



Transcript of Proceedings NUCLEAR REGULATORY COMMISSION

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John S. [Signature]
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BRIEFING ON INVESTIGATION OF QA-QC PROBLEMS
AT SOUTH TEXAS NUCLEAR PROJECT

(Closed to Public Attendance)

Tuesday, April 15, 1980

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1 UNITED STATES OF AMERICA
2 NUCLEAR REGULATORY COMMISSION

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4 BRIEFING ON INVESTIGATION OF QA-QC PROBLEMS
5 AT SOUTH TEXAS NUCLEAR PROJECT
6 (Closed to Public Attendance)
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8

9 Room 550 East-West Towers
10 Bethesda, Maryland

11 Tuesday, April 15, 1980

12 The Commission met, pursuant to notice, at 2:55 pm.
13 John F. Ahearne, Chairman of the Commission, presiding.

14 PRESENT:

15 Chairman Ahearne
16 Commissioner Hendrie
17 Commissioner Bradford

18 ALSO PRESENT:

19 W. Dircks
20 K. Cornell
21 M. Malsch
22 J. Murray
23 V. Stello
24 C. Seyfrit
25 W. Hayes
R. Herr
H. Phillips
R. Shewmaker
H. Thornburg
R. Fortuna
Seidel
J. Hoyle

P R O C E E D I N G S

1
2 CHAIRMAN AHEARNE: The Commission meets in a close
3 meeting.

4 MR. STELLO: We are here to discuss with you this
5 afternoon the results of our enforcement difficulties for
6 the construction activities in the South Texas Project.

7 There is a long history associated with the
8 South Texas Project that goes back, I guess a couple of
9 years ago, and even some recent allegations we have
10 received as recently as day before yesterday.

11 So that the issue on the advisability on the
12 problems involved with the quality control at South Texas
13 has been quite high. It has been the subject of considerable
14 news media interest, it was on the national television
15 and the problems have been ---

16 CHAIRMAN AHEARNE: This was also a result of
17 Mr. Gonzalez's amendment wasn't it?

18 MR. STELLO: Mr. Gonzalez did request an FBI
19 investigation into the issue.

20 CHAIRMAN AHEARNE: I think it is also what
21 led him to put in an amendment making it a crime to try to
22 impede into quality control inspectors.

23 MR. STELLO: It wasn't clear.

24 COMMISSIONER BRADFORD: Do you look on this as
25 one continuing investigation or have there been 5 or 6

1 different investigations?

2 MR. STELLO: There have been 5 or 6 different
3 investigations, and there are still some on-going. OIA
4 for example, was still looking in to some of the issues as
5 the result of the investigations in the effort with the
6 FBI work, and the results of the work that the Region did,

7 The briefing, and the purpose of the briefing, to
8 get that up front, is I think at the point we are going to
9 decide: what's the appropriate enforcement action, based
10 on what we have found as documented in the draft report
11 that we sent to you. We think that we are at the point
12 now where it is time to take some sort of action.

13 We are going to be describing to the Commission,
14 at least in general terms what course of action seems to
15 be warranted, based on what we understand today. I will
16 make the point that things continue to move, and we continue
17 to get more information, and as this new information comes
18 in, we might decide to change our minds and take a different
19 course of action, but based on what we know today, to
20 stop shop today, hopefully we could conclude to brief
21 you as to what we understand and can describe to you the
22 kinds of enforcement action we feel is appropriate, and
23 hopefully, have some sort of agreement, at least in principle
24 that this is the correct way to go or if we need to do more,
25 to have some understanding of what that more might be.

1 With that introduction, let me ask Bob to go
2 through the briefing now. I would prefer not to use
3 that overhead, which I think would be a distraction to
4 everybody, and to just pass out copies of the slides if
5 that would be easier.

6 CHAIRMAN AHEARNE: I'm presuming the people back
7 here have copies?

8 MR. SHEWMAKER: I think we have enough. We
9 brought 25.

10 CHAIRMAN AHEARNE: Bob, you are?

11 MR. SHEWMAKER: Bob Shewmaker.

12 Okay, the Attachments you got that is Appendix
13 5, in the advanced copy of the report that we sent, we
14 didn't have a clean copy of that document when it was
15 printed.

16 CHAIRMAN AHEARNE: I'm going to suggest that
17 Mr. Stello could identify for I&E a certain kind of
18 marking pencile that would be able to be xeroxed and be
19 legible. I find that so far, this is a second in a series
20 of documents in which the outlines of things are
21 unreadable in them.

22 MR. STELLO: Some of the documents we get are
23 marked that way and it becomes difficult. I think the
24 previous documents you are referring to were copies that
25 we received from others, and that's the way they were marked

1 MR. SHEWMAKER: Okay, the purpose of the
2 investigation was ticked off, the most recent investigation
3 was one of two fold. First, was to address the allegations
4 that dealt with harassment/intimidations of quality control
5 inspectors at the site, and the allegations basically were
6 that the construction personnel were causing this pressure
7 and creating these situations.

8 CHAIRMAN AHEARNE: The allegations came through
9 from where?

10 MR. SHEWMAKER: They came from one individual
11 on the 2nd of November, and those were characterized and
12 broken down into 12 specific allegations.

13 CHAIRMAN AHEARNE: Did that individual represent
14 himself, or did he represent a group of quality controllers.

15 MR. SHEWMAKER: He represented himself, but in
16 the allegations that he made, it covered things that had
17 happened to other people. So he had characterized,
18 generally what he felt had been going on and the things
19 that he had heard and talked to other people.

20 MR. STELLO: Do you mean [REDACTED]

21 MR. SHEWMAKER: No. The most recent is ---

22 MR. STELLO: Because there are two Februarys.
23 The first was in February 1977, was by [REDACTED] and we are
24 going to cover that a little bit and the background. The
25 most recent ones that were behind the present investigation

1 was February of this year. Maybe we ought to use some
2 of these names so we can keep the two separated.

3 MR. PHILLIPS: My name is Phillips, I'm the
4 Resident Inspector for South Texas. Just a little bit
5 of clarification.

6 This individual did represent four other
7 inspectors.

8 CHAIRMAN AHEARNE: Thank you.

9 MR. SHEWMAKER: Maybe we can add in right
10 here, the total of the previous investigations has been
11 something, 11 separate investigations that have been carried
12 on before this big investigation was kicked off this
13 November. So there was a series and we will go in to the
14 background.

15 The second part of the investigation was to
16 review the current, at the time, November of '79,
17 effectiveness of the quality assurance program as it was
18 being implemented at the site. The concept there was
19 pick enough areas where work is currently going on, look
20 and see if the QA program is functioning, we have got to
21 get sufficient sampling and enough detail to be able to
22 draw a conclusion.

23 So those were the two basic goals and aims of
24 the investigation.

25 What we are going to do now is give you a brief on

1 what the findings were so you have the bottom line a little
2 bit early as we go through.

3 In the QA/QC area, the findings, the ones that
4 we consider really critical were against three of the
5 criterion Appendix B.

6 The first being -- the first criterion which
7 deals with freedom of the QC organization to function. And
8 we identified the lack of independence on their part of
9 a cost and schedule and the freedom to identify problems.

10 CHAIRMAN AHEARNE: Now, is that an explicit
11 criterion in our ---

12 MR. SHEWMAKER: Yes, the words cost and schedule
13 are used in the criteria; and freedom to identify problems.

14 What we found in the investigation -- we sort of
15 broke it down in to five areas, and we have findings and
16 examples of production pressure ---

17 CHAIRMAN AHEARNE: I'm sorry to stop you, but
18 could you be a little more -- tell me what exactly the
19 linkage -- the independence of cost and schedule is in
20 our criteria? Obviously I'm asking, because having
21 read this I'm quite interested in it.

