

10/18/82

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

'82 OCT 22 AIO:39

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. INGS 50-6745
and BRNCH 446
OF SECRETARY
SERVICE

CASE'S RESPONSE TO
BOARD'S DIRECTIVE
REGARDING CASE EXHIBITS

Pursuant to the Board's directive to focus CASE's exhibits, to eliminate repetitiveness, and to attempt to get a manageable group of relevant documents into the record which will be of assistance to the Board as a decision-making body (tr. 3010, etc.), CASE (Citizens Association for Sound Energy), Intervenor herein, hereby files this, its Response to the Board's Directive Regarding CASE Exhibits. This Response was to be filed a week following the filing of responses to the Board's Memorandum and Order of September 22, 1982, briefs concerning necessary documents and information which the Board needs in order to close the evidentiary record (tr. 5773).

BACKGROUND

As previously indicated, initially our case was to have been based on cross-examination and on documents, primarily the NRC Staff's own documents (which we initially were told by Staff would not be introduced by them) and the Applicants' own documents which we obtained on discovery. The documents which CASE proposed to introduce into evidence were only a sampling, pared down from some 30,000 pages or so of documents CASE received on discovery in the 45-day period before the June hearings, to represent certain specific problems that had occurred and

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AN OPERATING LICENSE FOR
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Docket Nos. 50-485-RETARY
and 50-485-SERVICE
50-485-BRANDH

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continued to occur. (Tr. 3008 and 3574.)

Although there is no problem with foundation proof or authenticity regarding the documents (tr. 2067-2075 generally and 3031), CASE has not been able to reach an agreement in the past with Applicants other than perhaps with regard to undue repetition and cumulative evidence and the like (but not to relevancy and materiality) or with the NRC Staff (tr. 2062, 3017-3031). We are hopeful that this pleading will be helpful in reaching stipulations in this regard.

CASE'S ANALYSIS OF EXHIBITS

Since the September hearings, CASE has gone back through virtually all the documents in question (Exhibits 190-658) and reanalyzed them in light of the Board's comments and directives, as well as with regard to what we believe is necessary to have a full and complete record and to adequately present our case in these proceedings. Between now and the time the record is closed, we will also attempt to reanalyze some of the exhibits already admitted into evidence prior to the July hearings (Exhibits 4-189) and delete some of them as appropriate and possible based on later testimony and information in the hearings; we have not attempted to undertake this in this pleading because of the large number of documents involved and the amount of time available. The testimony in the hearings has enabled us to delete some documents and will perhaps also be helpful in enabling us to delete others.

CASE EXHIBITS 190A through 197E - TUSI Audits of Brown & Root (TBR Series):

As contained in CASE Exhibits 190A through 197E, eight Quality Assurance Audits (TBR-1 through TBR-8, respectively) were performed by TUSI-TUGCO of their construction contractor, Brown & Root, Inc. For the following reasons, CASE believes that it is essential that each of these audits be admitted into the evidentiary record of these proceedings.

CASE EXHIBITS 190A through 197E (continued):

As stated in various ways throughout CASE Exhibits 190A-197E, the purpose of these TUSI/TUGCO audits was to evaluate Brown & Root, Inc., Construction and QA Department activities at Comanche Peak for compliance with federal regulations and national standards, and to verify compliance with and implementation of the requirements and commitments set forth in both the TUSI/TUGCO QA Program and the B&R QA Program. CASE intends to show in its proposed findings of fact and conclusions of law throughout the three-year period covered by audits TBR-1 through TBR-8, Brown & Root continually failed to comply with the requirements and procedures of its own QA Program, as well as repeatedly violating American National Standard Quality Assurance Program Requirements for Nuclear Power Plants, ANSI N45.2 - 1971 (CASE Exhibit 687), to which they have also committed.

The mere fact that these audits were performed by TUSI/TUGCO in an effort to verify compliance with and implementation of QA commitments and to oversee corrective actions for any deficiencies found in the QA programs does not support the Applicants' often-stated contention that the Comanche Peak QA programs have and continue to function effectively. To the contrary, TBR's 1 through 8 portray an obvious history of failures to adhere to numerous procedural requirements and a general inability to either provide adequate documentation or to exercise the necessary control over the documentation of QA activities.

Perhaps more importantly, corrective actions taken to resolve the deficiencies identified in the audits were not done in a timely manner (see TBR-6, CASE Exhibit 195A, page 2, and TBR-4, CASE Exhibit 193A, page 2 in particular) and did not serve to prevent recurrence of such deficiencies. Even a cursory review of the eight TUSI/TUGCO audits reveals that the areas of deficiency noted by the audit teams were very similar in nature throughout the three-year period. In addition, the corrective actions taken by Brown & Root (and subsequently approved by TUSI/

CASE EXHIBITS 190A through 197E (continued):

TUGCO) usually consisted of procedural revisions rather than compliance with the original procedural requirements (see especially TBR-3, CASE Exhibit 192C, page 1).

It is the belief of CASE that a thorough evaluation of the issues raised in Contention 5 concerning the Applicants' QA/QC programs can only be made by examining the trends of noncompliance that have emerged during the construction phase at Comanche Peak. The QA audits contained in CASE Exhibits 190A-197E are clear indications of such trends, and therefore, are pertinent and necessary to the evidentiary record upon which the Board must rely to render a decision. They are a vital part of the total picture which CASE will present in its proposed findings of fact and conclusions of law.

CASE EXHIBITS 198 through 201 - Staff Trend Analysis for 1976 through 1979:

All of these exhibits have been withdrawn and replaced by NRC Staff Exhibits 182, 183, 184; 185, 186, 187; 188, 189, 190, 191; and 192, 193, 194, 195, respectively.

CASE EXHIBITS 202 and 203 - Explanation of relative seriousness of items of non-compliance included in a notice of violation; and Summary of I&E Reports:

These two items were included primarily for the benefit of the Board as handy reference items; they are offered for that limited purpose. We believe that they will prove useful to the Board and request that they be allowed in on that basis if the Board so desires. (See tr. 2076-2077.)

CASE EXHIBITS 204 through 297 - NRC Inspection & Enforcement (I&E) Reports:

It should be noted, first of all, that the NRC Staff had indicated to CASE that it did not intend to introduce any I&E Reports into evidence (tr. 1341-1342). CASE has indicated that we feel very strongly (so strongly that we spent some \$5,000 or so on copying I&E reports before we knew the Staff was going to present them

CASE EXHIBITS 204 through 297 (continued):

into evidence) that the I&E Reports are vital to a complete and accurate record in these proceedings. We would prefer that the I&E Reports be admitted into evidence in most cases rather than the NCR's (Applicants' Nonconformance Reports); therefore, we have not cut most of the I&E Reports, opting instead to drastically cut the NCR's we are requesting be admitted. The remaining NCR's are vitally important, however.

We have continually stated that our whole purpose in submitting the I&E Reports was because we were told that the Staff was not going to do it (tr. 2074); we believe that the record would be substantively lacking and incomplete without most of these Reports being included. We have analyzed the thirty-three documents on CASE's proposed list of I&E reports which were not included in the Staff's exhibits which have been received into evidence. Although there are only two which we believe can be excluded in their entirety, most of the other thirty-one are necessary only in very limited fashion as far as what CASE expects to show in our proposed findings of fact and conclusions of law; in some cases, there may be only a paragraph or two which we want to have included in the record. Generally, we expect to refer to this information in one of several ways: to contradict what was stated in testimony by the Applicants' or Staff's witnesses; to support what CASE's witnesses have stated in testimony; or to complete the record in some particular regard where the record would otherwise be incomplete.

Although the Staff has indicated a strong concern for having the record complete, it should be recognized that without CASE's triggering the Staff's production and introduction of the I&E Reports, none of them would be in the record. Further, the Staff even then chose only to introduce the items referenced in its testimony (tr. 1341-1342, 2074, 3026-3027); i.e., supportive to its case and the case of the Applicants. We assume that the NRC Staff would strongly object (based on statements in the transcript) to our introducing only the relevant portions of the I&E Reports into the record; we therefore have not attempted at

CASE EXHIBITS 204 through 297 (continued):

this time to list the specific page numbers in which we are interested but rather have only included a few examples in the I&E Reports to illustrate some of the areas with which we are concerned and to which we will refer in our proposed findings of fact and conclusions of law.

If one were to want to get into the numbers game, it should be pointed out that the Staff has introduced into evidence some twenty-one I&E Reports and ninety-two related documents which were not included in CASE's proposed exhibits list. Further, there appear to be several duplications in exhibits introduced and accepted into evidence by the Applicants and the NRC Staff:

- NRC Inspection Report 79-03, 3/14/79 -- Applicants Exhibit 44g
-- NRC Staff Exhibit 49
- NRC Inspection Report 80-08, 4/18/80 -- Applicants Exhibit 44e
-- NRC Staff Exhibit 54
- NRC Inspection Report 80-11, 6/17/80 -- Applicants Exhibit 44f
-- NRC Staff Exhibit 58
- NRC Inspection Report 79-11, 5/14/79 -- Applicants Exhibit 44c
-- NRC Staff Exhibit 64
- NRC Inspection Report 79-24/79-23, 11/27/79 -- Applicants Exhibit 44d
-- NRC Staff Exhibit 71
- NRC Inspection Report 80-20, 10/21/80 -- Applicants Exhibit 44a
-- NRC Staff Exhibit 125
- NRC Inspection Report 81-15, 11/6/81 -- Applicants Exhibit 44b
-- NRC Staff Exhibit 146

It is immaterial to CASE whether the Applicants' or the Staff's Exhibit remains in evidence; however, it is obvious that one or the other of the above should be withdrawn. This will help to reduce the volume of the record somewhat.

CASE should be allowed to have accepted into the record sufficient documents to support its case, just as the Staff has done. It is not reasonable or just for the Board at this time to require CASE to make its proposed findings of fact at this time by requiring that we detail specifically each and every

CASE EXHIBITS 204 through 297 (continued):

item from the I&E Reports which we will use in said proposed findings of fact and each item's significance. We therefore offer the following brief summary regarding Exhibits 204 through 297:

<u>CASE Exhibit No.</u>	<u>I&E Report No.</u>	<u>Brief Description of Pertinent Information</u>
204	73-02	Citation for Category II severity violation of Appendix B 10 CFR 50, Criterion I, II, III, IV, V, VI, VII, XVII, XVIII, including major deficiencies in the Corporate QA Program and the CPSES QA Plan.
205	74-01	Confirms that several items identified in I&E Report 73-02 still have not been taken care of in the months between the two reports.
206	74-02	<p>TUSI audit of Gibbs & Hill identified 34 deficiencies in G&H's QA manuals and 18 deficiencies in their implementation; G&H's responses were inadequate in 18 instances.</p> <p>Brown & Root (B&R) QA/QC Manual was unacceptable in that the Manual was deficient in that it does not contain sufficient detailed requirements that reflect the applicable criteria requirements of 10 CFR 50, Appendix B. B&R procedure does not prescribe the QA control requirements for items or equipment purchased within the described category that may be installed or used on a safety-related system.</p>
207	74-03	<p>Citation re: Appendix B 10 CFR 50 and various procedure commitments.</p> <p>Freese and Nichols (F&N) develops design from soils design information provided by Mason-Johnston Associates (MJA); F&N QA Manager is responsible for QA activities pertaining to design and field QA/QC direction. F&N QA Engineer is responsible for directing all field QA/QC activities which includes directing the MJA Field Testing Engineer in all QC activities.</p> <p>QA/QC procedures require revision; additional procedures are required; procedure discrepant in several areas; CPSES QA Plan is being expanded to include specific surveillance activities for construction of the SSI dam.</p> <p>Brown & Root on-site construction procedures have not been fully developed.</p>
208	74-04	<p>Unresolved items:</p> <p>B&R Quality Control Procedures are not being adequately controlled.</p> <p>F&N QA program manual lacks procedural control for changes, revisions or additions.</p> <p>F&N "Corrective Action" is indefinite.</p> <p>F&N is developing procedure for inspection and testing re: SSI Shutdown Dam inspection test schedule.</p> <p>Timeliness of report submittal and requirements of paragraph 8.26 of the F&N QA program relative to corrective action were deficient.</p> <p>Mason-Johnston (M-J) written procedures for on-site testing and inspection activities have not been fully developed.</p> <p>B&R on-site construction procedures still not fully developed.</p>

CASE EXHIBITS 204 through 297 (continued):

<u>CASE</u> <u>Exhibit</u> <u>No.</u>	<u>I&E</u> <u>Report</u> <u>No.</u>	<u>Brief Description of Pertinent Information</u>
208 (cont.)	74-04	"In view of the inspection findings regarding incompleted procedural development, the inspectors emphasized the requirement that prescribed implementing procedures, or intructions, must be established and issued prior to the commencement of the related work activity." "...the inspector emphasized that these errors were indicative of a deficiency in the B&R control of changes to and issuance of QA/QC procedures..."
209	75-06	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 11
210	75-10	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 20
211	75-11	Details results of follow-on review by B&R QC staff of "as-built" water/cement ratios of all concrete batch tickets related to the containment building base mat pour placed 7/16/75; remains unresolved. (Follows up on I&E Report 75-10, 10 CFR 50, Appendix B, Criterion V, violation where additional water was added to concrete in the transit mix trucks without approval of designated R. W. Hunt Co. inspector.)
212	75-12	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 23
213	75-13	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 24
214	76-01	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 28
215	76-04	Unresolved Item - Potential 50.55(e) significant deficiency re: 4 to 6" layer of honeycomb stratification in Unit 1 containment base mat pour No. 101-2805-001.
216	76-07	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 31
217	76-08	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 150
218	76-09	Unresolved item re: Calibration Services and control: Calibration services purchased by Mason-Johnston Associates, R. W. Hunt and Brown & Root may not have been purchased from approved suppliers and that QA was not a requirement of the purchase orders. Calibration program of B&R Construction Department did not cover several areas inspected. PSAR does not specifically address the procurement of services as required by 10 CFR 50, Appendix B, Criteria II, IV, VII, and XII. Argon flow regulators controlled by Brown & Root Construction used for welding are not in the calibration program. Discussion of DDR Trend Reporting.

