195-CEI-23, Revision 0 is acceptable."

NCR C-650R3, showing input date of 6/19/78 was finally signed off on 3/22/79, almost two years from the time the crack was first discovered. It stated: "Revised to change disposition." (See CASE Exhibit 27 attached.)

In CASE's 5/7/82 Eleventh Set of Interrogatories to Applicants and Requests to Produce, we asked Applicants questions regarding the crack; Applicants responded in their 5/17/82 Answers to CASE's Eleventh Set of Interrogatories (received by CASE 5/18/82):

Question: "106. With reference to NCR C-650, please provide the following information:

"(a) The June 3, 1977 Interoffice Memo from Peter L. Bussolini, Project Quality Assurance Manager, Brown & Root, states:

"'As the forms and decking were removed from the 812' mat placement in Containment No. 1, ...B&R QC found a vertical crack that extended completely through the seven (7) foot thick mat near the center of its midspan across the cavity.'

"Please provide the following information:

"(1) How long (horizontally) was the crack?

"(2) Provide a drawing of the crack area. Provide the original drawing for inspection and copying, if it is available. We will definitely want a copy of the drawing, preferably of the full-size original if possible. We will accept an authenticated copy.

"(b) Was this reported to the NRC?

"(c) If the answer to (b) is yes, please provide the following information..."

"(d) If the answer to (b) is no, please provide the following information:

"(1) Who (name, title, company affiliation) made the decision not to report it to the NRC?

"(2) What was the rationale for not reporting it to the NRC?

"(3) Do Applicants anticipate calling the person referenced in your answer to (1) above as a witness in the upcoming hearings?

"(4) If the answer to (3) above is no, please include the mailing address for such person.

"(e) Provide for inspection and copying all documents (in the broadest sense of the word, including internal memoranda, handwritten notes, concrete pour records, etc.) regarding this matter. If there are any slides or photographs, provide them also.

We will definitely want copies of all of these documents. We will accept authenticated copies."

Answer: "106. a. (1) The horizontal dimensions of the shrinkage cracks were not recorded. However, the nonconformance report cited by CASE, as well as the June 3, 1977, memo contained in the NCR, reflect these horizontal dimensions.

"(2) Applicants will provide this document for inspection and copying.

"b. No.

"c. Not applicable.

"d. (1) As evidenced on the subject NCR, Brown & Root QA did not consider the matter reportable under 10 CFR 50.55(e) (i.e. the 'No' block on Section 12 of the Nonconformance Report was checked). Mr. R. G. Tolson, TUGCO Site QA Supervisor, concurred with this conclusion and, therefore, no further regulatory action was required or taken.

"(2) Shrinkage cracks in concrete are not considered significant and do not meet criteria for reporting under 10 CFR 50.55(e).

"(3) No.

"(4) 2001 Bryan Tower, Dallas, TX 75201.

"e. All documents regarding this matter are contained and/or referenced in NCR-C-650, a copy of which has been provided to CASE. Documents which are referenced but not contained in the NCR will be provided for inspection and copying."

The document with which CASE was provided in response to 106.a.(2), a drawing of the crack area, was not a copy of the original drawing. As stated by Applicants' representative during discovery at the plant site, they had not made a drawing of the crack. They did provide a drawing on which someone at the plant site had just drawn in in red what that person's conception of the cracks were, but we were told not to hold them to it. We are attaching a copy of the applicable portion of the drawing for the benefit of the Board as CASE Exhibit 28.

We were also provided with the concrete pour package records for concrete pours 101-2812-001, 002 - Mat @ 812 & remainder of mat in center of cavity - Containment #1. See CASE Exhibit 29 attached, which is the document which was on top of the package and is stated to be "Concrete Pour Card." As shown on the Exhibit, there is a statement on this Concrete Pour Card which says: "This card issued to replace card under same number which was lost."

Also in the concrete pour package was a drawing showing the two concrete pours 101-2812-001 and 101-2812-002. A copy of this drawing is attached as CASE Exhibit 30 for the Board's benefit.