22 MR. STELLO: Maybe it would be easier to read
23 it.

24 "Criterion I, the Applicant shall establish,
25 at the earliest practical time, consistent with the
schedule for accomplishing the activities, a QA program

1 which implies to Criterion I," which is a little ambiguous.
2 There are five parts which gets to the cost and schedule,
3 do you want to hear everything?

4 COMMISSIONER HENDRIE: Somebody call CP&L and
5 ask them to print a copy for Vick.

6 (Simultaneous discussions.)

7 MR. MALSCH: It is in Criterion I.

8 MR. STELLO: What does it say, Marty?

9 MR. MALSCH: It says --

10 MR. SEYFRIT: It says: "Such persons and
11 organizations shall have sufficient authority in
12 organizational freedom to quality problems, initiate
13 recommend or try to provide solutions and verify implemen-
14 tation of solution." It doesn't have the words ---

15 MR. MALSCH: "Such persons or organizations
16 performing quality assurance functions shall report to a
17 management level such that this required authority and
18 organizational freedom, including sufficient independence
19 from cost and schedule when opposed to safety considerations
20 are provided."

21 CHAIRMAN AHEARNE: Including -- say it again?

22 MR. MALSCH: Including sufficient independence
23 from cost and schedule when opposed to safety..."

24 CHAIRMAN AHEARNE: Fine, thank you.

25 COMMISSIONER HENDRIE: That's correct. Criterion I

1 CHAIRMAN AHEARNE: I'm sorry, go ahead.

2 MR. SHEWMAKER: What we had done was group the
3 examples that we found in the five groups, production
4 pressure, lack of QC management support, which has been one
5 of the things that came out of the allegations, harassment,
6 intimidation and threats, physical threats against the
7 person, and we will go in to the details of this.

8 Under Criterion 15, we basically -- which
9 deals with non-conformance of how one tracks and handles
10 those, these will not be the exact words out of there,
11 but I will try to characterize them. They fail to control
12 and monitor the trends of the nonconformances. They
13 would identify a single nonconformance, but to look and
14 see how the total of those affect what is happening at
15 the safety of things was not being done.

16 On Criterion 18, which deals with the audit,
17 the fact that you need the audit function, we found that
18 they had failed to adequately utilize the audit function
19 in performing the total of the QA program, things like
20 that. Audits were not completed as specified in the
21 schedule. The audits weren't in depth sufficient to
22 find the kind's of problems that we sought.

23 So in looking at the QA/QC program, really the
24 finding is that we see it impaired the QA/QC programs.

25 CHAIRMAN AHEARNE: There is nothing implicit then,

1 in the criterion that would cover hassling, intimidation.

2 MR. STELLO: What it is, it says that the
3 people who have the responsibility to construct the
4 plant are putting too much pressure on the QA people
5 and you really don't have the freedom to go ahead and stop
6 the conflict or get QA activities corrected.

7 MR. SHEWMAKER: One of the other things that we
8 didn't cite here, that I think comes out in this is the
9 fact that the person who initiates or identifies an item
10 of noncompliance is supposed to be on the end of the
11 chain after it goes up in resolution state, so that he
12 ~~understands~~ how it was resolved or if it was washed away
13 or whatever happened. And that was not happening. So
14 this is why, then, we saw some of these people continually
15 bringing these allegations up, but they never knew what
16 happened to the things that they identified.

17 CHAIRMAN AHEARNE: I guess what I'm trying to
18 get at or your answer is that it is covered under
19 organizational freedom. I could see that on one set,
20 the lack of a system being set up, and for example the
21 point that you just made, it is more of a systematic
22 problem.

23 On the other hand, I can see physical
24 intimidation competing with the organization, looks as
25 though it has gotten -- you are saying they both are

1 covered under that.

2 MR. SHEWMAKER: Criterion I would be really, the
3 only one that would address the kinds of things like
4 harassment, or at least that was our assessment.

5 MR. STELLO: There are what, 18 criterion
6 independent of B? The first one gets to this issue
7 pretty well. I don't think that there is a great debate
8 that clearly says the kind of thing you saw would have
9 been harassment/intimidation, the subtleties of the system.
10 That clearly is not what you would anticipate as a health
11 criteria.

12 CHAIRMAN AHEARNE: I wasn't implying that I
13 thought it was a health situation.

14 MR. STELLO: No, no. Those kinds of things
15 are spoken to.

16 MR. SHEWMAKER: In the second major category
17 on findings, we put in what we call safety, and there were
18 two items there and we will describe in detail why we
19 have these there.

20 We ended up with questions concerning the
21 adequacy of safety related backfill, and as Vick indicated,
22 there have been some developments that are happening right
23 now, and we will try and bring you up to date on those
24 when we get to the back of the briefing on the related
25 soils area.

1 Then there is a group of unresolved safety items
2 that came out of the investigation team. We had to end
3 it some where and there are items identified that have to
4 be followed up, which are the normal kinds of things we
5 find on inspection investigations.

6 Now, we will turn to the next page and cover
7 the area -- I will give you some more background on this --
8 regarding the scope of the previous allegations.

9 CHAIRMAN AHEARNE: But as far as any of the
10 other -- such as the concrete and that stuff, you
11 concluded there were no safety issues?

12 MR. SHEWMAKER: We will address the ones that
13 we think are still to be resolved as the result of this
14 investigation. I just wanted to sort of give you an
15 overview of the end point before we got there.

16 CHAIRMAN AHEARNE: But your end point seems to
17 be, that as far as adequacy of safety related items, the
18 questions, at least in your presentation, it is only on
19 the soil backfill or at least that was my interpretation,
20 that you had concluded that the areas such as the concrete
21 was adequate.

22 MR. SHEWMAKER: Okay, let me clarify that.

23 What we are saying is, for the scope of this
24 investigation, out of the allegations that this team
25 pursued, we found no items that would lead us to believe

1 that there is a safety problem.

2 Now, we are still looking at things from the
3 past that weren't covered in this investigation.

4 The first allegations on this plant were back
5 in February of '77, and as we indicated, there was a
6 series of allegations coming in and there were a series
7 of investigations to come of those as they came in. There
8 were a total of 11 separate investigations carried out by
9 Region IV. Something on the order of 53 allegations, which
10 is a matter of how you cut them up sometimes, but on that
11 order of the magnitude of allegations.

12 About 14 or a number like that, 14 or 15 of those
13 we substantiated. Now, while these were being conducted
14 by the Region, they did not have authority to take sworn
15 statements. We did find that one of these individuals
16 was talked to both by Region IV in the earlier allegations,
17 and as the result of these sworn statements taken in this
18 investigation the story has changed. Whether that
19 happened in other cases, we really haven't really
20 examined that at this point.

21 As Vick indicated, there was considerable
22 interest because of the number of these, the media,
23 Congressional interest and as the result of this, the
24 mid term inspection schedule was moved up by a year from
25 1980 to 1979. So that mid term QA was kicked off in

1 August of this past year. Some of the findings of not
2 in compliance that came out of that mid term QA,
3 correlate to some degree of some of the findings of this
4 recent one. I will just mention what they are.

5 Out of the mid term QA program or inspection was
6 found that one of the subcontractors was not following his
7 QA manual or procedures, procedural violations. In
8 adequate audits by the utility and Brown and Root on that
9 subcontract.

10 Audit check lists were not maintained in the file
11 system. Those records that had been made were not in the
12 files for the people to use and try to make trend analysis
13 on.

14 They failed to identify changes in the organization
15 in the subcontractor, the QA organization. Those were the
16 kinds of things that came out of that mid term.

17 The FBI has been involved in this case ---

18 CHAIRMAN AHEARNE: Who ordered it?

19 MR. SHEWMAKER: I guess Gonzalez, basically.

20 They were looking at the question of falsified
21 records. There was a question of trying to establish
22 some records related to the Cadwelding and locations of the
23 Cadwelds.