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit No.	I&E Report No.	Brief Description of Pertinent Information
218 (cont.)	76-09	Inadequate documentation received with Brown & Root purchased items. Inadequate documentation received with TUGCO purchased items. "...the IE inspector conducted a follow-on review of selective TUSI and B&R QA/QC records and internal documents relating to TUSI administrative activities involving overall management of the QA program...the inspector observed that QA/QC records and internal correspondence reflect a weakness in the effectualness of the Quality Surveillance Committee. Although quality related problems are being identified during quarterly meetings of the Quality Surveillance Committee, a number of problems appear to be long standing, generic in nature, and without apparent resolution..."
219	77-02	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 59
220	77-04	Potential 50.55(e) significant deficiencies: Concrete Curing Blanket Fire; Cadweld Test Specimen Rebar Failure. Unresolved: omission of 55 2" anchor bolts from the reactor containment building #1 concrete placement, pour 101-2812-001, 002. (This is the same pour in which the crack in the base mat or radiation shield occurred.) Licensee is conducting further evaluation to assure adequate corrective measures have been taken to preclude repetition. Follow-up to unresolved problem regarding 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.
221	77-06	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 62
222	77-08	Discussion of former and current unresolved items on weld deficiencies on the polar crane brackets and weld defects in the polar crane support girders. Re: Implementing procedures - structural and miscellaneous steel and supports, and practice of tack welding of ASTM A540, Grade B23 nuts to A540, Grade B23 bolts and A540, Grade B23 nuts to anchor plates for positioning and securing purposes. "The question arose since A540, Grade B23 (tempered 4340) is difficult to weld. Welding of bolting from this type of material is precluded for ASME Code material by Code Case 1644, and repair welding of this type of bolting is prohibited by ASTM A-614. It was pointed out that the anchor bolt assemblies were not being fabricated to the rules of the ASME Code and that the welding procedures were qualified in accordance with the AWS D1.1 Structural Welding Code."

CASE EXHIBITS 204 through 297 (continued):

<u>CASE Exhibit No.</u>	<u>I&E Report No.</u>	<u>Brief Description of Pertinent Information</u>
223	77-09	<p>Unresolved: possible cold joint in Fuel Building foundation slab. Observed work on installation and welding of polar crane brackets and seismic supports on containment liner of Unit 1. Unit 2 containment liner appeared to have two localized areas where the liner bulged. Liner distorted slightly in excess of the maximum allowable tolerance. Unresolved item.</p> <p>Re: Anchor Bolt Discrepancies. "...related to a breakdown in material control which resulted in the use of materials other than those specified...Corrective action was taken to solve the problems identified and suitable measures were instituted to mitigate the possibility of recurrence."</p>
224	77-10	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 75
225	77-11	<p>Unresolved: Review of quality control records received with shipment of 8 pipe support structures for the Reactor Coolant and Steam Generator cross-over legs revealed that "although a copy of a 'Statement of Conformance' form was included in the document package, the form did not contain a signature and date in the spaces provided; nor were there any references made to the 8 components supplied with the documentation...a PT test report...contained a signed note (with sketch) stating...'Rat holes were filled at request of B&R Inspector.'...NRC inspector expressed a concern to the licensee representative in that there is no evidence of supporting documentation in the file folder that would authorize a welding design change being made by the B&R shop inspector."</p> <p>Re: Design Change/Deviation Procedure Implementation. Unresolved. "...several DC/DDR...did not contain the description of the proposed change or deviation...as required by procedure..., nor did they contain supporting references as required by procedure...Sufficient data were not available during the inspection to define the scope of review and problem definition in supporting documentation for DC/DDR."</p>
226	77-13	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 128
227	78-04	<p>Unresolved: Review of procedures for in-place storage and maintenance of safety related components -- licensee is not committed to the industry standard in the PSAR on the subject, ANSI N45.2.2 "Packaging, Shipping, Receiving, Storage and Handling of Items for Nuclear Power Plants During the Construction Phase," although engineering specifications for safety related components do reference the standard. "...the work procedures contained contradictions within themselves and with each other that could readily lead to confusion among the personnel charged with responsibility for performance of required activities...licensee representatives...stated that a new procedure system was under development.</p> <p>"The IE inspector reviewed licensee procedure 2.7, Revision 4,</p>

CASE EXHIBITS 204 through 297 (continued):

<u>CASE</u> <u>Exhibit Report</u> <u>No.</u>	<u>I&E</u> <u>Nos.</u>	<u>Brief Description of Pertinent Information</u>
227 (cont.)	78-04	'Design Change/Design Deviation Control,' for compliance to commitments contained in PSAR Chapter 17, paragraphs 17.1.1.3 and 17.1.2.3.5. The principal change in Revision 4 relative to earlier revisions was that of requiring the design engineer's approval of field changes from before the fact to after the fact."
228	78-05	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 81
229	78-07	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 35
230	78-10	Potential 50.55(e) significant deficiency, "involves embed design for safety related equipment which has been developed on the basis that the equipment is nonsafety related...equipment list was very out-of-date and contained many NS components classified as NNS. ...the equipment list is a basic document utilized to determine if a safety related structural foundation is required for the equipment. ...Installation of structural foundations for NNS equipment has been stopped until a determination has been made as to the equipment classification...review of foundations that have been installed for equipment classified as NNS and then reclassified as NS after the foundation has been put in."
231	78-11	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 129
232	78-12	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 86
233	78-13	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 41
234	78-16	(10/12/78). Contains NOTICE OF VIOLATION - Failure to Promptly Report a Significant Deficiency...a "Cadweld" in the Unit 1 containment wall had pulled apart while positioning an attached length of 18-S rebar. (Not included in Exhibit 235. Details are included but not Notice of Violation.)
235	78-16	(11/17/78). WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 44
236	78-17	Investigation related to generic aspects of poor workmanship in Cadweld splicing of the Unit 1 Containment wall reinforcing steel.
237	78-18	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 93
238	78-20	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 38
239	79-01	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 92

CASE EXHIBITS 204 through 297 (continued):

<u>CASE</u> <u>Exhibit</u> <u>No.</u>	<u>I&E</u> <u>Report</u> <u>Nos.</u>	<u>Brief Description of Pertinent Information</u>
240	79-04	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 132
241	79-06	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 52
242	79-09	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 63
243	79-11	(6/12/79) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 65
244	79-11	(7/5/79) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 67
245	79-13	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 74
246	79-15	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 120
247	79-16	<p>Potential 50.55(e) Significant Deficiencies: Pair of pressure switches shipped to the site had been found to be defective; Potentially serious design deficiency, re: valving and controls of the alternate emergency water source for the safety related auxiliary feedwater system have been designed in such a way that the cooling water flow for the emergency diesel generators would be severely restricted; unresolved; Chicago Bridge & Iron-fabricated Class IE cable tray hangers with light partial penetration welds which should have been full penetration welds. Had been inspected and accepted by the licensee's QA/QC organization. "...the RRI and other personnel of the RRI office met with licensee representatives...to discuss a perceived morale problem as stated in Inspection Report 50-445/79-15/ 50-446/79-15 letter of transmittal. ...license representatives indicated that they have recently undertaken a training program for the labor force foremen in an effort to teach them to be better supervisors and managers of their crews."</p>
248	79-18	<p>(9/7/79 2-page letter from NRC to TUGCO) re: inadvertent omission of shear tie reinforcing steel from 32nd lift of Unit 2 Reactor Containment Building exterior wall just below the springline. Letter indicates seriousness of problem, including: order to stop placement of safety-related concrete in the Unit 2 RCB exterior wall and dome; review in detail Gibbs & Hill engineering analysis; "analyze and correct the breakdown in the QA/QC program which allowed the omission of the reinforcing steel to occur and identify corrective action that has been taken to minimize recurrence of this type of QA/QC breakdown;" etc.</p>
249	79-18	(9/24/79 letter NRC to TUGCO) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 69

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit No.	I&E Report No.	Brief Description of Pertinent Information
250	79-18	(11/9/79 letter NRC to TUGCO) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 70
251	79-19	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 139
252	79-22/79-21	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 121
253	79-26/79/25	<p>Investigation of 5 Allegations:</p> <p>(1) Rebar was omitted in 4 columns in the EA wall in Unit 1 Auxiliary Bldg. at elevation 807', and that alleged's general foreman and site engineering personnel were aware of the omission.</p> <p>(2) In Unit 1 Auxiliary Building, the concrete slab acting as the ceiling above elevation (floor) at 832', in the area just before entry into the Unit 1 Safeguards Building, had a 20' x 20' honeycomb area which was exposed upon concrete form removal; alleged felt it had been corrected by simply dry-packing.</p> <p>(3) In Unit 1 Containment, there had been a mixup in anchor bolts; 3000 anchor bolts had been interchanged.</p> <p>(4.a) There is general cracking of floor slab concrete in the plant buildings.</p> <p>(4.b) Horizontal tie rebar was omitted in Unit 1 Containment/Containment Wall.</p> <p>Conclusions: (1, 2, and 3) based on factual events that had been caught by Applicants; (4.a) Has no apparent merit; and (4.b) Neither substantiated nor refuted, but is thought to refer to event involving omission of horizontal ties in the upper part of the Unit 2 Containment wall which is discussed in Inspection Report 50-445/79-18; 50-446/79-18.</p> <p>Other details: (1) There are only 4 columns in the EA wall of the Auxiliary Building, extending from the building foundation to the roof. B&R NCR C-806, 10/27/77, indicated this was discovered; reinforcing steel in 4 columns had been omitted in the preceding erection activity (between 807'-831'). 12 bars, each 1" in diameter, were omitted from each column and four separate earlier concrete placements were involved during May-Oct. 1977. NCR information was submitted to the Architect/Engineer, provided by Design Change/Design Deviation Authorization No. 486, 11/1/77, authorizing not only the omission of the steel between 807' and 831' elevation, but further directing that it be omitted in the balance of the columns through elevation 873'. There was a difference of 5-6 months between the allegation and the referenced NCR. (2) In one place it states that the alleged was aware of the corrective action taken; in another place it states that the alleged was not aware of the corrective action taken. It states that placement was made in August or September of 1978 (Background Information); investigator ties it in to NCR C-1034, dated 7/19/78, and states that it was being repaired correctly. (3) This was reported as possible significant construction deficiency in 1977 (NCR's M-704 and M-722). "The NCRs describe a combined engineering and construction management</p>

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit Report No.	I&E Nos.	Brief Description of Pertinent Information
253 (cont.)	79-26/79-25	solution to properly identify the differing materials and to utilize the materials which could not be readily welded in a different method of assembly..." (4.a) and (4.b) "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 alleger was advised that these could not be pursued." "The search (for data by Applicants) was not possible due to the lack of specificity." The Resident Reactor Inspector (RRI) states his definition of cracks that he would consider significant in terms of possible structural failure, and his definition of hairline surface cracks: "...caused by thermal expansion...usually very tight...extends only into the concrete to the most exterior layer of reinforcing steel, typically one to two inches below the surface..." Re: (4.b): "...not able to either effectively substantiate or to refute...hypothesized that alleger misconstrued an event which occurred in the Unit 2 Containment wall" (although the alleger said Unit 1 containment wall)... This event involved the initial omission of horizontal ties...in the upper part of Unit 2 Containment wall...I&E Report 79-18. This hypothesis is based on substantial indications that all of the allegations made were essentially based on hearsay information relative to events about which the alleger had little or no personal knowledge."
254	79-27/79-26 (11/15/79)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 156
255	79-27/79-26 (11/21/79)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 157
256	79-27/79-26 (1/8/80)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 158
257	79-28/79-27	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 140
258	79-31/79-29	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 104
259	80-01 (1/23/80)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 102
260	80-01 (2/15/80)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 103
261	80-02	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 122
262	80-03	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 163
263	80-03 (3/20/80)	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 164
264	80-04	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 196
265	80-05	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 53

CASE EXHIBITS 204 through 297 (continued):

<u>CASE Exhibit No.</u>	<u>I&E Report No.</u>	<u>Brief Description of Pertinent Information</u>
266	80-09	WE WILL WITHDRAW THIS EXHIBIT
267	80-12	Meeting with NRC and TU personnel re: reportability and documentation of significant construction deficiencies, and reporting of other significant events of interest to NRC not required by current regulations.
268	80-13	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 107
269	80-15	(Applicants' August 18, 1980 to Seidle, NRC) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 170
270	80-15	(7/23/80) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 169
271	80-15	(6/23/80) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 168
272	80-17	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 118
273	80-18	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 112
274	80-23	(10/16/80) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 113
275	80-23	(11/19/80) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 114
276	80-25	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 181
277	80-27	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 172
278	80-28	Designation of QC hold points had been incorrectly marked as not applicable (NA) for each operation.
279	81-01	Re: Installation of pipe supports and seismic restraints: RRI reviewed the "Computer Tracking/Pipe Support Flow Diagram" which depicts the management and engineering system for controlling the on-site engineering design process for small pipe hangers, and for controlling design changes for large hangers that were initially engineered off-site, but for a variety of reasons must be changed... also reviewed a top level procedural document intended to provide the basis for compliance with NRC IE Bulletin 79-14 which requires "as-built" verification that pipe system supports and restraints are of the correct configuration and in the location required by the design, all for the purpose of assuring that the final system stress analysis is performed on the "as-built" system...The licensee is understood to be depending on the final "as-built" inspection to identify any such work that has not been accomplished. Since this program has not yet been fully defined or proceduralized and will not be implemented for a period of time, the RRI determined not to pursue the issue at this time.