CASE is not certain at this time of the full implications of the information we have received regarding this matter. However, we would point out the following to the Board:

1. Nowhere in any of the documents which Applicants supplied to CASE is there any indication that the crack in question was not a vertical crack that extended completely through the seven (7) foot thick mat near the center of its midspan across the cavity.
2. Applicants had not planned for this type of crack, since it was stated that the job specifications do not address cracks relative to any acceptance criteria.
3. This was an unusual situation in that a copy of the memo was hand-carried to Mr. R. G. Tolson, the TUSI Site QA Supervisor on 4/26/77.
4. It is obvious from all the NCR's we have looked at in the past month or two that a drawing is made on just about every nut and bolt which is referenced in an NCR. It is passing strange that no drawing was made of this crack (or cracks).
5. It is most unusual that no other dimensions were indicated anywhere in the documents with which CASE was provided.
6. CASE was not provided with any type of study or analysis concerning this crack by Applicants.
7. The original concrete pour card for pours 101-2812-001 and -002 was lost and another card replaced it.
8. There has been an allegation before that there was general cracking of floor slab concrete in the plant buildings. (See details below.)
9. A seven-foot crack would not normally be considered a hairline surface crack or a shrinkage crack. (See details below.)
10. There is no indication in the NCR's on the crack to indicate that proper measures were taken to keep moisture from damaging the rebar during the nearly two-year period it took to repair the crack(s).
11. Applicants have never disputed that there was a 7' crack. If this information was incorrect, Applicants should have made this known to CASE either in their answer to our interrogatories and requests to produce or during discovery at the plant site. They did not.
12. Based on the documents with which CASE has been provided by Applicants, it is impossible to prove the horizontal extent of the crack, the width of the crack, that the crack was properly repaired, that the rebars were not damaged by moisture prior to sealing the crack, or that the QA/QC program was functioning properly with regard to this matter.

Details on items 8 and 9 above:

Inspection and Enforcement (I&E) Report 79-26/79-25, October 11-22, 1979, conducted by R. G. Taylor contained the following information:

"Special investigation of allegations by a former site construction worker of improprieties in the civil construction phase of this facility."

"Allegation 4 a: There is general cracking of floor slab concrete in the plant buildings."

"This allegation has no apparent merit. Hairline surface cracks in concrete are not considered to have any effect on structural integrity."

"Two unsupported general allegations were also made regarding general cracking of floor slab concrete in the plant buildings and omitted horizontal tie rebar in the Unit 1 Containment wall. Without specifics, the allogger was advised that these could not be pursued." (Emphasis added.)

"During the past fifteen months, the RRI has toured all of the safety-related plant areas several times each month. The RRI has not observed cracks in the floors of the buildings that he would consider significant in terms of possible structural failure; i.e., cracks which are open to such an extent that awl or pick can be inserted to a substantial depth in the crack. The RRI would expect fine hairline surface cracking to occur and normally not notice it. Such hairline cracks are an unavoidable occurrence in heavily reinforced concrete structures, particularly in walls or floors with a relatively thick cross-section. According to recognized technical literature such as the U. S. Department of the Interior's 'Concrete Manual,' the cracking is caused by differing amounts of thermal expansion between the interior of the member and its exterior created by the chemical reaction process referred to as hydration and commonly called curing. Such cracking is usually very tight and when investigated, extends only into the concrete to the most exterior layer of reinforcing steel, typically one to two inches below the surface. This type of cracking is not considered to have any effect on the integrity of the structure." (Emphases added.)

This entire matter has given rise to grave and substantial questions regarding Applicants' QA/QC program and the construction practices used at Comanche Peak. For example, Applicants apparently did no analysis of the possible interrelation between the overexcavations and the occurrence of these cracks. Applicants apparently did no analysis as to whether the engineering concern for corrosion of the rebar was adequately addressed. Applicants apparently did no analysis of possible structural, seismic, or other adverse effects caused by their failure to inject grout and hardener into the crack.

The apparent absence of any comprehensive documentation of the crack creates

a substantial obstacle to Applicants' ever answering the above concerns adequately.

We trust that the Board will take all possible steps to have this matter exhaustively investigated.

Disposition of NRC I&E Reports

6. Applicants state:

"All but two matters raised in I&E Reports as "unresolved items," or in Notices of Violation and Deviation which are cited by CASE as pertinent to Contention 5 have been resolved and that resolution verified by the NRC Staff. Affidavit of Susan L. Spence, at 4."

The NRC Staff's testimony filed 5/24/82 appears to confirm this statement.

In fact, the wording from the Staff's testimony on page 102 is strikingly similar:

"All but two matters raised in the Inspection Reports cited in support of Contention 5 as negative findings have been resolved and that resolution verified by the NRC Staff."