24 Now, they were investigating over the period of
25 June to October, and they have sent their material to the

1 prosecutor down in that area, and on December the 4th, in
2 a letter to OGC, Justice declined further prosecution on
3 that case. They did find two instances of false records,
4 but it turns out that they are things that are not
5 required as far as the NRC and as far as safety related.
6 They were commitments on the part of the licensee, for
7 his own use.

8 COMMISSIONER BRADFORD: Commitments made in
9 what context?

10 MR. SHEWMAKER: Basically what happened, they
11 were trying, from the records they had, trying to establish
12 exact position in horizontal and elevation, where the
13 actual Cadweld splice was located in the placement or
14 in a concrete placement. This was after the Cadweld splice
15 had already been accepted as passing all of the requirements.
16 So really, once the splice is accepted, there is really
17 no need to know where it is. It is where you are maybe
18 building 100 splices and you are only testing two out
19 of 100, you want to know where that group of 100 is in
20 case your samples fail, to go back and find out where
21 those are that might be questionable, because the test
22 sample somehow didn't pass the test, but these had already
23 passed the test, so there is no need to identify those.

24 COMMISSIONER BRADFORD: There is a commitment,
25 though? In what form is the licensee going to take?

1 MR. SHEWMAKER: I cannot say whether it was in
2 a procedure or a spec or where?

3 MR. SEYFRIT: It is in their internal procedures,
4 really that they have set forth that are desired.

5 I'm Carl Seyfrit. And while it is not something
6 that is required by NRC regulations, the fact that they
7 commit to it in their procedures, we attempt to make sure
8 that they follow their procedures. So we, indeed, I believe
9 cited them for failure to have followed their procedures,
10 in spite of the fact that they are not required by our
11 regulations.

12 MR. SHEWMAKER: So that was the involvement at
13 Justice and the FBI and OIA has indicated that they
14 would keep Justice informed of any new developments as
15 the result of the investigation that we have going on.
16 They were aware that that was underway.

17 COMMISSIONER BRADFORD: Does your investigation
18 have a review of the FBI interviews?

19 MR. SHEWMAKER: It did not.

20 MR. THORNBURG: OIA has looked more in that
21 respect to those things. We fixed on a time period that
22 would be overlapped to the November 2nd allegations. We
23 tried to look at the near term to see if harassment and
24 intimidation was sort of a continuing thing and looked at the
25 QA picture at about that time. And OIA has looked more

1 in to that.

2 MR. SEYFRIT: I might add that we did get
3 copies of the FBI's report. In the Region we went through
4 it and tried to glean from it, any items that might be
5 alleged that we had not previously been aware of. And
6 we did find, I think, two or three that we had not been
7 previously aware of, and we did, indeed, look in to those
8 in some of our later work.

9 CHAIRMAN AHEARNE: Is someone from OIA here?

10 MR. STELLO: Yes.

11 MR. FORTUNA: What is that document date?

12 CHAIRMAN AHEARNE: What is the letter that you
13 are looking at?

14 MR. FORTUNA: It is the letter dated
15 December 4th, as Mr. Shewmaker says, addressed to
16 Mr. Bickwit, the General Counsel, from the Attorney General
17 down in the Southern District of Texas, and indeed, that the
18 prosecutor wasn't planning to probe, based on the
19 recommendations from the Bureau, which said they had
20 no substantive violations, and including a copy of the
21 Bureau's report. I was just curious as to what it was.

22 CHAIRMAN AHEARNE: Marty, did we write to them?

23 MR. MALSCH: I'm not aware of it, I'm not sure.

24 MR. FORTUNA: Yes, we were all aware of this.

25 In fact, the declaration was contained in the FBI report and

1 I am familiar with this.

2 MR. STELLO: Let me see if I can -- Gonzalez
3 wrote a letter to Bell requestion that this letter
4 be investigated. Bell, in turn, requested the FBI to
5 look in to the matter. They looked in to the matter, wrote
6 their report which went to the Attorney General in the
7 state, who, in turn, decided not to prosecute.

8 MR. FORTUNA: Yes, the two things came up. One
9 was independent of the other. When Gonzalez wrote to
10 Bell, Bell bucked it down to Civiletti who was then in
11 charge of Criminal. They it got bucked further back down
12 into the bowels of Criminal Division of the Justice
13 Department. Headquarters was then aware, that their
14 region, which they called the United States Attorney's
15 office, was in fact doing this investigation.

16 We told headquarters in Washington that their
17 region had declined, and that was confirmed in this last
18 piece of correspondence, in this letter to us to Bickwit,
19 that we are aware here on the record. And that's
20 why there is still on-going Justice Department interest
21 in it at their headquarters. They are still mildly
22 concerned that the letter which Gonzalez sent to them,
23 a year ago this time, whereby they rote back to this
24 agency to another office, OIA sent a monitor to take a look
25 see, in conjunction with the office of Inspection and

1 Enforcement, so the left hand will know what the right
2 hand is doing. That was the only thing that concerned me.

3 CHAIRMAN AHEARNE: It happens all of the time.

4 MR. SEYFRIT: It might be worth mentioning too,
5 at the same time, this letter went to Griffin Bell. It was
6 the letter that was sent to the Chairman of the Commission,
7 Mr. Hendrie received such letter that discussed the same
8 issues, but without specific reference to the request for
9 Justice Department to get involved.

10 CHAIRMAN AHEARNE: Now, does OIA still have some
11 on-going work on this?

12 MR. FORTUNA: This is the status of what we
13 have.

14 The one gentleman that we could afford to
15 pick out of the South Texas thing, per the arrangement
16 that was made with OIA and I&E, Mr. Thornburg, Mr. Cummings
17 and Mr. Stello, or particularly Mr. Thornburg, that
18 we would take a look at each district, that the special
19 task group which did the final on that mid term inspection,
20 would take a look from November ump-tee-ump, down through
21 and looking at the allegations that have been made in
22 about August or September, that time frame.

23 We have a wrap-up as to the field work. We do
24 not have a wrap-up as to a report, which is going to be
25 in the form of a memorandum down to the Department and

1 down to the Commission, EDO, etcetera. So they beat
2 us, so to speak, on the present status of the site. We
3 are looking at it back in time, only as to harassment,
4 intimidation and that sort of thing. Anything that we
5 glean along the way from our interviewees regarding
6 potential safety issues, gets sent back to I&E.

7 As I was saying a little earlier, we have finished
8 this pocket of work here, we still have threads that go
9 out and we can take a look at those kinds of questions.

10 Does that focus on where we are?

11 MR. STELLO: Yes. As I understand it, based on
12 what you have found this far, is consistent with the
13 results of what the task group has found. You have not
14 found anything that suggests that we have taken any wrong
15 turns in the harassment and intimidation and things of that
16 sort or have you asked different questions?

17 Have you found something that we ought to know
18 that is of any problem of any kind?

19 MR. FORTUNA: Any interview statements that we
20 take have been dribbled off to your office as we take them.
21 However, we are going not going to make a recommendation
22 kind of report, we are going to wrap it up, tie it together
23 and you can analyze it and make your own judgment.

24 MR. STELLO: I did try to get the point across
25 that based on -- I understand that OIA come up with

1 the same consistency that we have come up with, so that
2 we don't have any concern that there is any surprises.

3 MR. FORTUNA: I don't see any surprises in what
4 we have done. It is just more of the same as opposed to
5 something different.

6 CHAIRMAN AHEARNE: Fine.

7 MR. SHEWMAKER: I think we have finished OIA.

8 The Resident Inspector was assigned to this
9 site in late August of 1979, and by the way, we do have
10 the Special Investigation Team here today to answer any
11 specific questions, and the Resident Inspector was a member
12 of that team.