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit Report No.	I&E Report No.	Brief Description of Pertinent Information
280	81-02	(2/25/81) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 173
281	81-02	(3/20/81) WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 174
282	81-04	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 149
283	81-05	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 177
284	81-06	<p>Re: Component cooling and auxiliary feedwater system upgrade program. RRI interviewed cognizant personnel and records pertaining to this program instituted by the licensee in an effort to upgrade the quality of these two major piping systems. The upgrading consists of radiographing field welds and making weld repairs as required to conform to adopted standards. The records indicate that in the past six months, approximately 450 welds were examined with about 20 percent requiring some degree of weld repair.</p> <p>Re: Installation of Moment Restraints. Main Steam and Main Feedwater piping system moment restraints; fabricated off-site by Chicago Bridge and Iron and set and bolted together on-site... steel structure did not interface with forgings as required; some of pipe appeared to have been forced into alignment by wedges and jacks that would not necessarily be representative of the alignment when the designed pipe supports are installed...the previously mentioned gap (1/4-inch to zero) dimension and tolerance for the Feedwater restraint had been changed to 3/16" ± 1/16". Deviations from the drawing-required dimensions on the Mainsteam restraints were being documented and forwarded to the A/E for review. A/E-required dimensions would be accommodated at a later date. RRI indicated concern because even minor dimensional corrections would be very difficult to achieve, yet could be critical to the function of the devices...QC has not accepted these restraints nor has the engineering evidently been fully completed...</p>
285	81-07	WE WILL WITHDRAW THIS EXHIBIT
286	81-09	Discusses several previously unresolved items and their disposition: Qualification of Okonite Electric Cable; Storage of Fuel Storage Racks; NSSS Design (possible 50.55(d) item, reported by Westinghouse under 10 CFR 21; possible design problem with 6.9 KV circuit breaker; design of HVAC Ductwork and Fan Supports; redesign of HVAC System serving the vital AC converters and DC battery charger rooms; possible error in machining of certain linkage rods in Emergency Diesel Generator engines furnished to CPSES for Units 1 and 2, reported to NRC by Transamerica Delaval Corp under 10 CFR 21; Plasite coating within carbon steel portion of service water system coming loose on a flange surface (coating of pipe not considered safety-related although pipe system was; Plasite coating was specified by the Engineer for economic reasons and not considered from a safety standpoint; and piping minimum wall.

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit No.	I&E Report No.	Brief Description of Pertinent Information
287	81-10	<p>Unresolved item: Both instrument tubing drain lines for two safety-related Condensate Storage Tank Level instruments were physically deformed from their respective seismic supports as a result of adjacent construction activities and/or traffic through the instrument installation areas...Damage to these instrument installations would appear to require replacement/repair of the instrument tubing and a documented reinspection on the part of TUGCO prior to permanent use.</p> <p>"The NRC inspector found that no licensee (TUGCO) procedures had yet been issued, regarding instrument installations, to address the responsibilities, activities, and documentation requirements of the operation utility (TUGCO), after release and turnover of the safety-related instrument systems, subsystems, and components by the construction utility (TUSI). No licensee (TUGCO) procedures were found to delineate and control the activities to maintain, remove, repair, modify, assemble/disassemble permanent plant instrumentation equipment, after release/turnover to TUGCO."</p>
288	81-11	<p>(Closed) Unresolved Item 79-27/79-26 Class 5 Pipe Hangers, re: concern on part of RRI that certain portions of piping systems might not be adequately supported during the course of a seismic event. The pipe in question was 2 inch and under designated by the A/E as being in piping class 5. This class indicates that the pipe has no safety function but whose failure in a seismic event could jeopardize another safety function. RRI found certain pipe hanger drawings had been issued for small pipe hangers that indicated the pipe was class 5 but revealed hanger designs that clearly were not of seismic quality, i.e., did not have the required stiffness.</p> <p>(Closed) Unresolved Item Use of Flammable Electrical Cable Pulling Lubricant.</p> <p>(Closed) Unresolved Item Pipe Spool Flange Material, not of adequate strength. Applicants' position that this was not reportable under 50.55(e) was based on an "analysis of the flange in terms of allowable stresses versus computed actual stresses using formulas specified in subsection NR of Section III of the ASME B&PV Code. The calculations did not include any external live or dead loads (these were subsequently identified as being negligible) but did indicate a substantial margin of safety above the Code allowable stresses. RRI also concurs with licensee's decision to replace flanges in question..."</p> <p>Field Design Change Activities. RRI audited system "Design Change Authorizations" which are generally used to document changes to the technical requirements of the various project specifications or to document isolated deviations from the specifications...to determine effectiveness of the licensee's administrative controls for issuing the changes, distribution of the changes to affected parties, and assuring that the changes are ultimately reviewed by the originating engineering agency; and a technical evaluation of each of the changes for potential effects on the safe operability of any of the affected</p>

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit No.	I&E Report Nos.	Brief Description of Pertinent Information
288 (cont.)	81-11	<p>piping systems. Audit revealed: ...(b) The administrative control to achieve design review of all of the Design Change Authorizations has not yet achieved full effectiveness, primarily because the control was not initiated until after several thousand of the individual change documents had already been issued...(c) Of the 165 changes issued, 55 were catalogued by the change originator as being generic changes to be incorporated into the basic document following acceptance of the change by the design reviewers. The balance of the changes, 110 in all, were noted as design deviations that will not be incorporated into MS-100. 86% of these deviations covered specific cases where individual piping runs did not conform to one of four erection tolerances established within MS-100...</p> <p>Discusses unresolved item re: Safety-Related Piping Installation and welding.</p>
289	81-12	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 178
290	81-13	<p>Unresolved item: Completed pipe supports in safety-related areas ...many sway strut supports needed adjustments...brackets on pipe support clamps not parallel to each other as required by procedure. . . .in process of incorporating the verification of inspection of Class 1, 2, and 3 pipe supports into Procedure QI-QP-11.13-1, Rev. 1, "As-Built Piping Verification Instructions." This procedure will encompass the verification of correct pipe supports, adjustments, and correct load settings...this procedure will also address Class 5 pipe supports; being revised but not completed to date.</p> <p>Unresolved item: spring hanger support that did not conform to the design drawing...support had been voided, but later informed it would be utilized...discrepancy in numbering system of support.</p> <p>Visual inspection and examination of ASME Class II and III component supports: cross reference of welder's symbol to the identify of the welder, who was not listed on the current Welder Qualification Matrix was not readily available in the records vault. Licensee agreed to develop a cross reference of welder's identification and their assigned symbols and maintain them in records vault.</p>
291	81-14	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 177
292	81-16	<p>(Closed) unresolved item re: Engineered Depth of Concrete Anchor Bolts where grout was placed between hanger baseplate and wall or ceiling to which it was attached without case basis engineering approval. ...20 hangers not yet analyzed have been posted for review at later date...licensee has revised Quality Control Procedure QI-QAP-11.1-23 to require the quality control inspectors to measure bolt protrusion above the base concrete surface from which the embedment may be derived. This information will be provided to engineering for their analysis of the "as-built" hanger.</p> <p>Unresolved item: Installation of Steel Structural Access Platforms. "...RRI was provided with correspondence which indicated that there was a growing awareness that there might be a specification/</p>

CASE EXHIBITS 204 through 297 (continued):

<u>CASE</u>	<u>I&E</u>	
<u>Exhibit Report</u>		
<u>No.</u>	<u>No.</u>	<u>Brief Description of Pertinent Information</u>
292 (cont.)	81-16	<p>quality assurance problem in this area but, the dates of the correspondence also indicated that no definitive action had been evolved in over six months until apparently prompted by the RRI's interest at which time the engineer asked QA to consider performing an inspection of as yet to be determined structural steel assemblies. The RRI also became aware, during the course of reviewing the correspondence, that yet another area of concern was structural steel assemblies which are supporting stairways..."</p> <p>Unresolved item: Design and Installation of Building Supplemental Steel Structures for Supporting Pipe...Discussions between the RRI and the current manager of the site Pipe Support Design Group (a component of the Comanche Peak Project Engineering Group) revealed that his group is currently reviewing the design to assure that structures are capable of supporting all necessary loads, including those seismically generated.</p>
293	81-18	<p>(Closed) unresolved item: Final Verification of Pipe Hanger Installation. "This item concerned observations by an NRC Inspector that pipe hangers already accepted by Quality Control as complete and acceptable were in some cases loose and out of adjustment in regard to the pipe clamp and strut elements...The licensee had already recognized the problem but had not completely formulated a solution. The licensee has now issued QI-QP-11.13-2, Revision 0, dated October 22, 1981, to proceduralize a final reinspection of the pipe support systems after all work in a given area is sufficiently complete that it is unlikely that the support will again have to be disconnected for work access. This effort has been disassociated from the as-built hanger verification program (IE Bulletin 79-14) since they do not serve the same purpose nor need they be done at the same time. The as-built program also will not apply to hangers in the Class 5 design category which will be included in the final reinspection program..."</p> <p>(Closed) Unresolved item: 80-18, Embedment of Anchor Bolts Through Floor Topping..."...the issue reported dealt with the possibility that the design embedment of concrete anchor bolts might not have been achieved when embedded through a 2" layer of concrete placed on top of the structural floor slabs placed to obtain a smooth finish for the floor...The licensee's status reports indicate that ...one hundred forty-two pipe supports that require rework which has not yet been done, have been documented on NCR M-81-01667...a substantial amount of rework remains to be accomplished as documented by the above referenced Nonconformance Report..."</p> <p>(Closed) unresolved item: Uncontrolled Modification of Concrete Anchor Bolts: On 9/29/80, craft electrician alleged and confessed that "he and other electricians had on occasion modified concrete anchor bolts by cutting off the wedge area and grinding on a new area in some cases or cutting off the second wedge section where the super strength bolts were utilized to make easier the embedment of the bolt...formal 50.55(e) notification..."</p>

CASE EXHIBITS 204 through 297 (continued):

CASE Exhibit No.	I&E Report No.	Brief Description of Pertinent Information
293 (cont.)	81-18	(Closed) Failure of Westinghouse Motor Operated Valves to Fully Close at Maximum Design Pressure...Westinghouse had notified that a group of 3" and 4" motor operated valves had been identified that might not close fully at full design level pressure...formal 50.55(e) notification...The NRC staff also was aware of the problem which caused the issuance of IE Bulletin 81-02. The overall scope of the problem expanded over the past several months to include valves up to 18" as well as the original sizes reported....NCR M-2679...
294	81-20	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 15
295	82-01	(Closed) Unresolved item 81-13, Identification of pipe support. (Closed) Design/Construction Deficiency, Seismic Instrument Tubing Support...re: discovery by a licensee vendor that design work accomplished by the vendor had utilized load data based on the Operating Basis Earthquake rather than the required Safe Shutdown Earthquake... 10 CFR 50.55(e) - the corrective actions indicated in the letter involved a substantial reinspection and engineering analysis of already installed instrument tubing runs with attendant specific corrections on a case basis...contributing factor was that the licensee had not properly specified the scope nor provided an adequate basis for the engineering work that the vendor was to accomplish...the vendor had undertaken the work on verbal orders from the licensee under an existing contract for supply of personal services rather than engineering services, had stipulated that the work involved non-safety applications, and had not invoked either Appendix B or Part 21 of Title 10 until after the vendor recognized that errors had been made and informed the licensee...At the time that the request was made, either late 1978 or early 1979, the engineers were apparently uncertain as to what criteria should be applied on an overall basis to the broad design scope involved considering that there are several hundred instrument channels, most of which have no safety relationship. Many of the instrument channels are, however, very important to safe operation or shutdown of the reactor, and yet others are moderately important. At that time, the licensee's engineering personnel selected the lowest quality level since it represented the majority situation without due regard for appropriate technical or regulatory requirements...Interviews of selected individuals within the licensee's engineering groups by the SRIC revealed a lack of proper awareness of the requirements of 10 CFR 50.55(e) which has been corrected by clarification of appropriate procedures, and by an indoctrination program for the involved personnel... (Closed) allegation re: forgery of QC inspection records documenting installation and inspection of two different conduit supports...SRIC undertook limited investigation...initials of some QC inspectors would be relatively easy to forge where others would be difficult, although by no means impossible. The licensee

CASE EXHIBITS 204 through 297 (continued):

<u>CASE</u> <u>Exhibit Report</u> <u>No.</u>	<u>I&E</u> <u>Report</u> <u>No.</u>	<u>Brief Description of Pertinent Information</u>
295 (cont.)	82-01	<p>has since determined that full signatures are desirable on the inspection records as a means of reducing the possibility of future forgeries and has issued instructions to implement the decision...</p> <p>Instrumentation Installation activities...there appeared to be an inconsistency between the requirements of specifications and commitments contained in FSAR...this has the effect of deleting the ASME third party inspection and certification by the Authorized Nuclear Inspector, a fact confirmed during discussions between the ANI personnel and the SRIC. The SRIC also noted during the review of the referenced procedures that those involving inspection activities were on the licensee (TUGCO) format rather than the Brown & Root format indicating that the inspection activity was not being accomplished under the B&R ASME Quality Assurance Manual...The SRIC determined that the major impact of the inconsistencies was the deletion of the third party Code inspection, not the actual installed quality of the tubing systems. The matter was brought to the licensee's attention by the SRIC. Unresolved item. During the review of the referenced QL inspection procedures, the SRIC noted that the procedures were lacking in instructional detail in certain aspects. These matters were also brought to the licensee's attention who informally committed to the SRIC that the procedures would be revised to consolidate and elaborate on the inspection requirements. Also unresolved item.</p> <p>Piping System and Supports Installation Activities: SRIC reviewed the extensively revised Brown and Root ASME Quality Assurance Manual and a substantial number of the supporting Quality Assurance Procedures and Instructions. The revisions were made as a result of the findings from a routine ASME N stamp survey conducted on October 12-14, 1981 and preparatory to the second ASME recertification survey which took place during the week ending January 22, 1982...The increased detail in the primary manual has the long term effect of making it more difficult for Brown & Root to make program changes without the prior knowledge and concurrence of the Authorized Inspection Agency, as was the case prior to the recertification survey.</p> <p>Unresolved item, re: electrical cables being pressed against edges of cable trays, etc...SRIC judged that the on-going installation effort, which is nearing completion, has probably caused cables installed months ago to become unacceptable due to the increasing cable density...The matter was brought to the licensee's attention. 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.</p>

CASE EXHIBITS 204 through 297 (continued):

<u>CASE Exhibit No.</u>	<u>I&E Report No.</u>	<u>Brief Description of Pertinent Information</u>
296	82-02	(3/26/82, Unit 1) Preoperational Test Program Quality Assurance ...plan and procedures showed discrepancies and/or weaknesses in the following areas: (a) That the plan will provide controls over conduct of preoperational testing and related activities; (3) That requirements for inspection frequencies, procedures, and check-lists have been established; and (g) That a system of audits has been defined...The NRC inspector was informed by the licensee that the program and procedures are undergoing a complete revision... unresolved item.
297	82-03/82-02	WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 118C

In preparing the preceding analysis, one of the things which struck CASE was that the Staff and CASE have introduced around the same number of I&E Reports for most years, with one notable exception. The number introduced by the Staff diminished noticeably after 1980 as compared to the number introduced by CASE. This would tend to add more credibility to the Staff's and Applicants' position and give the erroneous impression that things had improved greatly after 1980 and that there were fewer problems thereafter. An additional reason CASE believes it is necessary to include the previously referenced I&E Reports for 1981 and 1982 is to demonstrate that there are problem areas with the QA/QC program at Comanche Peak which are continuing in nature through the present time.