It is not clear, however, what the significance of this is. See GENERAL COMMENTS preceding. If the decision as to whether or not to grant Applicants an operating license for Comanche Peak rested on whether or not all I&E Reports had been resolved to the satisfaction of the NRC Staff, there would be no need for these proceedings or for this Atomic Safety and Licensing Board.

7. Applicants state:

"The resolution of those matters has been in subsequent I&E Reports or in SER Supplement No. 1, § 8.4.4, p. 8-1. Affidavit of Susan L. Spence at 5."

The NRC Staff's testimony filed 5/24/82 appears to contradict this statement on page 42, regarding I&E Report 79-11 and its follow-ups in 79-18 and 79-24:

"...however, because of the unique sonic technique used by the consultant engineer, the matter is being handled as an unresolved item pending further verification by the containment building structural integrity test."

. . . and on page 79, regarding I&E Report 81-15:

"There has as yet been no final follow-up relative to the finding in NRC Inspection Report 81-15 since the nature of the Applicants' corrective action will take a substantial amount of time and from a construction scheduling standpoint, is not of high priority. The final follow-up inspection of this item will take place at a future time deemed appropriate by Region IV."

In any event, it is not clear what the significance of Applicants' statement would have been, even if it had been substantiated by the NRC Staff's testimony. See GENERAL COMMENTS preceding.

8. Applicants state:

"The unresolved matters involve a failure to follow certain procedures for the inspection of coatings, and a concrete pour on Unit 1 dome. Affidavit of Susan L. Spencer at 5."

It appears from the NRC Staff's 5/24/82 testimony that this statement is correct, although (as with other statements preceding) it is not clear what the significance of this statement is. See GENERAL COMMENTS preceding.

9. Applicants state:

"The unresolved matters concerning the procedures for the inspection of coatings has been the subject of ongoing corrective actions by the Applicants and is subject to verification by the NRC Staff. Applicants have revised their procedures to assure that this type of problem does not recur. Affidavit of Susan L. Spencer at 12-13."

It would appear from the NRC Staff's 5/24/82 testimony that this statement is in agreement with Staff's testimony. However, the fact that Applicants have again changed their often-changed procedures does not reassure CASE. See answer 1 preceding. Furthermore, even if this statement is true, it is not clear what the significance of this statement is. See GENERAL COMMENTS preceding.

10. Applicants state:

"The unresolved matters concerning the concrete pour on the Unit 1 dome will be the subject of resolution following completion of standard Structural Integrity Test on both primary reactor containments of Units 1 and 2. Affidavit of Susan L. Spencer at 9-11. The only item raised by the NRC Staff concerning Quality Assurance with respect to this matter has been closed-out. Affidavit of Susan L. Spencer at 11."

It would appear from the NRC Staff's testimony that this statement is in agreement with Staff's testimony. However, as with many of Applicants' statements in their pleadings, it is not clear what the significance of this statement is in these proceedings. See GENERAL COMMENTS preceding.

11. Applicants state:

"Two other issues raised by CASE, involving honeycombing in the Unit 2 steam generator compartment and placement of the Unit 2 reactor vessel, have been resolved and the resolution verified by the NRC Staff. Affidavit of Susan L. Spencer at 5-9."

Same as answer to 10. preceding.

Brown & Root ASME Certificates of Authorization for Comanche Peak

12. Applicants state:

"Each matter raised by the ASME Survey Team at the October 12-14, 1981 survey of the Brown & Root ASME QA Program at Comanche Peak was addressed and corrective action taken by Brown & Root. Affidavit of R. J. Vurpillat at 2."

The Brown and Root ASME Certificate of Authorization for Comanche Peak expired on January 8, 1982. Based on a survey conducted by ASME personnel, ASME refused to reissue the certificate at that time.

Following a resurvey by ASME personnel in January, 1982, ASME did reissue the Certificate of Authorization on March 15, 1982.

Examining the entire record of this event reveals that even when a problem is anticipated at CPSES, a program to prevent the problem developed, and the

preventive actions taken, the problem still materializes in predictable form. In the case of ASME compliance, the central issue is Quality Assurance.

At least as early as December 29, 1980, Brown and Root anticipated problems in passing review with ASME. On that date, R. J. Vurpillat, Quality Assurance Manager, sent a check for \$2,000 to ASME as a deposit and requested a survey be made in May -- eight months prior to expiration of the certificate. CASE Exhibit 34. ASME's customary procedure is to conduct such resurveys eight to twelve weeks prior to expiration. CASE Exhibit 37, p. 3.