13 As we have said before, the allegations that were
14 investigated here numbered 12 when they were boiled down.
15 As the result of the investigation, 19 additional allegation
16 were developed.

17 Mr. Stello directed the Special Investigation
18 on November 3rd.

19 CHAIRMAN AHEARNE: Vick, was that triggered by
20 this set of allegations to the Resident Inspector?

21 MR. STELLO: In part. It was also the result of
22 what -- the FBI report, any new allegations, we decided
23 that we needed a rather thorough look at those questions
24 to decide whether there was an issue here and to somehow
25 deal with it correctly. My feeling at that point was that

1 of the investigation, I wanted it to be independent of
2 what the Region had done, in an effort to get an independent
3 look beyond the investigations that they had done, since
4 at least what they had come up with and what the FBI had
5 come up with, the new allegations suggested that perhaps
6 it wasn't being tied together the way it should, and I
7 decided that the Task Force may be able to look at it,
8 in part, the other concerns.

9 MR. SHEWMAKER: The team that was put together,
10 we tried to get people from the different disciplines of
11 the areas that were specified that we would look at. So
12 we had some one in the civil area, soils, welding and
13 in the QA/QC area. The team was run under Headquarters
14 direction and we had representatives from all of the
15 Regions except Region V.

16 As I said before, this investigation was
17 different in that -- different from the earlier investigatio
18 that had been done on South Texas in that the Team had
19 the authority to take signed sworn statements.

20 They actually conducted 57 formal interviews,
21 and took 24 sworn signed statements. There was something
22 like 50 less formal interviews made.

23 The time period covered from November 10th
24 through February 7th and it involved some 1100 inspector
25 hours. The areas that we covered by the investigation,

1 we were really in some five major areas.

2 Category I, concrete structures, the area
3 that most all of the allegations had been related to,
4 that activity area of concrete placement in the civil
5 area.

6 The other areas that we wanted to look at, but
7 in order to try and evaluate the effectiveness of the
8 current program in the QA/QC, included soils, welding and
9 NDE, the handling of audit reports and nonconformance to
10 general, and the audit function. Very little welding
11 had actually been done at the time, and of course,
12 nothing was really being done in the electrical area.

13 We indicated in the transmittal letter of the
14 early draft of the report that we would try and have it
15 finalized today, but we do not have it finalized. We are
16 going to be having a meeting after this session to try
17 and finish it up. There are some changes, really nothing
18 major. I might point out one that you might consider, if
19 somebody is really counting numbers it might change somebody
20 idea, but on Page 2 of the draft, and this is the one
21 that is dated April 9, 1980, under that paragraph that is
22 underlined that says: "Results" about a third of the way
23 down the page or half way down, it says: "8 of the initial
24 12..." that should be "9". We had one that was a partial
25 that we looked at in the last couple of days, and we decided

1 we need to throw that in to a nonsubstantiated.

2 In the second line there, where we say: "Two of
3 the initial 12 were partially substantiated.." it should
4 read: "One of the 12 was partially substantiated."

5 We will, of course, transmit copies of that
6 as soon as it is final. The last person came in today,
7 that was able to sign it. One person had a series of
8 heart attacks so he won't be signing. He is still out.

9 We have passed out the Appendix 5 which should
10 replace the one that was in the earlier version.

11 Now, to get to the results of the investigation
12 in some detail, and I don't know how much detail you want
13 to get in to, we can look at which of the allegations we
14 felt fit in to the five categories that we had in the
15 violation of Criterion I dealing with the freedom and
16 independence of the QC inspectors.

17 Under threats, we basically had what I considered,
18 really three very strong ones where we had a situation that
19 had a threat by someone that we would consider in a
20 management function in the construction side of Brown & Root.

21 In one case it was a construction superintendent,
22 and in two other cases it was a foreman. And in all
23 cases, the person who was alleged to have made the threat
24 admitted to making the threat, and in all three of these
25 cases admitted that it was made under a loss of temper?

1 CHAIRMAN AHEARNE: What kind of a threat?

2 MR. SHEWMAKER: I think you would characterize
3 them as a threat of physical harm.

4 CHAIRMAN AHEARNE: By "characterize," do you
5 mean that they were?

6 MR. SHEWMAKER: That's right. Bodily injury.

7 COMMISSIONER BRADFORD: I ought to stomp you
8 around.

9 MR. THORNBURG: That's getting close.

10 MR. SHEWMAKER: We saw some instances of
11 harassment, the type of thing, one that I recall a
12 construction person was boasting around the site that
13 I was able to get away with this particular procedural
14 violation while this QC inspector was there. And that
15 QC inspector heard that as a rumor. That is the type of
16 thing that undermines and harasses that QC inspector.

17 The Attachment 5, which has the Brown and Root
18 corporate policy, they had a meeting where that was given
19 as a speech, then it was later printed and handed out to
20 everybody.

21 CHAIRMAN AHEARNE: I gather, by the fact they
22 went to the difficulty of actually printing this they
23 felt that was fine.

24 MR. SHEWMAKER: They did believe that.

25 That, to me, is an example of harassment, and the

1 statements that were made to QC people about: Well, you
2 may not be here much longer; that sort of thing. Threats,
3 verbal type harassment.

4 We have examples of intimidation. The case of
5 A-52, we wanted to look at that particular one.

6 This is a case of where he did something because
7 he felt his supervisor would not support him. In other
8 words, he took an action based on what he was expecting
9 or the way he was expecting his supervisor to react. So
10 he was intimidated by what that supervisor told him in the
11 past.

12 The lack of management support, that was one of
13 the allegations -- one of the things that came through on
14 a lot of the allegations that the low-level QC inspector
15 identify something, and will not, say sign off on a
16 pour card which would release construction to go ahead
17 with construction. It goes up to the supervisor and maybe
18 another level up, and that supervisor was being -- would
19 get in to a discussion with construction, and the supervisor
20 would sign off on it overriding the CQ -- low-level QC
21 inspector.

22 The QC inspectors ended up with a feeling that:
23 well, why should I flag it, everytime I flag it somebody
24 is going to override it, a situation I don't think, is one
25 would generate a feeling on our part that all of the

1 problems are going to be identified and properly taken
2 care of.

3 CHAIRMAN AHEARNE: But certainly I would have
4 viewed this as management support.

5 MR. SHEWMAKER: The paper itself, yes. And it
6 brings in the cost and scheduling, you know.

7 CHAIRMAN AHEARNE: That not only brings it in,
8 that makes it.

9 MR. SHEWMAKER: Right, and it is repeated often.

10 Production pressures, the instance that I remember
11 most vividly is probably the one that there was a hold
12 up by QC, they knew all of the high-level construction
13 managers were standing around, the concrete was on the
14 way, and everybody was trying to get the QC to sign off.
15 They had a very short time and in some of the instances
16 they had actually reviewed the placement, 24 hours before,
17 and they found out that construction had gone back in
18 and done some additional work, then the QC would go in
19 there and would find additional problems.

20 So they felt they were under a great time
21 pressure.

22 All of those things together really built a
23 finding against Criterion I, that basically says there is
24 a lack of required independent QA function and we
25 did find one or two noncompliance examples in these five

1 categories.

2 The other significant quality related problems.
3 First we would put in the area of the civil QC inspector
4 qualifications, and civil procedures. The finding there
5 that we actually had four items of noncomplaine. The
6 one that would be, I think, the most significant is the
7 question of what we found in the failure to follow their
8 own procedures in qualifying the QC inspectors. There
9 were instances found where QC inspectors did not have
10 adequate training or experience for the job that they were
11 assigned to do.

12 MR. THORNBURG: This could feed to the intimidation
13 and independence thing, because if the guy isn't too well
14 qualified and starts nit-picking the construction foreman,
15 he is under pressure to produce, and I think that also
16 plays a role too.