CASE EXHIBITS 298 through 304:

298 -- 7/7/82 NRC Summary of Caseload Forecast Panel Meeting and Facility Tour. CASE was precluded from cross-examining regarding this exhibit at one point earlier in the hearings. However, there are some items which are contained in it which need to be in the record (preferably during cross-examination of the NRC Staff rebuttal panel to Walsh/Doyle testimony): (1) "...construction on Unit 1 was 86 percent complete and construction on Unit 2 was 46 percent complete." (page 2) (2) "The installation of pipe hangers and restraints on Unit 1 are nearing completion and delays associated with this effort are a thing of the past." (page 2) (3) "The status of construction on both Units 1 and 2 is summarized by the bulk commodity comparison Table, Enclosure 3. For Unit 1 structural concrete and piping and hangers are 93 percent or greater completed and wire and cables are greater than 75 percent complete except for security and lighting..." (page 3) (4) "...in the Unit 1 containment building, Unit 1 safeguard building, Unit 1 diesel generator rooms, and fuel building...most of the pipe supports are installed..."

CASE EXHIBITS 298 through 304 (continued):

- 298 (continued): (page 4) (5) "The bulk of construction on Unit 1, and associated structures and systems needed to operate Unit 1, is approaching completion. The preoperational testing program for Unit 1 is expected to start in June 1982..." Unit 2 Summary...Hangers are scheduled to complete the third quarter of 1982." (Enclosure 2, page 2) (6) "Bulk Commodity Comparison, Comanche Peak Units 1 & 2, Data Thru March 27, 1982: Unit 1, Pipe Hangers: 2½" & Larger = 92.8% Comp.; 2" & Smaller = 94.7% Comp." (Enclosure 3, Table).
It appears that there are some inconsistencies between the preceding and some of the testimony in these proceedings; CASE believes it should be allowed to cross-examine the NRC Staff's Walsh/Doyle rebuttal panel in this regard. We are therefore not withdrawing this exhibit.
- 299 -- NRC General Statement of Policy and Procedure for Enforcement Actions - Effective 3/3/82 - FEDERAL REGISTER - 10 CFR Part 2 --
WITHDRAWN -- REPLACED BY NRC STAFF EXHIBIT 13B
- 300 -- Guidance (NRC) - 10 CFR 50.55(e), Construction Deficiency Reporting, 4/1/80 --
ACCEPTED INTO EVIDENCE -- (We will be cross-examining the NRC Staff's rebuttal panel to Walsh/Doyle testimony on this exhibit.)
- 301 -- Chapter 0800 - 0850 (NRC) Notice of Violation - Guidance (cont.), Oct. 1975 --
(We plan to cross-examine the NRC Staff's Walsh/Doyle rebuttal panel on this.)
- 302 -- 8/25/76 letter to Seidle, NRC, from Hall, NRC, Chief, Engineering Support Section, re: IE Inspection Report Nos. 50-445 & 446/76-08, Comanche Peak Units 1 & 2 - interpretation of MC0850 --
WE WILL WITHDRAW THIS EXHIBIT.
- 303 -- (NRC) Design Change Control - Procedure No. 37996B, 8/15/77 --
ACCEPTED INTO EVIDENCE -- (We plan to cross-examine the NRC Staff's Walsh/Doyle rebuttal panel on this.)
- 304 -- (NRC) Outstanding Items List --
WITHDRAWN

CASE EXHIBITS 305 through 570, and 626 through 628 -- NCR's, DDR's, DR's and Logs (Nonconformance Reports, Deficiency & Disposition Reports, and Deficiency Reports and Logs of same):

We have been able to cut down the number of these documents drastically following our reanalysis of each of them. This has been possible primarily based on two assumptions: that we will be able to have the I&E Reports (see Exhibits 204 through 297 listing preceding) and the following three documents accepted into the record: CASE Exhibits 626 through 628 (Brown & Root Deficiency Log, Brown & Root DDR Log, and TUGCO NCR Log, respectively). With that information in the record, we believe we will be able to make the specific points we

CASE EXHIBITS 305 through 570, and 626 through 628 (continued):

want to make in our proposed findings of fact and conclusions of law, while at the same time reducing the volume of documents and pages in the record.

In our discussion which follows, we have attempted to logically group the documents in question (which is somewhat difficult because some documents have several different pertinent pieces of information in them). However, for the convenience of the Board and parties, we are including as Attachment A hereto a listing in order of exhibit number indicating the status of each.

Another way in which we have been able to reduce the number of documents and pages is by indicating only those pages which we are particularly interested in. We will attempt to arrive at a stipulation with the Applicants in this regard; we believe that since we have revised our thinking considerably as to what the exhibits in this batch will be used to show, this may be a possibility. This would greatly reduce the number of pages and the volume of the exhibits we propose to introduce into the record.

The following document pages will generally be used to contradict what was stated in testimony by the Applicants' or Staff's witnesses, to support the testimony of CASE's witnesses, or to complete the record in some particular regard where the record would otherwise be incomplete. Further, they will be used to illustrate that many times a solution on an NCR which was supposed to solve the problem and prevent it from recurring did not in fact prevent such recurrence, sometimes again and again and again; if the problem continued to recur, then it wasn't really solved and that portion of the QA/QC program broke down. With this information and the logs of nonconformances, etc., we should be able to show the pattern of recurring QA/QC breakdowns insofar as the NCR's are concerned. We want to emphasize that this will be possible only if Exhibits 626, 627 and 628 are accepted into the record.

CASE EXHIBITS 305 through 570, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
381	E-1212		WITHDRAW
380	E-1212R1		WITHDRAW
376	M-709		WITHDRAW
510	C-1296R1	1, 3, 4	Arc strikes: According to the "CRSI Handbook for Placing Reinforcing Bars," Handbook Section 10-11 states, "Simply starting a spark against a bar..... or any similar operation that concentrates high heat at one point of a bar creates what is called a 'notch' effect. Tests have shown that this can reduce the strength of a bar to 35 to 40 percent of its capacity'." Recurring problem.
511	C-1296		WITHDRAW
494	M-2962		WITHDRAW
395	M-3077		WITHDRAW
394	M-3077R1		WITHDRAW
400	M-3333S		WITHDRAW
311	DR214	1	Calibration -- Recurring problem: tong tester
321	C-445	1,2	several instruments
338	M-471R1		WITHDRAW
342	M-475		WITHDRAW
345	M-480	1	weld rod oven
350	G-487	1,2	calibration stop work order -- pressure gauges
355	M-501		WITHDRAW
357	E-503	1,2	lifting of stop work order --- meggers
370	M-538		WITHDRAW
371	M-539		WITHDRAW
373	C-546		WITHDRAW
561	G-589	{ 1,2,4,5 89,90 (typical of most pages) 97,98 (water/cement ratio exceeded) }	water meters
477	C-606		WITHDRAW
313	C-423		WITHDRAW
491	C-1118		WITHDRAW
314	C-424R2	1,2	Concrete slump -- Recurring problem. Original NCR not available for file. "Since the failure to obtain the particular slump sample cannot be corrected, the following information is provided as rationale for accepting the affected concrete 'as-is.'..."
315	C-427		WITHDRAW
316	C-437	1,5,6,7	Blending of concrete aggregate -- Recurring problem. Procedure developed. "A meeting was held with B&R Construction, Engineering and QC personnel to stress the importance of having procedures available prior to the performance of safety related activities."

CASE EXHIBITS 305 through 570, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
318	C-440	1,2	Waterwell used for concrete curing water failed to meet requirements. "A corrective action statement is impractical as the situation is irretrievable in this case and the following justification for 'use-as-is' is submitted..."
319	C-443R1	1	"Dry-pack" grout mix was used rather than "grout" as specified. "Dry-pack" grout mix design to be developed and submitted for approval. "B&R will conduct a meeting with all Area Civil Engineers, Quality Control Inspectors, and Craft Supervisors involved in the placement of concrete to emphasize the requirement for verification by the Area Engineer that the mix designs specified for each placement are in accordance with the current applicable drawings and specifications." Original NCR not available for file.
320	C-444		WITHDRAW
322	C-446	1	3/4" gravel was used for concrete production prior to completion of gradation tests. Recurring problem. New procedures set up. "In addition any future violations of this procedure will result in person(s) being subject to termination. Also, closer supervision will be conducted in the future on the aggregate handling operation."
326	C-450		WITHDRAW
327	C-453		WITHDRAW
330	C-460		WITHDRAW
340	C-473R1		WITHDRAW
351	C-488R1	1	(Air entrainment in concrete) "Employee assigned to this concrete placement was counselled concerning failure to follow procedures and was later discharged for falsifying his acceptance report of this placement." Original NCR not available for file.
358	C-507		WITHDRAW
361	C-515	1	2/8/77 wall was exposed to heat when curing mat (ignited by welding torch) burned. Visual inspection only.
363	C-518	1	3/1/77 top of wall was exposed to heat when curing mat (ignited by welding torch) burned. Visual inspection only.
366	C-530		WITHDRAW
369	C-533		WITHDRAW
368	C-542		WITHDRAW
372	C-545		WITHDRAW
375	C-554		WITHDRAW

CASE EXHIBITS 305 through 570, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
528	C-571R1	1,2	In Auxiliary Bldg. pours, 16 hours after the pour, load stresses were applied by placing bundles of rebar, forms (metal & wood), lumber, pipe braces, etc. on the elevated slab. No cylinders were broken and no Engineering evaluation of how much load this elevated slab could withstand was made prior to this loading, thus rendering structural integrity of this slab indeterminate." "NCR C-571R1, NCR C-576R1:...The fact that the supporting shoring was left in place and a visual inspection revealed no discontinuities is the basis for the belief that the imposed loads will not impair the integrity of the slabs." Original NCR not available for file.
480	C-759	1,2	On Auxiliary Bldg. pour, bars were subjected to load stresses after pour due to scaffolding constructed such that people would step directly on the tails of the rebar. This caused voids up to 5" deep around the rebar and cracking of the concrete to an indeterminable depth.
377	C-835		WITHDRAW
487	C-838		WITHDRAW
488	C-968		WITHDRAW
500	C-1335	1,2	Fire, caused by fuel spillage from heater being used in concrete curing process, spalled concrete in an area approx. 8' wide x 9' high x 3/4" deep and possibly an area at the same location which is hidden by forms. Visual inspection indicates no apparent damage. Occurred 1/26/79; signed off 3/3/80.
403	C-82-00475	1	Fuel Bldg. 827'. Drawing calls for concrete to be Class "A" or Class "C"...Concrete blocks referenced in drawing were poured with class "F" (#129). No hold tags applied. Open (when we received it on discovery).
332	C-429R1		WITHDRAW
317	C-438		WITHDRAW
323	C-447R1		WITHDRAW
325	C-449	1	Concrete compressive strength tests. Recurring problem.
328	C-457	1	Same as above; to indicate extent of problem.
353	C-499	1	"
365	C-529	1	"
529	C642R1	1	"The attached compressive strength test reports representing concrete placements listed below indicate field cured cylinder compressive strengths that do not comply with the requirements...Rev. 1 issued to delete CAR 8 requirement. (NOTE: Concrete

CASE EXHIBITS 305 through 570, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
529 (cont.)	C642R1		pour 101-2812-001, the pour in which the crack in the base mat or the radiation shield occurred, is one of those listed. And, like the concrete pour card for pour 101-2812-001, the original of this NCR was not available for file.)
530	C-642R2	1,2,3,21	Same as above, except Rev. 2 issued for CAR 8 requirement. (CAR 8 = CASE Exhibit 625)
501	C-1006		WITHDRAW
496	C-2269		WITHDRAW
336	C-468	1,2,5,6	Defective concrete; rebar exposed. Recurring problem, due to congested areas. Procedure set up to prevent recurrence, 3/15/77.
374	C-547		WITHDRAW
533	C-723	1	"On pour #101-2812-002, Containment #1, elevation 809'0", directly above removable floor plate detail 'B', dwg. S1-0521 the aforementioned specification was violated. Due to insufficient consolidation of the concrete in this area honeycomb exists, exposing structural rebar." (NOTE: this is immediately adjacent to and covered by the same concrete pour card as the pour in which the crack in the base mat or the radiation shield occurred.) Repaired. (This occurred six months after procedure had been set up to prevent recurrence; see Ex. 336 above.)
481	C-805		WITHDRAW
486	C-837		WITHDRAW
490	C-1112	1,2,3,4	17 areas of defective concrete were found upon form removal on concrete placement poured 4/14/78. "NOTE: Discrepancy between reporting date (4/15/78) and issuance of NCR (8/23/78) due to extensive chipping operations to determine extent of non-conformance." CAR Not Required.
492	C-1170	1	Extensive honeycomb on chilled water surge tank foundations, Aux. Bldg. #1.
507	C-1294	1,15	Defective concrete in numerous areas, Safeguards #1.
506	C-1303	1,2	Defective concrete in several locations, pour 101-8805-008, Reactor Ext. Containment 1 Wall. "There may be other defective areas hidden by curing mats, etc. that will be added to this NCR on a revision if detected."
535	C-1338	1,2,3,5	Defective concrete in 9 locations Reactor Containment #2 core walls in compartments 2 and 3.
503	C-1367	1,2,3,4,5,6	12 areas of defective concrete at bottom of slab and beams Upper Auxiliary Bldg. Units 1 and 2.
502	C-1389	1,3	Units 1&2 Elec. Control Bldg., 2 areas, defective concrete penetrates the full thickness of the wall.