As Mr. Vurpillat explains in a later internal Brown and Root memorandum, the early survey "will provide us with the opportunity to resolve and correct any difficulties that may be encountered well in advance of certificate expiration." CASE Exhibit 35.

Of particular concern was the Quality Assurance Manual, which ASME would most assuredly review. A final revision of the QA Manual was nearly complete at the time of the internal memorandum. If Mr. Vurpillat had his preferences, the QA Manual would have been frozen as to changes in January of 1981. Instead, he gave instructions that revisions of lower level procedures creating a need to revise the QA Manual had to be reviewed and approved by QA and Project Management.

The final draft of the revised QA Manual came out in February 1981. This revision was to be presented to ASME for acceptance. CASE Exhibit 36.

Brown and Root accepted ASME's August scheduling of the survey rather than Brown and Root's desired May survey, so Brown and Root had ~~seven~~ seven months from the December letter (CASE Exhibit 37) in which to prepare for the survey. CASE Exhibit 37.

Prior to ASME's survey, Brown and Root began development of its own "dry run" survey to spot problems before ASME arrived. CASE Exhibit 35.

To conduct the pre-ASME survey, Brown and Root selected Mr. Marcus N. Bressler, P.E., apparently on the recommendation of Mr. J. P. Clarke, III, Senior Staff Engineer, Brown and Root. See CASE Exhibit 43.

The Comanche Peak "dry run" took place April 29 through May 1, 1981. Case

Exhibit 38. Mr. Clark opened the "dry run" by welcoming the Bressler team and then stating:

"Gentlemen, we requested your services in order that you could take an objective and critical look at our QA Manual, which has been extensively revised, and to evaluate the implementation of our QA program. We feel this is a crucial step before our upcoming August survey. What we expect is a 90% confidence level that both the manual, as supplemented by procedures, and the program implementation are adequate and will pass the ASME survey. We solicit your constructive criticism.

The QA Manual has been extensively revised to eliminate redundancy and make it a more manageable document. But before you react adversely to the extensive revision, please note that there is little difference in content between the proposed manual and the existing ASME-approved manual, copies of which have been prepared for your comparison." (emphases added)
CASE Exhibit 39, p. 1.

Before Mr. Bressler's team even began, Brown and Root specifically directed them away from major criticism of the QA Manual while supposedly seeking an objective and critical look at that Manual. At the same time, Brown and Root expected the team to make them ready to pass ASME review.

Before receiving Mr. Bressler's report, Brown and Root submitted the new QA Manual to Hartford Steam Boiler Inspection and Insurance for approval. CASE Exhibit 40.

Brown and Root decided to ask ASME to also certify Brown and Root as a Material Manufacturer and Material Supplier. CASE Exhibit 41.

Brown and Root hoped to sell their surplus material as ASME-qualified. CASE Exhibit 41.

Only two weeks before the ASME team was to arrive, Brown and Root finally received the Bressler report. CASE Exhibit 42-44.

Of the QA Manual which Brown and Root planned to submit to ASME, Bressler commented:

"It was a complete rewrite in its entirety which, in the process, had been nearly stripped of all controls and consisted merely of short, simple manual sections referencing detailed procedures which were clearly the strength of the program. ... Nearly every section of the manual required changes, some very extensive in nature." CASE Exhibit 44, p. 2

The Bressler team, in concurrence with the Inspection Specialist (ANIS) recommended several changes to the manual which resulted in revisions by Brown and Root. Id., p. 5

However, even after the changes were incorporated, Bressler comments:

"The manual as rewritten now appears to be a marginally acceptable document." Id.

"The team also expresses its concern that the manual, as written, barely meets the amount of detail generally desired by ASME survey teams with which it is acquainted." Id.

Having hired experts to help them pass the ASME survey, Brown and Root then tied the hands of the experts. The results were unsatisfactory for the consultants and eventually for Brown and Root.

As it turned out, the ASME team had to spend more time than expected at Brown and Root headquarters in Houston and the South Texas Project. The ASME visit to Comanche Peak scheduled for August was, therefore, cancelled. CASE Exhibit 45.