17 COMMISSIONER BRADFORD: When you said the people
18 aren't qualified, which standard are you using?

19 MR. SHEWMAKER: Those basically were the standards
20 that Brown & Root had established which do reference some
21 of the ANSI standards.

22 COMMISSIONER BRADFORD: They are underqualified
23 by Brown & Root's own standards?

24 MR. SHEWMAKER: Right, which incorporates some
25 of the ANSI standards.

COMMISSIONER BRADFORD: We have a Reg Guide
on standards?

1 MR. STELLO: That's what I have asked Minogue to
2 develop.

3 MR. THORNBURG: There is a Reg Guide in this
4 particular area, but the definitions are not as tight as
5 we believe they ought to be.

6 COMMISSIONER BRADFORD: Does that Reg Guide apply
7 to this plant?

8 MR. THORNBURG: I would assume so.

9 MR. SEYFRIT: I'm not sure that it does. Reg
10 Guides typically apply only when they embrace them as part
11 of their submittal, and I don't know, in this case,
12 specifically whether they did or not. We do know that they
13 embrace some of the ANSI standards and those are the ones
14 that are really at issue here. But I'm not really sure
15 whether they embrace the Reg Guides or not.

16 MR. DIRCKS: Whatever it is, I think we ought to
17 look at it.

18 COMMISSIONER BRADFORD: But that commitment is
19 enough for you to inspect against, to line up their
20 qualifications against the ANSI standards?

21 MR. THORNBURG: (Nods in the affirmative.)

22 MR. STELLO: We can inspect against what they
23 have. The issue is, is the standard which applies to
24 this activity good enough? The conclusion is that it
25 is not, it needs to be upgraded in a better, either Reg Guide

1 or Regulation and promulgated that will beef up
2 considerably the requirements for CQ inspectors.

3 CHAIRMAN AHEARNE: Is that equivalent to saying
4 the ANSI standard is too?

5 MR. SHEWMAKER: Yes.

6 The next general area is the area of soils and
7 plank backfill that was looked at in trying to make an
8 assessment on the effectiveness of the current QA/QC
9 program implementation.

10 We found several areas of noncompliance in that
11 specific area of soils. Six, to be exact.

12 We found failure to complete compaction in
13 accordance with the qualified procedure. Failure to
14 document lift thicknesses in one of the passes which
15 one has to determine in order to understand what the
16 quality you are actually putting in to place. We found
17 two failures to control test equipment. Test equipment
18 is required for imperial type tests on field samples.

19 We found failure to have a systematic field
20 sampling program. We found failure to take prompt
21 corrective action of test equipment failure.

22 In addition to those noncompliances, we found
23 other questions that home in on the soils question that
24 we ended up with. We have some confusion in trying to
25 identify the materials that were actually used in

1 laboratory test programs where liquefaction studies,
2 versus the materials that were used in the field. We have
3 been trying to get that clarified on the phone today,
4 and I guess it is still unresolved as to whether the
5 materials that were tested in the laboratory for lique-
6 faction analysis are actually, in fact, the materials
7 that were put in place in the field.

8 CHAIRMAN AHEARNE: You say that there is some
9 question. Has the question been documented or is there a
10 question that exists which is it a question that we believe
11 there was a different material tested?

12 MR. SHEWMAKER: Well, on the basis of the
13 information we have, what brought it to the inspector's
14 attention was the information we had, there was a
15 possibility we were talking about two different materials.
16 And as yet, we have not gotten the documentation from the
17 licensee that would indicate otherwise. We are seeking
18 that information.

19 We also found that we were unable, and they
20 were unable with their records at the time, to establish
21 the field placement sequence that had been reached, in
22 order to try and go back and see in what sequence the
23 backfill material was placed. We have not been able to
24 get that information.

25 We have a question about the compaction, that

1 degree of compaction under those buildings resting on
2 this backfill material. When the last lift was placed,
3 the last six or nine inches of that last lift was to be left
4 loose, and in some instances what is done in construction,
5 you come back and cut that material away then fill on the
6 firm material. They were not doing that. They have
7 indicated that they have literature that shows that this
8 is acceptable. We still have not homed in and been able
9 to resolve that question.

10 There was a question over a test fill program,
11 and the adequacy of what they had done in a test fill
12 program to establish what lift thickness and how many
13 passes with the patching equipment they would have to
14 make in order to achieve the design densities.

15 When the team left the site, of course, some of
16 these questions were relayed to the licensee in an
17 exit interview, and the licensee embarked on an exploratory
18 program of this in-place material, and we are still
19 beginning to get some of the results of that. So all of
20 that is not yet really analyzed yet. We will talk about
21 a little bit of that at the end, of this latest information.

22 That characterizes the questions that we had
23 in the soils area.

24 One thing I would like to add before I go to
25 the next area is that there have not been allegation in this

1 particular -- this particular discipline has not had
2 allegations in this area. The only reason that we looked
3 at it was it is a major area of safety related work
4 that has been on-going, and was looked at because of our
5 attempt to look at the total QA/QC program effectiveness.

6 The next area that was looked at is the welding
7 and NDE area. The major findings there: we have had 6 non-
8 compliances in this area, the major ones being: failure
9 to test the welder qualifications specimens with the
10 proper radiographic techniques, so that what happens is
11 what ends up with a question of whether or not the
12 welders are properly qualified. This, I believe, the
13 number is something like 150 welders' qualifications is
14 a question because of this.

15 There has not been a great deal of welding
16 completed, so if we are going to catch something like this,
17 this was the time to identify it before a lot of high
18 quality welds had been put in place.

19 The other major item in this area was failure
20 to control radiography and the liquid penetrants. We
21 found problems in radiography, the quality of the
22 radiographs, problems in their interpretation of what
23 they saw in the radiographs. In the liquid penetrants,
24 we saw problems in the indications they had of flaws
25 were not re-examined as required by the code requirements.

1 The other noncompliances in that area dealt
2 with failure to control documents, documents out of date,
3 not being superseded properly and voided. Failure to
4 control weld area cleanliness. Our investigators acutally
5 observed this going on in an unclean situation for welding,
6 and it does effect the welding. Failure to control design
7 changes in welds, and failure to handle the outdated
8 procedures.

9 The next major area dealt with the -- their
10 methods of handling the nonconformance. These include
11 all types of nonconformances. Many sites have assigned
12 different names and acronyms to the way they handle their
13 reports. At this particular site, they call it
14 an NCR, Nonconformance Report, they also have another
15 form which is called a FFEA, which is a Field Request
16 for Engineering Analysis or Action.

17 We found that while many of the things had been
18 identified in one or other of these types of record keeping
19 mechanisms, there seemed to be an attempt to put more of
20 them in the FREA cateogry and the FREAs at the site are
21 not looked at in total. In other words, I built up
22 a list of about 1000 FREAs, but no one ever looks at
23 them to trend them and if I have, say, 50 FREAs on a
24 containment building, no one ever looks at the aggregate of
25 50 together to see what the total effect is. Each one is

1 in itself, isolated. So what the team found was that
2 things that were identified as discrepancies that we would
3 normally see in the -- what we call the NCR group that
4 are looked at on trend analysis, were, in fact, not being
5 classified in to that grouping at South Texas. So we see
6 that there is a total number of discrepancies that fall
7 in to this category that really hasn't been at all tracked.
8 We had the one finding in that particular area.

9 Again, that was somewhat related to some of
10 the allegations. The inspectors said, you know, I tried
11 to initiate an NCR which has to be tracked, and they turn
12 around, the supervisor or construction puts the pressure on
13 and it ends up being a FREA, which means none of this is
14 tracked very well, as far as trending and what the total
15 effects are.