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
536	C-1766	1	Defective concrete, 9 locations, reactor containment #2 core walls, compartment one, Unit 2 containment bldg., pour 201-4812-007, 6/21/79. Reported by date: 10/18/79, etc.
537	C-1766R1	1	Same as above, except 20 locations, and Reported by date: 3/3/80, etc.
538	C-1766R2	1,2,5,10,13,16,20	Same as above, except dispositions of areas 17 and 20 transferred to NCR C-2259, and Reported by date: 5/6/80, etc. - west wall
540	C-1784	1	Defective concrete, 7 locations, reactor containment #2 core walls, compartment 2, pour 201-4812-007, 6/21/79, east wall. Reported by 10/30/79, etc.
539	C-1784R1	1	Same as above, except 22 locations, and Reported by date, etc.: 3/3/80, etc.
541	C-1784R2	1	Same as above, except dimensions of the void under and around the cold leg pipe restraint. Upon chipping back to sound concrete under this pipe restraint, a new void was opened up. The void and defective area goes to a depth of 8' under this pipe restraint from wall face." and Reported by Date 4/8/80, etc.
542	C-1784R3	1,2,10,13,20, 24, inserted page adding 24 additional pages to back of NCR, Attachment pages 13, 14, 21,22,24	Same as above, except dispositions of Areas 1 and 7 transferred to NCR C-2259 and Reported by date 5/6/80, etc. If one looked only at latest revision, it would appear that this was handled in a timely manner, since date of concrete pour was left off of R3. It actually took from 10/30/79 to 5/19/80 for it to be closed out. NOTE: same document violated continuously and extensively on documents beginning with Ex. 336 (C-468) through Ex. 542 (C-1784R3) preceding, although procedure supposedly was set up to prevent recurrence.
523	C-1418	1,2,3,4,5,6	Violation of 10 CFR 50, Appendix B, Criterion X. "On 1/18/79, concrete was batched and placed on Containment No. 1 dome without QC inspection... without a pour card being issued and without QC monitoring...Use as is"
324	M-448		WITHDRAW
385	M-2662	1,2,3,4	Supports welded with wrong material for shims, 20 in Reactor 1 and 5 in Fuel Bldg. "Use as is." "It is recognized that there are no provisions in the ASME code for qualification of welding procedures after the fact" but this is what was done.

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
509	M-2689		WITHDRAW
505	E-81-00088	1 (all we were given)	Unit 1 Control Room, Control Board: "Four safety-related Class IE meters (two diesel generator wattmeters, two diesel generator varimeters) were removed from the installed Main Control Board without procedure; were sent offsite for modification to an unapproved facility; and were re-installed in the control board without procedure. DCA 9714, R.1, was prepared/approved following the work, clearing similar modification of Unit 2 instrumentation. The Quality status of the four instruments and the control board for Unit 1 is indeterminate as a result of the work performed on the safety-related instruments/board as stated above." Reported 3/25/81, open as of the time we received it on discovery.
393	M-3045	1	Hold point violated. Recurring problem.
312	DR 298	1	Ironworkers were cutting a carbon steel electrical cable tray hanger above a stainless steel pipe, which was not covered to prevent contamination. "Note: This is a generic problem."
504	M-2223R4	1,2,3,4,5, 43,44	Pipe supported by equipment nozzles, thereby causing indeterminate stress on equipment in numerous areas.
392	M3039R1	1 (all we were given)	Reactor Bldg. #1: "During removal of Clean Room Structure the Reactor Vessel Head and Control rod drive mechanism became contaminated by foreign material (iron, grit, blasting material, dust, wire, nails and wood chips)." Open as of the time we received it on discovery. To receive final cleaning later.
396	M3181R2	1,2,3,4	Reactor Bldg. #1: Referenced document "states in part that the persistent occurrence of rust may indicate some material or fabricating deficiency. ...attached sketch shows the locations of 4 general areas of non-surface rust on the interior cladding of the Reactor Vessel." Open as of the time we received it on discovery.
404-405	Various minimum wall violations -- WITHDRAW		
406	M-859R2	entire NCR	We have withdrawn all but a couple of typical NCR's to illustrate (along with the information in the NCR log) the extent of the problem.
407 thru 440	Various NCR's WITHDRAW -- Exhibit 406 is example.		
552,389,551,441,442,443,444, 445,446,447,448	Various NCR's WITHDRAW		

CASE EXHIVITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
493	M-3123	Entire NCR	Minimum wall violations (cont.) Recent example of recurring problem.
449 } thru } 459 }	Various revisions of		DCA's which give history and information regarding Minimum Wall Violations problem.
378	M-1082R1	1,3,7	Anchor bolt location will not allow proper positioning of tank nozzles which are out of position by 7", on Safety Injection System Accumulator Tank, Reactor Bldg. #1. ANI comment: "Please be assured that this memo in no way overlooks the fact that there are several non-conforming items involved which I am sure will be handled properly..."
384	M-1327		WITHDRAW
390	M-3015		WITHDRAW
391	M-3015R1		WITHDRAW
544	M-2297		WITHDRAW
545	M-2297R1	1,2	NCR was voided, with note: "In the future, all NCR's will be verified by the QC lead inspector prior to issuance."
508	M-2727		WITHDRAW
550	M-2944S	1,5	O.K. to use class 3 salvaged supports for class 2 supports.
546	M-2602	1,2,3,4,5,6, 7,8	Piping not concentric with penetration sleeve in S.W. Tunnel. No justification for use-as-is disposition is indicated, only that deviation is allowed.
555	M-3049		WITHDRAW
556	M-3049R1		WITHDRAW
554	M-3049R2		WITHDRAW
522	M-535		WITHDRAW
531	M-656		WITHDRAW
532	M-693		WITHDRAW
548	M-2672		WITHDRAW
547	M-2672R1		WITHDRAW
364	C-520	1,35,39,40, 42 thru 45	Large number of interior wall dowels in mat of Safe-guard #2 out of tolerance; interior wall dowels mislocated and sufficient concrete cover cannot be obtained. 1/2" concrete cover for vertical wall bars is acceptable. "For horizontal wall bars a minimum clearance of 3/4" must be maintained." "...potential effects on the structure if each of the 45 dowels identified...were bent to bring them back into tolerance. These bars are so scattered that the bending would not impair the

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
364 (cont.)	C-520		performance of the walls which they reinforce.." Discussion of calculated stresses. Interoffice Memo (page 44): "In the past week, Construction has been reviewing the 5 instances in which reinforcing steel has been omitted in concrete pours. We feel this is a very serious concern and are taking all steps possible to eliminate this as soon as possible in the future..." Set up procedures to eliminate recurrence.
478	C-618R1	1,2,3,4,5, 6,7,9	14 anchor bolts omitted in 810' mat pour of Auxiliary Building. Repaired. Reported 5/7/77, signed off 1/10/79. CAR #7.
517	C-661		WITHDRAW
516	C-661R1		WITHDRAW
515	C-661R2	1,5	Closed out, then reopened. Safeguard #1 pour, 140 Richmond Screw Anchors omitted on south face of wall.
514	C-661R3	1,2,3,4,5	Same as above, except for disposition and reopening. Reported 6/10/77, closed out 4/5/79. CAR not required.
479	C-669	1,2,3,4,5,6, 7,8	Approx. 112 - #9 reinforcing bars required were not installed prior to concrete placement #101-4812-001, made on 5/25/77. Use as is. CAR not required. G&H letter (page 4): "...a series of rebars had been omitted from the reactor cavity concrete between Elevations 812'-0" and 819'-0½". The missing rebars were located adjacent to the neutron detection slots and had been added only recently as a change in G&H drawings 2323-S1-0572, 2323-S1-0574 and 2323-S1-0575...the omission of this additional reinforcement does not in any way impair the structural integrity of the reactor primary shield structure under any postulated loading condition. The additional rebar had been added by G&H as a precaution against cracking which might possibly occur in the vicinity of the neutron detector slots following a LOCA. They provide a means of uniformly distributing accident loading stresses around the slots precluding the possibility of local cracking..." CASE had not recognized the potential tie-in between this NCR and the crack in the Unit 1 base mat or radiation shield until we were doing this analysis; this was because this NCR dealt with the neutron detection slots and the NCR about the crack stated nothing about anything but the base mat. It was not until the testimony in the June hearings that the possibility was presented that the crack could be in the radiation shield. The G&H letter indicates that they were concerned about cracking in that area.

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
479 (cont.)	C-669	8th	Also, Applicants Exhibit 38 which was used in identifying the crack is Drawing 2323-S1-0572, which is one of the specific drawings referenced in the G&H letter. In regard to CAR's (Corrective Action Requests), the Office Memorandum to Bussolini from Mr. Tolson states: "...this mandatory requirement is considered to be redundant and does not contribute materially to the timely investigation and resolution of reportable deficiencies...By copy of this memo to your Houston office we are requesting an immediate deviation to the subject requirement followed by a timely formal revision to the procedure."
524	M-704R1	1,2,6,7,12,18, 19,20,21	Anchor bolt assemblies incorrectly installed in west wall, elevation 812' to 824'4" in Containment 1. Letter from B&R to TUSI (pages 6-7): "In answer to your TUF-3345, we have found many errors in the installation of the 2" anchor bolts required in the 812' to 828'4" elevation in Containment #1...we have 194 nuts on 540 anchor bolts and 540 nuts on 320 anchor bolts. Another big problem is that we have welded many of the 194 nuts to the 320 anchor bolts and the 194 nuts to the 540 anchor bolts without the proper procedure...It appears that we had a very definite communication failure on the part of construction; however, Brown & Root construction, with the help of Gibbs & Hill, QA, and TUSI made the installation very complicated for the Brown & Root supervisors to administer, due to the number of combinations that can be made between bolts and nuts. We, in construction, take the full blame for this very definite misarrangement of proper nuts to bolts." DC/DDA 6, page 12: references a "client imposed hold on welding to anchor bolts..." Use as is. Original copy of NCR not available for file.
519	M-722		WITHDRAW
518	M-722R1	1,2,5	Anchor bolt assemblies incorrectly installed in east wall, elevation 812' to 824'4" in Containment 1. (Same letter as referenced in Ex. 524, M-704R1 above.) CAR #10. Use as is.
482	C-809	1	6 - #10 horizontal additional bars omitted for beam Aux. slab placement. CAR 14. Use as is.
483	C-810	1,8th	9 - #9 and 2 - #4 additional reinforcement bars around elevator shaft door on the 832'-6" mat, Containment 1 Reactor Bldg. omitted, pour #101-7832-003. CAR 14. Repaired. Back-up file page (8th page of NCR): "...design engineer has concluded that if the rebar for the Reactor Building

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
483 (cont.)	C-810		Elevator Shaft as identified in the NCR No. C-810 and DC/DDA-477 had been omitted, cracking of the concrete in this area could have occurred under some bending conditions, such as a seismic event. However, this cracking of the concrete in this area would not have had an effect on the nuclear safety of the plant."
484	C-811	1,4,5	46 #9 rebar dowels on the face of the excess letdown heat exchange room in Reactor Building #1 were omitted. CAR #14. It was not possible to drill all of the re-drilled holes or obtain the specified embedded depth on some of the drilled holes. Determined that the 18" embedment provided sufficient anchorage to develop the strength of the #9 reinforcing bar.
485 534	C-815 C-1314	1,2,3,4	WITHDRAW In Reactor Bldg. #1 elevation 808'-0" @ Az. 180° between columns 9 & 10, specification was violated, due to the installation and removal of shoring and scaffolding in this area. A total of 57 #5 dowels partially embedded in set concrete have been bent and another 10 #5 dowels have been broken off at the concrete. Repaired. Page 3: Design Change Authorization 5080; "Applicable Dwg: 2323-S1-0519, 2323-S1-0520, 2323-S1-0521. Add foundations for the neutron detector well cooling units at El. 808'-0" per the attached figure. See comments regarding potential tie-in with crack, page 32 of this pleading, Ex. 479, C-669. Also, Applicants' Exhibit 23 which was used to identify the crack is Drawing 2323-S1-0519, which is specifically referenced in the DCA on page 3 of this NCR.

WITH REGARD TO EXHIBITS 364 (C-520) beginning on page 31 of this pleading through Exhibit 534 (C-1314) above, THERE IS NO INDICATION THAT ANYONE HAS EVER DONE ANY ANALYSIS OF THE POSSIBLE TIE-IN BETWEEN Exhibits 479 and 534 AND THE CRACK IN THE BASE MAT OR RADIATION SHIELD DISCUSSED IN THE JUNE HEARINGS. NEITHER IS THERE ANY INDICATION THAT ANYONE HAS EVER DONE A STRESS OR SEISMIC ANALYSIS BASED ON THE DELETION OF REBAR, ETC. IN VARIOUS LOCATIONS, ESPECIALLY CONTAINMENT #1. THE DOCUMENTS REFERENCED HEREIN ARE ONLY A SAMPLING OF SUCH DELETIONS.