The ASME survey was rescheduled for October 12-14, 1981 giving Brown and Root almost ten months from the December letter noted above until ASME finally conducted their Comanche Peak survey. Brown and Root reiterated to ASME their desire to be certified as a Materials Supplier (MS). CASE Exhibit 46.

In preparation for the survey, ASME sent a questionnaire to Brown and Root and a detailed guide to what the ASME team would be looking for. CASE Exhibit 47.

Based on the ASME survey in August at Houston/STP, Brown and Root again revised the QA Manual but did not reissue the manual because further changes were expected after the ASME visit. CASE Exhibit 48

Apparently not realizing Brown and Root had already done so, CASE Exhibit 41, ASME requested an application for Material Supplier status. CASE Exhibit 49.

Brown and Root applied again in identical fashion. CASE Exhibit 50.

In answering the questionnaire from ASME, CASE Exhibit 45, Brown and Root repeated their determination to receive an MS (supplier) certification. CASE Exhibit 51, p. 1. Brown and Root also asserts the new Comanche Peak QA Manual documents "in detail" the "Q.A. Program in a manner suitable for use as a working document by all interested parties" Id., p. 3 (emphasis in original). Brown and Root also identifies two consultants hired to help establish the Q.A.

program, including Mr. Bressler. Id., p. 5.

The internal ASME survey was conducted on 10/12-14/81 at Comanche Peak. Brown and Root informed ASME on 10/16/81 that they would be ready for resurvey after 10/23/81. At the same time they also removed their request for Material Manufacturer and Material Supplier authorizations and added core support structures and penetration assemblies to the list covered under NA and NPT certificates. CASE Exhibit 52.

A Brown and Root team headed by Gordon Purdy was assigned to "investigate and resolve" ASME Survey Team concerns and those of the Westinghouse team. CASE Exhibit 53.

ASME recommended that a resurvey was required on 11/23/81 and along with this recommendation submitted a written report of the Survey to Brown and Root stating, "The deficiencies noted in your program include, but are not limited to, the following items which require corrective action" CASE Exhibit 54, p.1. ASME survey results were documented in terms of the QA Manual and Implementation. ASME found the failures in the Brown and Root QA Manual to be quite similar to those Mr. Bressler had forewarned Brown and Root about. See Exhibit 54. The resurvey was to include a review of the entire program and its implementation. Id., p. 3.

An ASME letter to Brown and Root on 11/25/81 noted ASME's decision to allow the ASME certificates to expire on 1/8/82 and that "new Certificates will only be issued after evaluation of a successful resurvey report." CASE Exhibit 56.

Mr. Vurpillat sent an appeal of that decision to ASME. CASE Exhibit 57.

Vurpillat's memorandum to the file of 12/7/81 indicated that Brown and Root did not disagree with ASME survey findings, but, rather, their significance. CASE Exhibit 58.

On the same day that ASME invited Brown and Root to an appearance before the Subcommittee on Nuclear Accreditation to present information for reconsideration of the ASME decision, Brown and Root withdrew their request for an appeal. CASE Exhibits 59 and 60.

In preparation for the ASME resurvey, twenty-one (21) new sections in the Quality Assurance Manual were submitted to Hartford Steam Boiler for review and acceptance on 12/23/81 and accepted on 12/28/81. CASE Exhibit 61. These revisions constituted a change or addition to each written section of the Manual.

Brown and Root requested and received concurrence from Hartford to continue ASME code activities, except for those involving final code stamping and the certification of Code Data Reports after stamp expiration on 1/8/82. CASE Exhibit 62.

Brown and Root returned the Code Symbol Stamps to ASME on 1/7/82. Case Exhibit 63.

In answering ASME's presurvey questionnaire, Brown and Root modified the code items which it desired to install. As compared with an identical questionnaire answered for the 10/81 survey, CASE Exhibit 51, Brown and Root deleted the following code items: "class MC penetration assemblies and all classes of miscellaneous items as defined in NA-1220." CASE Exhibit 64, p. 1. Also, Brown and Root drops their request to be certified as an MS. Id.

By now, Mr. Hawkins is no longer Site QA Manager having been replaced by Mr. Purdy. Mr. Purdy was responsible for the submittal of this questionnaire when previously Mr Clark had done so. CASE Exhibit 51, p. 5. Mr. Hawkins was also replaced as the person responsible for Quality Control and Nondestructive examination. CASE Exhibit, p. 4. Jim Ragan is now responsible for these areas. CASE Exhibit 64, p. 4.