16 The next major area was the area of audits. We
17 found four noncompliances in that area. I think we have
18 to classify all of those as critical, the audits being
19 really the total bounds in defense and depth that we are
20 looking at it in a QA/CA program. We found in this failure
21 of the licensee to provide procedures or to perform
22 supplemental audits that they had indicated would be
23 performed in their reference documents. The adequacy and
24 the frequency of audits did not meet what they indicated
25 they could do.

1 We found the depth of the audits by Brown & Root,
2 that they had to perform, were not sufficient. We found
3 failure to follow proceedings to document the control
4 to unsatisfactory conditions, and failures to take prompt
5 corrective actions.

6 So those in total as outlined in noncompliances
7 that were found, we have a number of items, as I indicated,
8 we will have to follow up. Some of them relate to these
9 five areas I have outlined. One of the areas that we
10 specifically came away thinking needed beefing up in this
11 case, I think we come out with the impression that we have
12 a situation here where the licensee is, in fact, not
13 exercising sufficient control over his contractor. And in
14 this case this contractor has what I consider the total
15 packages. He is the designer, the engineer, he is the
16 constructor and builder, and he also has the QC functions.
17 So he has all three parts of the package and in that
18 situation, it certainly is important that the licensee
19 have a very close handle on that total scope of work.

20 COMMISSIONER BRADFORD: What would happen if
21 he required the QA/QC to be done by HP&L instead of --
22 well, by a separate entity all together, anyway, not by
23 Brown & Root?

24 MR. SHEWMAKER: Well, we have -- there was an
25 instance at one plant where a requirement was placed --

1 right now, I guess we would have to say that a licensee
2 would certainly not be staffed to ever handle anything
3 like that.

4 COMMISSIONER BRADFORD: Did you ever have
5 licensees to do the QA/QC instead of the construction
6 company?

7 MR. SHEWMAKER: Yes, there are licensees. ---
8 You have to look, there is a difference. Some of them
9 do it all themselves.

10 MR. SEYFRIT: There are a number of different
11 combinations that you see. We have one licensee which also
12 has Brown & Root as the constructor, at Comanche Peak where
13 the utility, while they don't do all of the QA/QC work,
14 they have taken over absolute control of that function.
15 The QC/QA people from Brown & Root report to TUGCO
16 supervisors. That way, they have taken control, and as
17 a matter of fact ---

18 COMMISSIONER BRADFORD: Did that also come as
19 the result of unsatisfactory experience with Brown & Root?

20 MR. SEYFRIT: I think that is probably a fair
21 statement isn't it Phil?

22 MR. SEIDEL: You are talking about TUGCO,
23 Texas Utilities Generating Company, they were dissatisfied
24 with the performance of the corporate -- Brown & Root
25 QA. They just decided that one day all of the Brown & Root

1 QA/QC people would report to their company. However, the
2 QA/QC people still get their pay checks from Houston.

3 CHAIRMAN AHEARNE: Do we see any improvement?

4 MR. SEIDEL: I would say, yes, some improvement.

5 CHAIRMAN AHEARNE: Do we have any other examples
6 of Brown & Root?

7 MR. SEYFRIT: I think these are the only two
8 at the present time that Brown & Root is involved in,
9 South Texas and Comanche Peak.

10 COMMISSIONER BRADFORD: I guess I should ask
11 rather than assume that because of TUGCO's dissatisfaction
12 was the same sort of thing as seen here, and not that,
13 for example, construction was proceeding too slowly?

14 MR. SEYFRIT: No, I don't think that it was
15 that. It wasn't exactly the same either. For example,
16 I don't know of any indication that TUGCO had that there
17 was the harassment and intimidation and that sort of
18 thing taking place. That did not appear to be a factor
19 in their decision, but they didn't feel that the job
20 was being adequately controlled in terms of the numbers of
21 items reworked and ---

22 CHAIRMAN AHEARNE: Were the numbers too high or
23 too low?

24 MR. SEYFRIT: They were obviously too high, I
25 think. They felt they wanted ---

1 COMMISSIONER BRADFORD: That's why I didn't
2 assume that.

3 MR. SEYFRIT: I mean the problems in construction
4 were not being delt with.

5 COMMISSIONER BRADFORD: I see, they were having
6 to go back and do things over?

7 MR. SEYFRIT: That's correct, and they wanted to
8 make sure that the inspection was properly done the first
9 time around so that this didn't happen.

10 MR. THORNBURG: So that the work got done properly
11 before the inspection.

12 MR. SEYFRIT: So those kinds of factors were
13 involved.

14 I might mention that I have had communications
15 from HL&P, and they have been in contact with TUGCO, and
16 they are discussing and considering the possibility of
17 their taking the same kind of action. They have not
18 yet made such a decision, and I don't know whether I would
19 want to push them in that direction right now or not, but
20 I'm not sure that that's the total answer. You buy something
21 but then I think you give up some other independence that
22 may be as desirable.

23 CHAIRMAN AHEARNE: What other independence do
24 you have?

25 MR. SEYFRIT: Well, if HL&P takes over the entire

1 job of controlling the quality assurance/quality control
2 effort, they still have the ultimate end of rapid
3 construction and so forth, so some of the same driving
4 forces that are present now with Brown & Root would be
5 present in HL&P.

6 CHAIRMAN AHEARNE: So you are saying there is
7 some alternative plan rather than Brown & Root?

8 MR. SEYFRIT: Yes, I think frankly, that a much,
9 much stronger HL&P presence on site, without necessarily
10 taking over.

11 CHAIRMAN AHEARNE: I see.

12 MR. THORNBURG: We are sort of moving ahead
13 in a way. We are considering encouraging Houston Power
14 and Light to get more involved. We haven't talked quite
15 about ---

16 CHAIRMAN AHEARNE: I will stop my digression at
17 the moment. Here, you have Brown & Root having
18 construction in two agencies, you have the TUGCO
19 proposition where Brown & Root does the construction and
20 the Brown & Root people still have to report to the
21 utility.

22 Now, you were pointing out that that would
23 lose some of the independence, but ---

24 MR. SEYFRIT: No, I didn't suggest that it would
25 lose, I just don't think that you gain any independence.

1 CHAIRMAN AHEARNE: Well, to some extent -- Well,
2 go ahead.

3 MR. SEYFRIT: It is not clear.

4 MR. STELLO: I think it is an area that does
5 need to be looked at, but the bottom line is there needs
6 to be an improvement in the QA/QC organization, at least
7 in terms of the way in which you are getting the job done.
8 That's one way. There are others we will talk about at the
9 end.

10 MR. SHEWMAKER: Okay, conclusions. I don't think
11 we need to rehash the first few there.

12 We have reached the conclusion that we have got
13 a QA program that is impaired, we have got lack of
14 independence.

15 Now, this lack of independence really comes out
16 only in the civil area that we have seen. That is really
17 the only major area that has heavy work activities.

18 We have really no clear cause that affects
19 relationships resulting in deficient systems and
20 components as a result of this. We don't see, in the
21 civil area, as a result of this investigation, any major
22 problems with regard to safety.

23 CHAIRMAN AHEARNE: As you went through your
24 description, one of the questions that was sort of
25 puzzling about it, is that are the quality control people not

1 nearly adequate, so is the fact that they get harassed
2 and pushed around and don't raise their problems, those
3 problems that they don't raise don't seem to have led
4 at least in judgment so far, in safety problems. That
5 could be because they don't raise the problem in non-
6 safety areas, it could be because of the problems they
7 raise could be that they are not being very competent
8 if the problems they raise weren't really problems.

9 MR. STELLO: Well, that's a third possibility,
10 and even in spite of the difficulty, the job is not
11 getting done, although that the activity doesn't stop
12 them from saying I don't think you have to investigate
13 them. And one way to measure that is to look at the end
14 product. When you look at the concrete of the South
15 Texas project, it doesn't look like Marble Hill.