489	C-1045	1,2	Re: Unit 1 Reactor Building, cadwelder not being tested as required. Page 2, Office Memorandum to file from J. V. Hawkins, TUGCO, 1/8/79: "...due to personnel changes and revised interpretations of the specification the cadweld testing frequency after the initial one and one half years was not totally in compliance with the Technical
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CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
383	M-1270		WITHDRAW
543	M-2295		WITHDRAW
553	M-2993		WITHDRAW
559	M-3163		WITHDRAW
401	M-3443S		WITHDRAW
329	M-459	1,6,7,9	Borg-Warner gate valves discrepancies and damage. Pages 6 and 7 discuss preventive action of the repetitive instances of discrepancies.
331	M-463	1	Similar to above.
333	M-464	1	Similar to above.
334	M-465	1 thru 10	Borg-Warner valves coatings. Revised specification.
335	M-467	1	Similar to above.
337	M-469	1,2,3,4	Borg-Warner valves received without radiographs.
339	M-472	1	Similar to Ex. 335.
343	M-476	1	Similar to Ex. 329.
344	M-477	1	Similar to Ex. 334.
346	M-483	1,5,6,7	Borg-Warner valves received without heat number. Page 5: DDRs 483, 484 & 510 (Issued), 524, 527 & 528 (Not Issued) are all written on valves received from Borg-Warner that do not have the heat number identification marked on the valve stems in a location that is visible after assembly. Pages 6 and 7 discusses corrective action re: (1) missing and/or incorrect documentation; (2) missing nameplate; (3) damaged valves; (4) valve stems not stamped; (5) valve neck, no heat number.
347	M-484		WITHDRAW
348	M-485R1	1	Borg-Warner valves received with incorrect documentation for the heat number of the nuts. Original NCR not available for file.
349	M-486		WITHDRAW
352	M-490	1,5,6	Borg-Warner valves received with incorrect heat number. Page 6: Telephone conversation record between TUSI and Borg-Warner re: Bolt Torquing states: "...there was no written torquing procedures used by Borg-Warner."
354	M-500		WITHDRAW
356	M-502		WITHDRAW
359	M-510		WITHDRAW
362	M-517R1	1,2,3,16,17,18	2/77 audit discovered that Teledyne McKay QA Manual had been extensively revised and re-issued on 5/27/76; not reviewed and approved as required by B&R QA. 4 orders of weld material received on site since that time. "Of the 71,780 pounds received on site, 64,997 pounds have been accounted for and have not been consumed." Page 3: "The cost of testing the filler material

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report No.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
362 (cont.)	M-517R1		to make sure it conforms to the requirements of SFA 5.1, Section II, Part C, Section III of the ASME code and any additional requirements set forth in Brown & Root's Procurement Specification number WE-010 is not justifiable...the deficiency was that Teledyne McKay had revised their QA Manual, and it had not been reviewed and approved by Brown & Root...Teledyne McKay should be placed on Approved Suppliers List and material presently on hold released for construction." Page 16; Interoffice Memorandum, B&R: "As I understand the 'Hold' status of the subject material, it is based solely on the problem with the Q.A. Program and the quality of the material is not really in question. Therefore, since the construction effort has not required this material to meet its schedule, the subject material has not been tested. We have foregone testing in the hopes that the problem with the Q. A. Program would be solved prior to construction needing the material, therefore avoiding the additional testing costs, if they are not required..." Original NCR not available for file.
549	M-2749		WITHDRAW
310	DR-112R1	1 thru 6	Welding multiple problems. Page 3: Meeting with all the welders and fitters working in the auxiliary building and safeguard building "to reemphasize procedures and the importants of being sure that they have the correct weld data card by checking drawing number, line number, and weld number on the card and the print to be sure they are compatible. All welders and fitters were also informed that any continuing errors would result in disciplinary action." 3/29/78. Pages 4 and 5 discusses preventive action. Page 6: Memo to file discusses meeting, main topic of which was "proper documentation of welding. All Q.C. Inspectors were cautioned about signing a hold point on a WDC without checking the information on the WDC against the drawing to assure that the weld joint no., line no., etc., are compatible with the WDC."
360	C-513		WITHDRAW
367	C-532		WITHDRAW
341	M-474		WITHDRAW
513	M-1178		WITHDRAW
512	M-1178R1	1	9/78, Field weld was subjected to water coming from a roof opening just after completion of cover

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

CASE Exhibit No.	Report No.	Pertinent Pages	Brief Description of Pertinent Information
512 (cont.)	M-1178R1		pass of weld. The final weld was very hot when flooded with water. Document violated: Indeterminate. Apparently in 9/78 water hitting a hot weld violated no explicit procedure.
382	M-1225	1	Violations re: hot leg pipe spool & field weld, RB #1.
386	M-2706		WITHDRAW
521	M-2809	1	No IRN issued, rewelding done without a modification package, component support.
388	M-2924		WITHDRAW
558	M-3132		WITHDRAW
397	M-3192(S*)	1,2	"Visual Examination Procedure does not contain inspection requirements to assure the weld surface preparation requirements of MS-100 are met. All Class 1 and 2 PSI/ISI welds previously made and visually examined in accordance with QI-QAP-10.2-7, Revision 1, are included in the scope of this NCR. *NOTE: (S*) If system has been turned over to Start-up for testing, obtain SWA prior to work." Reported 2/4/82. Still open at time we received it on discovery. RB#1.
398	M-3261S	1,2,3	CMC (component modification card) redesigned support on 11/12/81. Rewelding for the redesign commenced on 1/11/82 thru 2/19/82 without issuance of Modification package. Use as is. Reported 3/3/82. Still not signed off when we received on discovery.
399	M-3263S	1	Support was removed per IRN, RB #1, 1/27/82. Rewelding was performed beginning 2/2/82 without issuance of a Modification package. Use as is. Still not signed off as of time we received on discovery.
520	M-3313SR1	1	Welding done on hanger after all welds signed off by QC on 1/9/82 without an IRN or modification package. CAR S-47. Open as of time we received on discovery. Reported 3/16/82.
560	M-3351S	1	RB #2, All welding and material on support signed off satisfactory on 5/16/80. Additional welding and material performed on support from 3/15/82 thru 3/19/82 without Modified documentation. Reported 3/22/82. Use as is. Not signed off as of time we received on discovery.
402	M-82-00171S	1 (all we got)	Safeguard #1, DG #1/HVAC. During Startup testing, one gang linkage tack weld failed on gravity dampers ...2 welds failed on gravity damper gang linkage, one being on the counter-weight arm. These failures seem to be a generic problem and violate sections 3.8.3.2a and 3.8.3.3b of MS-84. Reported 2/26/82. Still open as of time we received on discovery.

CASE EXHIBITS 305 through 507, and 626 through 628 (continued):

<u>CASE Exhibit No.</u>	<u>Report Nos.</u>	<u>Pertinent Pages</u>	<u>Brief Description of Pertinent Information</u>
498 497	M-1802 M-1802R1	1,2 1 thru 28	Numerous problems with component support, Unit 1, Service Water Aux. Feedwater. Revision 1 issued to <u>change document violated from 10 CFR 50 App. B Pt. V & VIII to ASME Section III, and to delete summary</u> which stated: "Exhibits I & II attached show loss of control and failure to conform to sections V and VIII of 10 CFR 50, Appendix B by both craft and Engineering personnel. The drawing control and design change controls as specified in site Procedures has been neglected such that both these documentation packages cannot support these applicable regulatory requirements." Entire second page was retyped. Also changed but not mentioned on Rev. 1 was item II.B., from "Hilti bolt size has been changed on the ABRF" to "Hole spacing has been changed on the ABRF."
387	M-2851	1,2,3	Rust in cross over loop #1 due to water, RB #1, 808'.
557	M-3089	1	RB #1 Pressurizer heaters (3) possibly damaged. "The tips of the heaters at location numbers 60, 62, and 66 appear to have been hammered upon reducing their length about 1/16". Note: The extent of damage is unknown, and it is also unknown if the damage was done on site." Use as is after inspections. 12/18/81; closed out 1/4/82.
499	M-3247		WITHDRAW
308 and 309			WITHDRAW
379			WITHDRAW
460 thru 476			WITHDRAW
526 and 527			WITHDRAW
562 and 564			WITHDRAW
566 thru 568			WITHDRAW
570			WITHDRAW
305	DR 49R1		TWR not initiated for installation of polar crane girders.
306	DDR C-548		Rejectable Cadwelds on Polar Crane Supports.
307	DDR M-549		Surface of weld not in accordance with G&H on Polar Crane Supports.
525	M-82-00239R1		All structural steel on Units 1 & 2 were in violation of AISC requirements.
563	M-1018		Containment spray hangers weld material uncontrolled.
565	M-1102R2		Reactor coolant loops (hot legs) arc strikes.
569	M-1815		More pipe installed than was issued.

CASE EXHIBIT No. 571 - record of all QC inspectors -- WITHDRAW

CASE EXHIBITS 572 through 616 -- ASME information:

After reviewing the information contained in the transcripts and documents already admitted in these proceedings, we have been able to cut down or eliminate many of the ASME exhibits which we had proposed be accepted into evidence. However, since the Board chose not to have the Applicants produce any witnesses from the ASME teams who participated in the October 1981 or January 1982 survey and resurvey, respectively, we believe that the documents indicated herein should be accepted into evidence in order for the record to be as complete as possible under the circumstances. We therefore propose that the following documents be admitted or withdrawn as indicated:

WITHDRAW: CASE Exhibits 572 through 589, 593-594, 597, 599 thru 601.

ACCEPT INTO EVIDENCE: CASE Exhibits 590-592, 595-596, 598, 602 through 616.

CASE
Exhibit
No.

Brief Description of Pertinent Information

- | CASE Exhibit No. | Brief Description of Pertinent Information |
|------------------|--|
| 590 | Letter from ASME to Vurpillat; this exhibit consists of the findings of the ASME team after the October 1981 survey. The findings outlined in this letter point out deficiencies in B&R's QA Manual and the implementation of B&R's QA program. The exhibit is illustrative of the continuing trend of deficiencies which can be traced from the first TUSI/TUGCO audits of B&R QA in the early 1970's until the ASME surveys of 1981 and 1982. |
| 591 | Three-page document; page one is the only one which really needs to be put in. Letter from ASME to Vurpillat, B&R QA Manager. This letter points out that the ASME team believes that a resurvey needs to be conducted and that ASME will allow the certificates to expire and that "new Certificates will <u>only</u> be issued after evaluation of a successful resurvey report." (Emphasis added.) This letter seems to contradict (or at least raise serious questions about the accuracy of) testimony in the hearings by the Applicants' panel that the only reason that the certificates were allowed to expire was because of scheduling problems. |
| 592 | Note to File signed by Vurpillat. Importance lies in Vurpillat's statements that he indicated to Spadafino of ASME that B&R did not disagree with the ASME survey findings, rather, they disagreed with the significance attached to the findings. Also notes that B&R intended to appeal the ASME decision too. Also appears to contradict some of Applicants' testimony. |

CASE EXHIBITS 572 through 616 (continued):

- 595 Letter from B&R to Hartford Steam Boiler, 12/23/81. Lists revisions to the QA manual made between the two ASME surveys; signed by Purdy who was brought in for the purpose of revamping the QA Manual. Virtually every section of the manual was revised.
- 596 Letter to Hartford Steam Boiler (HSB) from Purdy, B&R. Requests (and receives) authorization for B&R to continue ASME code activities (except those that require final stamping) during the period when the certificates are expired.
- 598 Letter from Vurpillat to ASME requesting ASME to reconsider decision to allow certificates and stamp to expire and stating that B&R disagrees with significance of findings (supports that in Exhibit 592).
- 602 ASME Presurvey questionnaire presented prior to ASME resurvey. Delineates responsibilities for Design Specification, stress report (which we believe may contradict other testimony in the hearings).
- 603 B&R response to implementation portion of ASME October Survey. Shows the B&R tendency toward Procedural Revision as a corrective action measure, as opposed to relying on original procedural requirements. CASE will also show how the "actions to prevent recurrence" listed here were not effective. This document also references documentation problems with NPSI with regard to hanger material salvage program, an issue which CASE has brought up through its witnesses and in cross-examination (pages 10 and 10a).
- 604 Exit Critique of ASME Resurvey Team at CPSES - 1/20/82, inter-office memo from Vurpillat to Distribution. Outlines ASME comments on areas where problems still existed in the QA program; also lists the three items which the recommendation for recertification was contingent upon.
- 605 Letter from HSB to ASME re: verification of corrective actions required by the three findings upon which the recertifications were contingent. Letter dated 2/8/82.
- 606 Finding #1 of ASME Resurvey Team; consists of deficiency, proposed corrective action, and summary of verification of actual corrective actions taken. Clearly shows B&R QA Program problems with vendor supplied items, although problem was supposedly taken care of after ASME identified problem. (See Exhibit 607.)
- 607 Letter from Purdy, B&R QA Manager, to Levinson Steel Co. with NCR M3141R1 and NCR 3141 attached. This document is the NCR generated in response to the ASME team's identifying problems with vendor supplied items (i.e., materials were received through AFCO Steel from Levinson Steel who was not on the approved suppliers list). CASE will challenge the adequacy of this corrective action (i.e., adding Levinson Steel to the approved suppliers list, having AFCO revise their QA Manual, etc.).

CASE EXHIBITS 572 through 616 (continued):

- 610 Finding #2 of ASME Resurvey Team; consists of deficiency, proposed corrective action, and summary of verification of actual corrective actions taken. This finding is another indication whereby B&R procured items from a supplier not on the approved list. The corrective action was to verify that the supplier held ASME N stamp and to then add them to approved suppliers list. Again, raises questions about how many other vendor items were procured by B&R from non-approved suppliers that were not caught by either ASME or B&R QA program, neither of which are designed to catch each and every problem.
- 611 Finding #3 of the ASME Resurvey Team; consists of deficiency, proposed corrective action, and summary of verification of actual corrective actions taken. Finding relates to welding materials received from vendor which were receipt inspected and accepted but not identified and documented as having had the receipt inspection. The material was scrapped (see CASE Exhibit 613). However, as a result of this finding, it was necessary to retrain receiving inspectors in proper use of procedures. Seems to be somewhat late in the game to be training inspectors in receiving inspections (Feb. 1982).
- 613 NCR M-3145; NCR dealing with above-cited welding material; scrapped. This exhibit also consists of documentation which verifies that three inspectors had to receive specialized training in material marking requirements. Importance of this is to show that QC Inspectors had to be retrained in such activities at such a late time in the construction phase.
- 608 NCR M-3152. This is another NCR generated in response to Finding #1 of the ASME resurvey team. In this instance, materials received from Levinson Steel through AFCO had to be scrapped because they violated code requirements (i.e., were not on approved suppliers list). Such materials were for Class 1 component supports.
- 609 NCR M-3153R1, NCR M-3153. Another NCR apparently generated as a response to Finding #1 of the ASME Resurvey Team. This document also consists of Purdy letter to Levinson Steel (plus attachment) which approves Levinson Steel for the suppliers list. In this instance, material for Class 2 and 3 hangers was used. (Materials for Class 2 and 3 supports received from Levinson were dispositioned "use-as-is".
- 612 NCR M-3194, supersedes NCR M-3145 (see CASE Exhibit 613 above). Clarifies disposition of M-3145 and notes that ANI must inspect materials in scrap area prior to signing off on inspection report.
- 614 Letter from ASME (3/19/82) returning ASME certificates. Letter also indicates that as of that date two items, Control of Construction Processes and Identification and Control of Materials and Items, have not yet been completed. (For further information on these items, see CASE Exhibit 603, Item D, pages 6 and 7, Item F, pages 10 and 10a). Also noted in this letter are problems with welding procedure compliance; one of the issues CASE has raised throughout the hearings.