Brown and Root states that "this revision of the Manual was presented to and accepted by our AIA. CASE Exhibit 64, p. 3; See also CASE Exhibit 61. Note that in the 10/6/81 questionnaire Brown and Root asserted that the earlier revision also "was presented to and approved by our AIA." CASE Exhibit 51, p. 3. Apparently, the AIA functions in a pro forma manner giving no confidence that what they approve is indeed acceptable.

The second set of answers to this questionnaire does not indicate any consultants hired to assist in the development of the QA program. CASE Exhibit 64, p. 5.

Brown and Root engaged in intensive review and training of personnel on the QA Manual, procedures, and implementation in the four (4) days prior to the 1/18/82 ASME resurvey. CASE Exhibit 65.

A resurvey of Brown and Root's QA Manual and Implementation was conducted on 1/18-20/82. Brown and Root presented a revised QA Manual highlighting the changes since ASME's first survey. CASE Exhibit 66.

A Brown and Root internal memorandum from Mr. Vurpillat summarized the comments and recommendations generated by this survey which found still more problems with the Brown and Root ASME program. CASE Exhibit 68. As noted on page 3, the Survey Team leader intended to recommend that Brown and Root's certification be issued again. However, that recommendation would be contingent upon corrective actions, verification, and approval of items 1(a), 1(b), and 1(c), all of which deal with control of purchased materials, parts, and components. Id., p. 1, attachments a, b, and c.

The implementation of corrective actions required by the above-referenced three findings was verified by Hartford Steam Boiler as being complete on 2/4/82. CASE Exhibit 69, p. 1.

As evidenced by CASE exhibits 70-78, each of the three findings were investigated and inspection verified by 2/4/82. However, none of the non-conformance reports generated by these findings were closed out until after this date. Of particular importance is NCR M-3152. CASE Exhibit 73. This report was in reference to ASME's first finding that AFCO steel procured material supplied by Levinson Steel, a non-ASME approved material supplier. NCR M-3152 was not verified and closed out until 4/15/82 - one month after the ASME certificates were reissued.

Exhibits 70-78 indicate that corrective actions were taken to resolve the three

findings of the January 1981 ASME resurvey. Satisfaction of the ASME technical requirements in these three instances does not satisfy serious concerns that work performed prior to or since their resolution meet ASME Code Standards. Brown and Root experience in the control of purchased items and services and the identification and control of materials and items has been a history of violations and deficiencies. See CASE Exhibit 2.

In April 1981, Marcus Bressler and his survey team found it necessary to completely rewrite Paragraph 8.4 - "Control of Purchase Items and Services" and Paragraph 9.4 - "Identification and Control of Items" in the Quality Assurance Manual. CASE Exhibit 75, p. 3. Despite this rewrite, the October 1981 ASME survey noted deficiencies in both the Control of Purchased Materials, Items and Services as well as Identification and Control of Material and Items. CASE Exhibit 54, p. 2, c(1),(2) and p. 3 (f).

The repeated reoccurrence of such deficiencies raises fundamental questions about whether the program for Quality Assurance was ever a "working" program in which the NRC or anyone else could have any confidence.

The ASME Certificates of Authorization were approved and reissued on 3/15/82. However, ASME's 3/19/82 letter to Brown and Root states that: "Acceptance and use of the enclosed Certificates is subject to an unannounced audit at your expense to be conducted through the life of the Certificate." CASE Exhibit 79. The conditional nature of the certificate issuance was based on Items D and F in a Brown and Root corrective action report date 1/4/82 addressed to the findings of the 10/12-14/81 ASME survey. CASE Exhibit 67. This report was transmitted to ASME during the 1/18-20/82 resurvey. CASE Exhibit 79. Both items D and F are "in programmatic control, but additional time is needed for complete resolution" CASE Exhibit 79. Item F again falls into the familiar deficiencies in the Identification and Control of Material and Items.

Almost one year after the Bressler team pointed to problems in the QA program

and manual regarding the control and identification of vendor-supplied material and items, Brown and Root is still inadequately documenting receipt of materials and is engaged in the unauthorized modification of parts. CASE Exhibit 67.