16 CHAIRMAN AHEARNE: No, no. There is another
17 way had, I'm not sure what would have been done is to
18 look at the kinds of things on which they got harassed
19 or look at the issues they have decided not to raise in
20 which you judge whether or not those are real issues.

21 MR. STELLO: Are you aware of any issues that
22 were not raised because of the activities or harassment?

23 MR. SHEWMAKER: No, all of the people that were
24 interviews basically said that, you know, they had always
25 brought everything up. I guess it is just this feeling

1 of frustration ---

2 CHAIRMAN AHEARNE: But you also mentioned some
3 area that they felt should have been in NCRs but instead
4 became FREAs. Did you look at those and say, yes, those
5 really should have been NCRs?

6 MR. SHEWMAKER: I think we looked at it from
7 the standpoint of trying to compare it to what we would
8 see on another job, and we would say, yes, it probably
9 should be in the category of an NCR, because that is the
10 system that gets tracked. So you have a long-term
11 evaluation.

12 CHAIRMAN AHEARNE: But you really though,
13 trying to make an estimate of were they not really
14 competent people to raise the problems, or where they
15 were competent people raising problems to ---

16 MR. SHEWMAKER: We did, of course, identify some
17 of these QC inspectors at level one that were not
18 adequately qualified. I guess we did sit down and look
19 and see if those were the ones who were well trained.

20 MR. HAYES: Depends on how you look at the
21 problem. If you look at a specific instance, there
22 was harassment not with respect to a particular item,
23 but there was a whole series as was pointed out, and on some
24 of the others; nobody looked at all of the problems
25 contained in the sum. There is a pattern of harassment of

1 the QA people that's a conclusion that affects the QA
2 program and the purpose of the QA program is to assure
3 safety, so it is ---

4 CHAIRMAN AHEARNE: Yes, I know. I was just trying
5 to get a sense of how much of that would be due to the
6 the fact that a bunch of people like that are competent.

7 MR. HAYES: That seems to be disconnected with
8 safety here, and I find that an incompetent QA program
9 isn't what I think ought to then achieve in connection with
10 safety.

11 MR. DIRCKS: But isn't it the single items of
12 harassment ---

13 CHAIRMAN AHEARNE: My point is that we have
14 a QA program that really looks terrible. Now one of the
15 things you conclude ordinarily would be terrible, is the
16 product would be terrible. But that's not what you find.

17 I was just wondering skeptically is it because
18 the QA people are terrible?

19 MR. SEYFRIT: Well, at the risk of being somewhat
20 misunderstood, I would like to make a comment to maybe
21 bring this in to some degree of perspective.

22 It was mentioned here earlier that there was
23 something like 1100 hours of effort went in to this
24 inspection. Our routine program up to this point represents
25 something on the order of an equal number of hours, making it

1 a little less than more, over a long period of time. So we
2 have concentrated a great deal of effort and compacted
3 it into a small space, and I'm not really sure, you know,
4 I can't put numbers to this, but I rather imagine that if
5 you look at the rate of noncompliance items or some such
6 measure as that, per inspector hour of effort, you would
7 see that they are not that greatly different. And what
8 I'm suggesting is the possibility that over a longer period
9 of time, if we had looked at these same areas, the same
10 number of things would come up, but in single isolated
11 cases rather than a broad spectrum.

12 MR. THORNBURG: It is a little over the
13 average.

14 MR. SEYFRITS: It may be.

15 MR. STELLO: I think the way it is cited it is
16 a different issue here. That is the issue of harassment
17 and intimidation and the way the QC inspectors have been
18 treated.

19 CHAIRMAN AHEARNE: Victor, I'm not saying that
20 we can tolerate harassment of the QC people. That's
21 not the issue I was trying to make.

22 MR. STELLO: That is clearly not a situation
23 that you want to tolerate. I think, a strange relationship
24 between QC people and construction people is normally trouble.
25 You would expect to see some normal adversary role, because

1 I think it is a natural involvement and it is too much
2 here. It is beyond that. But you always look at the
3 product to decide where are you. If the product looks
4 like it is good, in this third possibility, although these
5 problems are there, that somehow they are still managing
6 at this point to still get through and have this quality
7 job done so that the product is still, at least for the
8 most part acceptable. We are seeing the innocent problems.

9 Now, we are going to get, very quickly, in to this
10 soil issue, which is not a trivial problem. It is a safety
11 problem. It is related to the QA, it is not related to
12 these allegations. But the way in which they have been
13 doing the job, it is producing, at least in this particular
14 area, questions which are fairly significant. So it is not
15 to say that the product is completely free of the problem,
16 you can see a relationship, at least there is an inner
17 one, that some of the problems were saved because of the
18 soil, we are now saying some new problems which we are
19 finding out even now, today.

20 So if I think you give us just another moment,
21 there will be a clearer connection.

22 MR. SHEWMAKER: Okay. I would like to give you
23 a rundown, sort of on the current status. We will leave
24 the soils there until last.

25 As far as concrete activities, as the result of

1 their immediate action letter, the complex concrete
2 placements have been halted since December 21st.

3 Now, I will explain what complex concrete
4 placement is. That would include all concrete in the
5 reactor containment buildings, and it also includes, as
6 defined and identified by the licensee and the constructor,
7 those other placements in Category I buildings that were
8 involved, complicated embedments, anchors, supports and that
9 sort of thing, and heavy reinforced areas.

10 CHAIRMAN AHEARNE: And the reason for that
11 stoppage was?

12 MR. SHEWMAKER: The reason for that stoppage
13 was, in fact, the findings of this investigation, the
14 question of some QC inspectors not being adequately
15 qualified. We did have some findings with noncompliances
16 in procedures in the concrete placement. And they --
17 failure to follow those procedures will have a more
18 pronounced effect on the completed structure in these
19 complex placements. So those have been halted and
20 remain that way.

21 Just recently in the area of welding, and
22 because of the question about qualification of those
23 welders, the licensee has issued his own stop-work
24 order, I believe on what, March 18th?

25 MR. SEIDEL: Yes, and it was reconfirmed on the
14th.

1 MR. SHEWMAKER: Then it has been reconfirmed just
2 recently, yesterday.

3 And that deals with welding -- ASME Code
4 welding and that associated with Category 1 welding.
5 That is sort of an evolving situation, and would appear
6 that that came out as the result of findings of this
7 investigation, the facts that these welders are not
8 qualified.

9 Another thing that came out of the investigation
10 were the findings of harassment and intimidation... The
11 licensee has hired an independent consultant to come in
12 and look at the environment under which the QC people and
13 construction people have to work.

14 CHAIRMAN AHEARNE: That hasn't been completed,
15 then?

16 MR. SHEWMAKER: The study has been completed. We
17 have not received a copy of it. I understand the Region
18 people have looked at that at the site. We do have an
19 executive summary, which sort of summarizes that.

20 MR. PHILLIPS: We have received a copy of it,
21 but I'm not sure they reached the same conclusion.

22 CHAIRMAN AHEARNE: In what sense?

23 MR. PHILLIPS: That they believe there isn't
24 any pressure of any great amount at this time.

25 MR. SHEWMAKER: They concluded that the pressures

1 were really not coming from construction, but the situation
2 was being created within their own management organization
3 and the QA/QC group. They even made the statement that
4 the working relationship between individuals in constructio
5 and QA/QC is sound. That seems to be about 180 degrees
6 from the findings of this team.

7 CHAIRMAN AHEARNE: This was, you say, done by
8 a consultant hired by the company?

9 MR. SEIDEL: A Mr. Howard was the auditor.
10 I know nothing about this consultant firm.

11 CHAIRMAN AHEARNE: It is not a group that I&E
12 is familiar with.

13 MR. PHILLIPS: No.

14 MR. SHEWMAKER: They outlined some steps that
15 they felt the licensee should take. I might just mention
16 those quickly. The licensee has put those in a letter.