CASE EXHIBITS 572 through 616 (continued):

- 615 CAR (Corrective Action Report) S-22 regarding repeated violations of QC hold points. The corrective actions consist of merely instructing employees in the importance of hold points rather than going back and analyzing the importance of missing these hold points.
- 616 CAR S-45 dated 2/5/82. This CAR deals with major violations of inspection and work procedures. The importance of this document lies in the fact that the violations listed were discovered at that late date and also that the corrective action partially consisted of creating new procedures for inspection criteria and documentation.

CASE EXHIBITS 617 through 622:

- 617 Report from TUGCO to NRC re: Inadvertent Omission of Shear Tie Reinforcing Steel from the 32nd Lift of Unit 2 Reactor Containment Building.
(pages 1-4 & cover page only needed)
- This report is distinctively illustrative of the "use-as-is" syndrome which prevails at Comanche Peak. This reinforces our evidence that the integrity of the Comanche Peak plant was repeatedly compromised throughout the construction phase. We intend to use this document along with others to show that engineering analyses often relied on the "conservative nature of the original design" to justify their "use-as-is" or "no corrective action required" dispositions. CASE believes that the Board should examine the cumulative nature of these dispositions and consider at what point is this conservatism exceeded? What effect will all of these construction compromises have on the overall integrity of the plant? There is no documentation in the record that Applicants have ever analyzed this aspect.

In addition, CASE will use this document as further evidence of an "apparent QA program breakdown" (to use the report's own terms). This "breakdown" was facilitated by the common failure of QA/QC personnel to adequately implement procedural requirements; equally as common were resultant "preventative actions" -- organizational changes and procedural revisions.

CASE contends that this document fortifies its position that the CPSES QA/QC program has undergone constant revision -- both organizationally and procedurally -- for years. As stated in this document, construction and engineering supervisory personnel were "in the process of reviewing established quality assurance systems and procedures to verify that they adequately address CPSES quality assurance program requirements." (Emphasis added.) This report is dated 9/17/79. The implementation of the construction QA/QC program at CPSES has proven in practice to be a mismanaged charade of trial and error totally devoid of procedural commitment. CASE Exhibit 617 provides obvious support to this position.

CASE Exhibit 617 further provides evidence that QC personnel policies are not implemented in a uniform manner, resulting in the unfair termination of some QC personnel and the continued employment of other QC personnel who have contributed to major construction errors. (See page 3, paragraph 2.)

CASE EXHIBITS 617 through 622 (continued):

617 (cont.) Although the Board has indicated that the raising of questions does not constitute substantive proof, this report raises significant questions which CASE believes must be examined in the evaluation of the QA/QC program at CPSES. The fact that these reinforcing ties were discovered at the upper elevation of approximate 993-997' and resulted in the issuance of a new construction instruction "to verify installation of reinforcing steel on RCB No. 2 in accordance w/specified requirement," raises serious doubts about the adequacy of QA/QC verification for the remaining feet below of containment building 2 as well as Containment Building 1.

The continuing failure of the QA/QC program provides no assurance that other construction deficiencies were even detected, much less corrected.

CASE Exhibit 617 is extremely representative of the typical failures and deficiencies which plague the QA/QC program at Comanche Peak.

618 WITHDRAW

619 TUGCO office memorandum from G. Wayne Parry (TUGCO Site Surveillance Supervisor) (page 1 to A. Vega. (We are interested only in page 1; can WITHDRAW pages 2 thru 31.)

only) Provides evidence to support CASE's assertion that manpower requirements were not always adequate and that as late as 10/1/81, it was necessary to set up 'a scheduling system which will ensure QA coverage of the CPSES construction program.' (Emphasis added.) CASE EX. 619 also provides further evidence to support the contention that a considerable amount of reorganization and preparation was necessary prior to both the October 1981 and January 1982 ASME surveys.

620 CPSES Quarterly Report on QA Department and QA Program Activities for the First Quarter of 1982.

The significance and relevance of this document rest both in its intended purpose "to provide sufficient data to aid in management's evaluation of the CPSES QA program effectiveness" and in its time frame, January-March 1982.

The information contained in this document lends support to many of the points CASE intends to make in its proposed findings of facts and conclusions of law, including but not limited to the following:

(1) The constant revision of the QA procedures and instructions prevented the QA/QC program from being adequately implemented and followed by management, QA/QC, and Construction personnel alike.

(2) Internal, external, and vendor audits for the 1st Quarter of 1982 reveal deficiencies which have been recurring since the inception of the QA/QC program at Comanche Peak.

(3) Trend evaluations performed on deficiency control documents reveal that recent trends in both construction and engineering type problems are mere extrapolations of past deficiency trends, indicating that corrective actions taken on previous deficiencies did not prevent recurrence.

CASE EXHIBITS 617 through 622 (continued):

620 CASE submits that this quarterly report will serve to assist the Board (cont.) in making its own evaluation of the CPSES QA program effectiveness for the 1st Quarter of 1982, and will also depict the historical nature of QA/QC program failures.

621 Letter from Gibbs & Hill to Chapman, Manager, Quality Assurance, TUGCO, re: Quality Assurance Audit TGH-14. This document points out a discrepancy which was identified with regard to the size of control wiring for Fire Detection Panels. Initially the vendor, Alison, was given instructions that nothing less than 14 awg could be used. Alison replied that they did not use anything larger than 18 awg; the specification was changed to read "nothing less than 18 awg" could be used. Alison stated their intent to use 22, 18, and 14 awg. Subsequently Alison indicated that size 22 awg control wire was being used in the panels for Comanche Peak.

The corrective action on this item was that the vendor submitted a deviation request; G&H evaluated it and accepted the deviation and issued a modification to the specification. It appears to CASE that this will render the wiring for the Fire Detection Panels a fire hazard itself.

622 withdraw

CASE EXHIBIT 623 - TUGCO QA - Analysis of Class 1 & 2 Pipe Weld Trends, Covers January 1979 to February 1980. Indicates high rate of rejection for welds, types of weld rejections, graphs indicating % rejected etc., and rejects by Defect Type (page B-9), etc. Supports some of CASE's contention.

CASE EXHIBIT 624 - B&R CAR (Corrective Action Request) S-6. Details extensive problems with truck concrete water meters being out of calibration. Supports CASE's contention.

CASE EXHIBIT 625 - B&R CAR S-8 - Details some of problems with compressive strength of concrete not complying with requirements. Supports CASE's contention.

CASE EXHIBITS 626, 627, and 628 - Logs of Deficiency Reports, DDR's (Deficiency and Disposition Reports), and TUGCO NCR's (Nonconformance Reports). Essential that these be admitted into evidence in order to enable us to delete the NCR's etc. as indicated in discussion of Exhibits 305 through 570 preceding.

CASE EXHIBITS 629 through 645 - Applicants' Design/Construction Significant Deficiency Analysis Reports, items which Applicants felt were potentially reportable under 10 CFR 50.55(e).

The SDAR's (Significant Deficiency Analysis Reports) represented by CASE Exhibits 629-645 span a time period from 5/22/79 to 1/22/82. CASE obtained these

CASE EXHIBITS 629 through 645 (continued):

documents during discovery in response to interrogatories regarding reporting deficiencies under 10 CFR 50.55(e). We are offering them into evidence exactly as they were provided by the Applicants; there were no other attachments besides those few which are attached.

CASE believes that the record in these proceedings must not be deprived of any of these Significant Deficiency Analysis Reports. Assertions by the NRC Staff and the Applicants that the reporting of various deficiencies renders the QA/QC program effective notwithstanding, CASE asserts that the mere fact that problems are reported to the NRC does not in any way deem the QA/QC program to be successful, especially in light of the interpretation of NRC regulations by NRC Staff witness Taylor. (We will discuss this further in our proposed findings of fact and conclusions of law.)

In coming to its decision, it is necessary for the Board to examine not only whether or not an item was reported but also why the deficiency occurred in the first place, what corrective actions were taken, and if those corrective actions and preventative measures were effective in precluding recurrence of the deficiency.

Taken as a group, the SDAR's graphically demonstrate many of the points CASE intends to make in its proposed findings of fact and conclusions of law; e.g., repeated QA program breakdowns, deficiencies discovered after QA acceptance, deficiencies which could have gone undetected (as indicated on the reports), and deficiencies which, if undetected, could adversely affect the safe operation of the plant. CASE will draw examples from some of the specific problem areas contained in these reports to show how similar deficiencies emerged even after reporting them to the NRC.

CASE EXHIBITS 629 through 645 (continued):

CASE will also utilize particular SDAR's to support the allegations of several of our witnesses and to refute the testimony of both the Applicants' and NRC Staff witnesses. Of particular interest in this set of documents is SDAR I.D. No. 039 (CASE Exhibit 633). This report deals with pipe supports in the Diesel Generators for both units. The description of deficiency on this report states: "Pipe supports for the subject equipment do not meet the requirements of ASME III, Subsection NF as required by Purchase Order CP-0034." Continued under the Preliminary Engineering Analysis, it states: "No assurance that pipe hangers would perform their design function under a postulated seismic event." This report was initiated by TUSI on 9/25/80.

CASE believes that these documents are clearly pertinent and absolutely necessary to the evidentiary record. The failure of the Applicants and the NRC Staff to include candid and detailed information about these problem areas should not be used to render the record in these proceedings incomplete and inaccurate by their omission. We urge that the Board accept these documents into evidence.

CASE EXHIBITS 646 through 649 - TUGCO/TUSI CPSES QA Nonconformance Reports

These reports are similar in nature to Exhibits 629 through 645 (see discussion above). They include vendor welding technique and sequence problems which did not allow sufficient access to make 100% full penetration welds on polar crane support brackets. Only one of the four reports has a signature under Verification of Corrective Action (at least as of the date we received them on discovery), although they all were initiated in 1977. We believe that these should also be admitted into evidence.

CASE EXHIBITS 650 and on: These Exhibits are testimony and cross-examination exhibits which have either been addressed elsewhere (see CASE's 10/9/82 Response

CASE EXHIBITS 650 and on (continued):

to Board's 9/22/82 Memorandum and Order for Briefs re: Necessary Documents and Information) or have already been admitted into evidence.

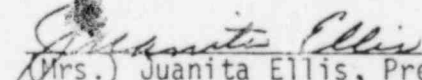
SUMMARY

We have made a good-faith effort to comply with the Board's directives and have cut down drastically on the number of pages and the number of documents which we are requesting be admitted into evidence. We believe that it is essential that our offering be accepted as a total package in order for us to be able to properly present our proposed findings of fact and conclusions of law and for the record in these proceedings to be complete.

We therefore move that the Board accept into evidence the requested documents from CASE's Exhibits 190A through 649.

As we have previously indicated, we initially had thought we would make our entire case on documents and cross-examination. Although the testimony of CASE's witnesses and the testimony of other witnesses in these proceedings has allowed us to cut back the number of documents necessary to make our case, we will still base a large part of our case on these documents. We believe it is absolutely necessary that the Board admit them into evidence.

Respectfully submitted,



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LISTING OF NCR's, etc. IN ORDER BY CASE EXHIBIT NUMBER:

X = WITHDRAW

- = REQUEST BE ADMITTED INTO EVIDENCE (pages as listed herein only)

✓ = ALREADY ADMITTED INTO EVIDENCE (Exhibit 495 only)

- 305 DR 49R1 TWR not initiated for installation of polar crane girders.
- 306 DDR C-548 Of 2 shipments of Polar Crane Supports, 5 were rejectable Cadwelds.
- 307 DDR M-549 " " " " " " " " surface of weld not in accordance with G&H.
- X308 DDR M-549 Rev. 1 & 2 Welds have course ripples or grooves, overlaps and ridges, slag.
- X309 DDR C-552 2 shipments; 4 reject Cadwelds; slag in the tapholes of the sleeves.
- 310 DDR 112R1 PW-12&15 on spool 5Q3 of dwg.
- 311 DR 214 No record that item was given a functional check before activated.
- 312 DR 298 Ironworkers cutting stainless steel pipe which was not covered for contamination.
- X313 DDR C-423 Discontinuities and pinholes existing in containment liner finish coat.
- 314 DDR C-424, R2 No slump was determined on the second 50 yard increment of the pour.
- X315 C-427 Aggregate gradation testing for stone in bin has 2 set failures.
- 316 C-437 Method of reblending aggregates is not within the scope.
- X317 DDR C-438 28 day strength test results for shotcrete pour fall below minimum.
- 318 DDR C-440 Waterwell #1 which is used for concrete curing water, failed to meet req.
- 319 C-443 R1 Dry-pack was used rather than grout as specified in cited document.
- X320 C-444 Shotcrete pour in pipe tunnel not cored and tested for compressive strength.
- 321 C-445 Equipment on attached list was found to be "out-of-calibration".

CASE EXHIBIT NO.