Item D, a deficiency under "Control of Construction Processes" refers to process sheets which had not been reviewed by the ANI for establishment of hold points. Item D stands as an issue in need of further resolution. As seen in CASE Exhibit 67, p. 2, Item B; p. 6, Item D; and p. 11, Item D, established hold points have been bypassed repeatedly. As noted in other CASE responses and in details of various Investigation and Enforcement Reports, the corrective action taken in many instances is to simply change the QA Manual. This was also the case in the resolution of deficiency B noted in the 10/81 ASME survey. CASE Exhibit 67, p. 2.

The need for further resolution of Item D, CASE Exhibit 79, clearly proves that each matter raised by the ASME survey team has not been adequately addressed nor has recurrence been effectively prevented. Furthermore, an examination of the Brown and Root NCR Log for the period 3/6/81 through 4/16/82 reveals that thirty NCR's have been issued which refer specifically to bypassed QC hold points. This log does not differentiate ANI hold points from other hold points, but the problem of not obeying signals not to proceed is the same in all such instances.

As early as July 1978, it was noted in a Corrective Action Request that "Repetitive violations of B&R QC hold points and ANI hold points during pipe fit-up and welding procedures ... have not been reported." CASE Exhibit 80. Also see CASE Exhibit 81 (which is still open).

Deficiencies and other concerns raised by the ASME Survey Team in 10/81 and 1/82 have still not been adequately resolved as show above. It is also obvious that past measures taken to correct and prevent recurrence of such deficiencies have been ineffective. This is clearly illustrated by the above referenced items D and F which ASME has yet to consider resolved.

It must be pointed out that the ASME surveys are merely "spot checks" and result in specific findings that happened to be detected during a particular survey period.

Even if all issues discovered by ASME teams were corrected and resolved, it is impossible to determine how many other unacceptable materials have been used, inspector hold points passed, unauthorized vendors purchased from, etc. As the 11/23/81 ASME letter to Brown and Root so explicitly points out: "The deficiencies noted in your program include, but are not limited to, the following items which require corrective action...." CASE Exhibit 54. Given the miserable history of compliance by Brown and Root, CASE is entitled to the inference that there exist numerous undetected and/or unreported instances of failures in these categories.

A 10/26/81 Brown and Root interoffice memorandum refers to findings of the "Westinghouse team." CASE Exhibit 53. Yet there is no further reference to what the outcome of the investigation was. CASE received from Applicants a document with a hand written heading "Survey Findings." CASE Exhibit 55. These findings are clearly distinct from the ASME findings and represent a whole new area of violations and deficiencies. CASE assumes these are the Westinghouse findings. Regardless of whose survey findings these are, there is no documentation as to whether or not these findings were addressed and corrective actions taken.

As recent as March 8, 1982, just one week before ASME reissued the Certificate of Authorization, I & E Report 82-01 referred to inconsistencies in instrumentation installation activities that had the "effect of deleting the ASME 3rd party inspection and certification by the A.N.I." CASE Exhibit 11, p. 6. Also included in this I & E report was a review by the SRIC of the Brown and Root ASME QA Manual which was revised in preparation for the 1/18-20/82 resurvey. Of the revised manual, the I & E report states:

"The increased detail in the primary manual has the long term effect of making it more difficult for B&R to make program changes without the prior knowledge and concurrence of the Authorized Inspection Agency, as was the case prior to recertification survey." CASE Exhibit 11, p. 7.

One is hardly able to display confidence in the procedures which were implemented under a manual which was undergoing constant unauthorized revision and which were not being inspected by the authorized third party.

13. Applicants state:

"Brown & Root has taken measures to assure that matters identified by the ASME Survey Team will not recur. Affidavit of R. J. Vurpillat at 2."

See answer to #12.

14. Applicants state:

"Brown & Root has taken corrective actions in response to the findings of the ASME Survey Team at the January 18-20, 1982 resurvey and the Authorized Nuclear Inspector has verified completion of these items. Affidavit of R. J. Vurpillat at 17."

See answer to # 12.

15. Applicants state:

"The Brown & Root ASME Certificates of Authorization for Comanche Peak were reissued on March 15, 1982. Affidavit of R. J. Vurpillat at 20."

See answer to #12.

16. Applicants state:

"Each of the actions taken by Brown & Root in response to the ASME Survey Team findings at both the October 12-14, 1981 survey and the January 18-20, 1982 resurvey resolved those findings satisfactorily. Affidavit of Roger F. Reedy at 28."

See answer to #12.