- 322 DDR C-446 gravel used for concrete production prior to completion of gradation test
- X323 DDK C-447, R1 average of 6 shotcrete strength tests is less than 3.000 PSI as required
- X324 DDR M-448 weld insert received with papers not showing grade & not mentioned in report
- 325 DDR C-449 compressive strength tests representing concrete placements do not comply
- X326 DDR C-450 stone in mix violating cited document.
- X327 DDR C-453 gradation testing for gravel has set failure; may not be used in concrete
- 328 DDR C-457 compressive strength tests represent concrete placements that do not comply
- 329 DDR: M-459 gate valve was received with a damaged weld prep area.
- X330 C-460 air immediately adjacent to concrete fell 40° F in 24 hours violating document
- 331 M-463 gate valve received with the handle stem of the gear operator broken.
- X332 C-429, R1 average of 6 shotcrete strength tests is less than required by cited document
- 333 M-464 swing check valve received with incorrect heat number stamped on leaf. 20 nuts
- 334 M-465 (16) valves received; (8) without coating on the nuts.
- 335 M-467 (6) swing check valves received without coating on the nuts.
- 336 C-468 defective concrete was discovered upon post pour inspection; rebar was exposed
- 337 M-469 (3) swing check valves received without the radiographs.
- X338 M-471, R1 welding electrodes stored in "out of calibration" stationary ovens.
- 339 M-472 (3) gate valves received without coating on the nuts.
- X340 C-473 R-1 (3/4 load) was applied to concrete compressive strength test in violation
- X341 M-474 (204 lbs.) covered welding electrode was received without conformance certificate
- X342 M-475 weld rod oven not functioning properly.
- 343 M-476 gate valve received with a broken oiling assembly.
- 344 M-477 (2) swing check valves received without coating on the nuts.
- 345 M-480 accuracy of thermometer was found defective.
- 346 M-483 gear operated gate valve received without heat number stamped on stem of valve
- X347 M-484 gear operated gate valve received without heat number stamped on stem of valve
- 348 M-485-R1 swing check valve received with incorrect documentation for heat number of valve
- X349 M-486 swing check valve received without coating on nuts.
- 350 G-487 pressure gauges cannot be recalibrated due to calibration stop work order.
- 351 C-488, R1 concrete placement with violated air content allowed to be deposited in slab
- 352 M-490 gate valve received with incorrect heat number.
- 353 C-499 field cured cylinders compressive strengths that do not comply with requirements
- X354 M-500 swing check valve received with a damaged weld prep.
- X355 M-501 temperature check made of stationary rod ovens; cancelled.
- X356 M-502 motor operated gate valve arrived w/bent manual shift handle; dent in weld prep
- 357 E-503 maintenance was performed with a megger that was out of calibration certificate
- X358 C-507 gravel was not tested for gradation prior to its use.
- X359 M-510 (2) motor operated gate valves were received without the heat number.
- X360 C-513 low test result was a result of a bar failure.
- 361 C-515 temperature violation in air immediately adjacent to concrete.
- 362 M-517, R1 audit revealed that Teledyne McKay QA Manual had been extensively revised
- 363 C-518 temperature violation in air immediately adjacent to concrete.
- 364 C-520 large number of interior wall dowels are out of tolerance.
- 365 C-529 field cured cylinder compressive strengths that do not comply.
- X366 C-530 field cured cylinders were found to be completely uncovered, dry, and exposed
- X367 C-532 (9) Cadwelds were made in violation.
- X368 C-542 wall has developed a hairline fracture of the top NW corner that continues down
- X369 C-533 curing room with cylinders stored had a temperature violation.
- X370 M-538 (3) units sent to off-site facility for recalibration; extensive work required
- X371 M-539 meter was found to have 4% error factor.
- X372 C-545 slab was exposed to considerable pedestrian traffic, carpenter crew, etc.
- X373 C-546 Zeiss and Dietzgen Theodolite found to be out of calibration.
- X374 C-547 exterior side of wall rebar has been exposed due to method of excavation.
- X375 C-554 surface defects on all concrete placements are not being repaired immediately after form removal. There are concrete placements that have been made in excess of 8 months with surface defects which have not been repaired.

CASE EXHIBIT NO.

NCR:

- X376 M709 electrical lines and hydraulic hoses were scorched as a result of falling slag.
- X377 C-835 top corner of columns have been cracked during the process of installing braces.
- 378 M-1082R1 conflict in dwgs; bolt location won't allow proper position of tank nozzles.
- X379 M-1138 cleanliness QC Hold Point on leak chase channel prior to weld out for FW's.
- X380 E-1212R1 LB fitting and insulation enclosing conductor inside of LB were damaged.
- X381 E-1212 " " " " " " " " " " " " " " " "
- 382 M-1225 spools have concrete, water, and dirt accumulation.
- X383 M-1270 valve dwg. was reworked and installed; the removed damage was not recorded.
- X384 M-1327 outlet nozzle has indications in the base material.
- 385 M-2552 material welded as shims does not fall under listed requirements.
- X386 M-2706 valve face has been damaged due to excessive grinding while cutting out.
- 387 M-2851 rust noted in cross over loop on spool.
- X388 M-2924 major weld repair completed to remove recorded defect; designation is incorrect.
- X389 M-2980R1 spool has minimum wall violation.
- X390 M-3015 damaged nozzle on Steam Generator.
- X391 M-3015 R1 damaged nozzle on Steam Generator.
- 392 M-3039 R1 reactor vessel head and control rod drive mechanism were contaminated.
- 393 M-3045 established ANI hold point for final PT on weld 33A has been by-passed.
- X394 M-3077 R1 arc strike has left 3 pin-holes penetrating solenoid casing.
- X395 M-3077 " " " " " " " " " " " " " " " "
- 396 M-3181 R2 (4) areas of nonsurface rust on the interior cladding of the Reactor Vessel.
- 397 M-3192(S*) Visual Examination Procedure(*) if Start-up for testing, obtain SWA prior to start-up.
- 398 M-3261S rewelding commenced without issuance of Modification Package.
- 399 M-3263S " " " " " " " " " " " " " " " "
- X400 M-3333S Arc strike on expansion joint.
- X401 M-3443S RTD-Scoop will not meet minimum engagement requirements.

TUGCO NCR:

- 402 M-82-00171S During startup testing, (3) welds failed on gravity dampers.
- 403 C-82-00475 Dwg. calls for Class "A or C"; blocks were poured with Class "F".

MINIMUM WALL VIOLATIONS:

- X404 M-859
- X405 M-859 R1
- 406 M-859 R2
- X407 M862
- X408 M862 R1
- X409 M862 R2
- X410 M868
- X411 M868 R1
- X412 M-868 R2
- X413 M-890
- X414 M-890 R1
- X415 M-908
- X416 M-908 R1
- X417 M-910
- X418 M-910 R1
- X419 M-916
- X420 M-916 R1
- X421 M-924
- X422 M-924 R1
- X423 M-926
- X424 M-926 R1
- X425 M-947

CASE EXHIBIT NO.

MINIMUM WALL VIOLATIONS (continued):

- X426 M-947 R1
- X427 M-951
- X428 M-951 R1
- X429 M-953
- X430 M-953 R1
- X431 M969
- X432 M1249
- X433 M-1249 R1
- X434 M-1398
- X435 M-1398 R1
- X436 M-1649
- X437 M-2588
- X438 M-2588 R1
- X439 M-2889S
- X440 M-2923
- X441 M-2995
- X442 M-3055
- X443 M-3026 R1
- X444 M-3047
- X445 M-3047 R1
- X446 M-3079
- X447 M-3086
- X448 M-3119

MINIMUM WALL VIOLATIONS (DCA 1560, etc.):

- 449 DCA (Design Change Author tation) 1560, 4/24/78
- 450 DCA 1560-Rev. 1, 6/1/78
- 451 DCA 1560-Rev. 2, 6/20/78
- 452 DCA 1593-Rev. 1, 7/26/78
- 453 DCA 1560-Rev. 3, 7/26/78
- 454 DCA 1521 Rev. 1, 12/20/78
- 455 DCA 1559, Rev. 2, 5/16/79
- 456 DCA 1560, Rev. 4, 5/16/79
- 457 DCA 2109, REv. 2, 5/16/79
- 458 DCA 5551, Rev. 2, 10/19/79
- 459 DCA 9457, 1/13/81

- X460 CR I-2860 ball gauge violations.
- X461 DDR C-458 Cadweld was fired directly below the Unit 1 personnel air lock; violation
- X462 NCR E-1208 Personnel air lock.
- X463 DDR C-155 Discrepancies on Welder Performance Qualification Test Reports.
- X464 DDR C-222 Approximately 20% of weld was made by QC; violation is he can't inspect.
- X465 NCR M1109 Weld bead nonconformance.

- X466 DR 124 list of discrepancies concerning entries made on Weld Data Cards.
- X467 M927 reworking of seam welds revealed slag entrapment and lack of fusion.
- X468 M-1109 R1 bead width exceeds maximum allowable on weld.
- X469 M-1322 Arc strike in weld.
- X470 M-2638 End prep for Thermoweld installation on ITT Grinnell spools does not conform
- X471 M-3320 welding was performed on hanger without issuance of modification documentati
- X472 M-2966 does not give sufficient information as to grade of weld plate.
- X473 M1432 Arc strike.
- X474 M1432 R1 Arc strike.
- X475 M-2721 welds to spool were done without QC acceptance of cleanliness and alignment.
- X476 M-3361 " " " " " " " " " " " " " " " "

CASE EXHIBIT NO.

NCR:

- X477 C606 sand was out of tolerance by 5.9% on the first 6 cubic yards of mortar.
- 478 C610R1 (14) anchor bolts were omitted in the pour.
- 479 C-669 Approx. 112 bars were not installed prior to concrete placement.
- 480 C-759 bars were subjected to load stresses after the pour.
- X481 C-805 honeycombs were found in the pour.
- 482 C-809 (6) bars were omitted in aux. slab.
- 483 C-810 (11) bars were omitted around the elevator shaft door.
- 484 C-811 (46) rebar dowels were omitted in heat exchanger room in Reactor Building.
- X485 C-815 (10) dowels were left out of pour.
- X486 C-837 concrete consolidation violation.
- X487 C-833 "Cold Weather" violation.
- X488 C-968 mortar had a water/cement ratio in excess of the mix design.
- 489 C-1045 Cadwelder was not tested the required one (1) time within first (10) shots.
- 490 C-1112 (17) areas of defective concrete were found upon form removal on placement.
- X491 C-1110 Coating exhibited poor adhesion, impact resistance, peeling and improper curing.
- 492 C-1170 honeycomb was discovered on the Chilled Water Surge Tank in the Auxiliary Bldg.
- 493 M-3123 minimum wall violation.
- 494 M-2952 serrated sealing surface on flange face has numerous arc strikes.
- X495 M-986 (11) structural steel material samples submitted for conformity failed specs.
- X496 C-2269 grout did not meet specified compressive strength.
- 497 M-1302R1 revision of support traveler; craft personnel failed to follow design change
" " " " " " " " " " " " " " " " "
- 498 M-1302R2 " " " " " " " " " " " " " " " " "
- X499 M-3247 spool was installed prior to flush.
- 500 C-1335 fire caused by fuel spillage caused concrete to spill in an area 8' x 9' x 3/4"
- X501 C-1006 cement mortar cubes were not broken at 3 days as required because of evacuation.
- 502 C-1309 defective concrete penetrated the full thickness of the wall.
- 503 C-1367 (12) areas of defective concrete in the bottom of the slab and beams.
- 504 M-2223 pipe supported by equipment nozzles causing indeterminate stress on equipment.
- 505 E-81-00033 (4) meters sent offsite for modification to unapproved facility w/o procedure.
- 506 C-1303 upon form removal defective concrete was discovered in several locations.
- 507 C-1294 concrete was not consolidated in areas of heavy rebar congestion.
- X508 M-2727 pipeline nonconformance and base metal defect.
- X509 M-2689 verification of gasket material for traceability was not maintained.
- X510 C-1296R1 notch effect observed on 40 bars in wall of compartment 3 Reactor Container
" " " " " " " " " " " " " " " "
- X511 C-1296 " " " " " " " " " " " " " " " "
- 512 M-1178R1 field weld subjected to water coming from a roof opening.
" " " " " " " " " " " " " " " "
- X513 M-1178 " " " " " " " " " " " " " " " "
- X514 C-661R3 (140) Richmond Screw Anchors were omitted on the south face of wall 2-S.
" " " " " " " " " " " " " " " "
- 515 C-661R2 " " " " " " " " " " " " " " " "
- X516 C-661R1 " " " " " " " " " " " " " " " "
- X517 C-661 " " " " " " " " " " " " " " " "
- 518 M-722R1 anchor bolt assemblies have been incorrectly installed in the east wall.

CASE EXHIBIT NO.

- X559 M-3163 (Valve ASME code plate and ID plate lost)
- 560 M-3351S (Welding and material performed on support without modified documentation)
- 561 G-589 (Numerous water meters out of calibration)
- X562 M-621R2 (Teflon tape used on Monroe Hydraulic shock suppressors)
- 563 M-1018 (Containment spray hangers weld material uncontrolled)
- X564 M-1038 (Reactor vessel nozzle weld end preparation)
- 565 M-1102R2 (Reactor coolant loops (hot legs) arc strikes)
- X566 M-1072 (Steam generator (hot leg) nozzle weld end preps)
- X567 M-1023 (15 studs not installed in north transfer canal of fuel building)
- X568 M-1401R1 (Grind occurred while removing arc strike; documentation incomplete)
- 569 M-1815 (More pipe than was issued)
- X570 M-269 (Welding documentation packages issued and worked w/o ANI preliminary review)
- X571 (This is a record of all QC inspectors)

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

'82 OCT 22 A10:39

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)

X
X
X
X
X
X
X

Docket Nos. 50-445G & SERVICE
and 50-446 BRANCH

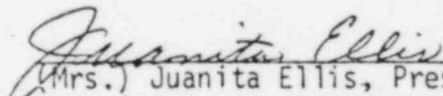
OFFICE OF SECRETARY
& SERVICE
BRANCH

CERTIFICATE OF SERVICE

By my signature below, I hereby certify that true and correct copies of _____
CASE'S RESPONSE TO BOARD'S DIRECTIVE REGARDING CASE EXHIBITS _____

have been sent to the names listed below this 18th day of October, 1982, by:
Express Mail where indicated by * and First Class Mail elsewhere.

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