17. Applicants state:

"Brown and Root has demonstrated to the proper authorities (ASME and the Authorized Inspection Agency) implementation of an appropriate QA program for ASME Code work up to the present time. Affidavit of Roger F. Reedy at 28."

As demonstrated in the answer to number 12, this observation is far from accurate. Brown and Root has perhaps demonstrated to ASME that it can correct things ASME finds it to be doing wrong, but that is hardly the same as properly implementing a QA program. The Authorized Inspection Agency either has a poor understanding of what ASME codes require or serves as an official rubber stamp for QA programs. ASME acceptance of corrective work and AIA acceptance of Brown and Root's acts do not give any basis for concluding that Brown and Root has properly implemented a Quality Assurance program at Comanche Peak.

The Applicants need to convince this Board in this proceeding that there has been a Quality Assurance program of acceptable dimensions and that such a program has been implemented.

Thus, CASE has responded to each of the seventeen (17) items alleged in Applicants' May 11, 1982 pleading to be statements of material facts as to which there is no genuine issue to be heard. As discussed in our answers, CASE refutes some of Applicants' statements with documented evidence obtained from Applicants themselves in response to CASE's interrogatories and requests to produce; some of Applicants' statements are questionable; and most of Applicants' statements are simply not material to CASE's Contention 5 or to a decision in these proceedings.

As discussed herein, the resolution of the question as to whether or not the Applicants should be granted an operating license does not rest with the NRC Staff, ASME, or the Authorized Inspection Agency. That decision rests with the Atomic Safety and Licensing Board in these proceedings. It should be based on a true and full disclosure of facts -- facts which will only be brought out if CASE is allowed to proceed on its Contention 5 and Applicants' Motion for Summary Disposition is denied.

Respectfully submitted,

Juanita Ellis

(Mrs.) Juanita Ellis, President
CASE (Citizens Association for Sound Energy)
1426 S. Polk
Dallas, Texas 75224
214/946-9446

6/2/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION :

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

APPLICATION OF TEXAS UTILITIES
GENERATING COMPANY, ET AL. FOR
AN OPERATING LICENSE FOR
COMANCHE PEAK STEAM ELECTRIC
STATION UNITS #1 AND #2
(CPSSES)

Docket Nos. 50-445
and 50-446

WST

AFFIDAVIT OF JUANITA ELLIS
REGARDING CASE'S RESPONSE TO
APPLICANTS' MOTION FOR SUMMARY
DISPOSITION OF CASE'S CONTENTION 5

I, Juanita Ellis, being first duly sworn, do depose and state that:

1. I am the President of CASE (Citizens Association for Sound Energy), Intervenor in the above-referenced proceedings.
2. That CASE has engaged in discovery as a part of subject proceedings, and that I personally have received as part of discovery all documents as so stated herein.
3. That I have reviewed all documents as stated herein and that the statements made herein concerning said documents are true and correct to the best of my knowledge and belief.
4. I have been duly authorized by CASE's Board of Directors to act on behalf of CASE's membership in these proceedings, and in signing this affidavit I am so acting.
5. That I have personally reviewed all of the statements made and attached to this, CASE's Response to Applicants' Motion for Summary Disposition of CASE's Contention 5 and that such statements are true and correct to the best of my knowledge and belief.

Juanita Ellis
(Mrs.) Juanita Ellis, President
CASE (Citizens Association for Sound Energy)
1426 S. Polk
Dallas, Texas 75224
214/946-9446

Sworn to before me this 2nd day of June 1982.

Louis H. Marco
Notary Public, State of Texas
My Commission Expires 12/31/84

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of

APPLICATION OF TEXAS UTILITIES
GENERATING COMPANY, ET AL. FOR AN
OPERATING LICENSE FOR COMANCHE
PEAK STEAM ELECTRIC STATION
UNITS #1 AND #2 (CPSES)

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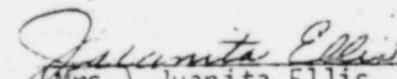
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Docket Nos. 50-445
and 50-446

CERTIFICATE OF SERVICE

By my signature below, I hereby certify that true and correct copies of CASE's Response to Applicants' Motion for Summary Disposition of CASE's Contention 5 and Attachments

have been sent to the names listed below this 2nd day of June, 1982, by:
Fed. Express ~~xxxx~~ where indicated by * and First Class Mail elsewhere.

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(Mrs.) Juanita Ellis, President
CASE (Citizens Association for Sound Energy)