17 CHAIRMAN AHEARNE: And the licensee is ---

18 MR. SHEWMAKER: Trying to take some action.

19 CHAIRMAN AHEARNE: But based upon the
20 consultants.

21 MR. SHEWMAKER: Their recommendations.

22 Reemphasize the role of QA/QC to construction
23 personnel, and I don't know their exact speech and for
24 forth, but that acutally came before, I believe, just
25 before this report was available.

1 Additional training and seminars, and meetings
2 to strengthen the role and understanding of the purposes
3 of functions of QA/QCs.

4 CHAIRMAN AHEARNE: Seminars with whom?

5 MR. SHEWMAKER: All the workers.

6 Revised salary schedules for QA/QCs. And the
7 last, improvement of the communications by QA/QC
8 management at site meetings and with all the low-level
9 personnel in QA/QC.

10 In addition, the licensee has committed to
11 some changes in the QA program, and the way they are going
12 to implement that, and those came about as the result of
13 a meeting which was made up of people from the team and
14 Region IV the end of December. And there was a series of
15 9 steps that were -- or items that were outlined. The
16 licensee has been proceeding to try and implement these
17 9 steps, and at the present time, it appears that 5 of
18 these still have not been fully satisfied. The Region
19 has been following the licensee's implementation of these
20 commitments, maybe Phil would want to say something about
21 that.

22 MR. SEIDLE: With regard to the 9-point program
23 there still are some 5 items which remain open.

24 Item number one, which is a concern about Brown &
25 Root costs which was expressed, I think, in a January 4th

1 meeting.

2 COMMISSIONER HENDRIE: This is the Appendix 5
3 speech?

4 MR. SEIDEL: Yes. There is concern regarding on-
5 site authority, for the QAs to have more organizational
6 freedom. They are permitted to place noncomplex concrete
7 placements. They have been observing their activities to
8 see just how this will impact on the QC performance.

9 With regard to the second item under number 2,
10 which deals with the FREAs and NCRs, they had not
11 completed a coding and printing effort to code all of these
12 FREAs into engineering disciplines and looking for trends.
13 This is not completed.

14 They have not revised their procedure for
15 control of FREAs. With regard to Item No. 5, apparently
16 this has to do with procedure revision with regard to
17 pre-planning placement activities, specifically we are
18 talking about a list before concrete is put in place,
19 thereby, on-site engineering/construction QC people
20 identify what must be done before placing the concrete,
21 yet they are placing it in an informal manner, it has
22 never been formalized. Yet they rely on that. This
23 has not been done yet.

24 Item No. 7 of this 9 point program is
25 augmentation of site QA staff. Are they indeed adequately

1 staffed. We don't know the number of on-site QA
2 surveillance people representing the licensee, are they
3 sufficient. We will have to observe to see if these
4 numbers are adequate. Are they functioning adequately.

5 In other words, have they brought about
6 changes as a result of this task force effort that has
7 improved their performance at the site.

8 Item No. 9 is the last Item. I said Item 7,
9 Item No. 9 is the last item. Of course, they have made
10 commitments to reemphasize the role of the quality
11 control program. This is in progress, this effort is
12 not complete. They made a commitment to conduct refresher
13 training methods, this is in progress. With regard to
14 the salary administration program, that is trying to make
15 the salaries of QCs competitive with QCs elsewhere, and
16 the relationship to the workers at the site, there has been
17 no action taken to do that, as we know of with regard to
18 this item.

19 With regard to improved communications, this
20 is in progress, but it is not complete. Concerning the
21 relationship of resolution of conflicts between QC
22 inspectors and construction people, a procedure has been
23 generated, reviewed and approved on how to handle these
24 types of conflicts. Whether or not it works or not, remains
25 to be seen. Again, we will have to inspect their activities

1 and their judgments.

2 That essentially summarizes those.

3 MR. SHEWMAKER: Okay, the last item under
4 current status is an up-date on the soil situation.

5 You will probably find when you go back to your
6 offices tonight you have received a PN. We just recently
7 received information that the MEAB, that's Mechanical
8 Electrical Auxiliary Building, where Unit 2 has a
9 differential settlement both north to south, of one inch,
10 the south end having moved downward. The licensee has
11 indicated that this is the result of the heavier loadings
12 due to construction sequence which has been placed on the
13 south end.

14 The licensee has indicated that no piping is
15 currently attached in this building, and that they feel
16 that the situation ought to correct itself as they get
17 the loading more uniform, as will be the case when the
18 structure is completed. We really have not had a chance to
19 evaluate this at all. I guess we have the question of
20 whether that may or may not relate to some of the
21 deficiencies we identified in the backfill program, and
22 whether or not there is a cause of effect there, I can't
23 say at this time. We are looking at that possibility.

24 As far as our planned actions, there is, of course,
25 a new allegation related to drugs, which is being investigated.

1 We are looking at and considering ---

2 CHAIRMAN AHEARNE: This intimidation, does that
3 relate to the procedure?

4 MR. SHEWMAKER: That's my understanding, yes.

5 MR. SEYFRIT: Yes, but in a different
6 discipline than we have talked about before. There was
7 a QC man involved, that was 1 out of 4 as I understand it.
8 It was a discipline of mechanical rather than civil. It is
9 a different group of people.

10 CHAIRMAN AHEARNE: It is still Brown & Root then?

11 MR. SEYFRIT: Oh, yes, it is all Brown & Root
12 on both sides, that's right.

13 MR. SHEWMAKER: One of the planned actions is
14 civil penalty in the area of these noncompliances that we--
15 there were a total of 22 noncompliances defined by this
16 investigation. That is being considered.

17 We also are considering an order which would
18 handle trying to correct the situation that we see.

19 CHAIRMAN AHEARNE: What would you base the order
20 on?

21 MR. SHEWMAKER: The order would address corrective
22 action in the area of welder and welder requalification
23 and relook at any welds that were completed by those
24 welders that didn't have adequate qualifications.

25 It would address the NCR and FREA trending

1 situation. The audit surveillance, the problem of
2 qualification of the civil QC inspectors, and somehow
3 we need to address a mechanism or provide a mechanism
4 for getting increased involvement of the licensee in to
5 the QC functions.

6 CHAIRMAN AHEARNE: Why do you just restrict it
7 to the civil, is it the turn of events that the other is
8 still on-going?

9 MR. SHEWMAKER: I guess, as far as I know,
10 the team didn't really get in to all areas, as far as
11 qualifications of inspectors. I guess we don't know that
12 at this time. Perhaps it should be broadened.

13 MR. STELLO: I think the issues is that we
14 do know where there is a problem. We hopefully are going
15 to cover this with an umbrella that says you have got to
16 get your whole act together and make sure that this doesn't
17 occur.

18 The recent incident of yesterday when they cut
19 back now, in the welding area, is, I think, a good sign
20 that they are looking very carefully and are stopping the
21 work when things aren't moving correctly. To the extent
22 of the attitude, I don't see that they will have further
23 problems, and if they do, then we are going to have to
24 cite them for that.

25 You left out one area, Bob, that I think is

1 important. We are going to have to find a way we can
2 get some answers to these questions on the soils, as there
3 are some areas where we have made some measurements and
4 the soil is not up to the standards that it should have
5 been, the area is not under construction at the moment,
6 but off to the side. We are going to have to lay a time
7 table, as there really is a serious question on the soil
8 under some of these structures when the construction
9 begins. We should get to that very quickly, so we don't
10 have to have a situation develop exactly the same as in
11 the past. We should perhaps find a mechanism to get
12 that information.

13 CHAIRMAN AHEARNE: Is there any way we can reach
14 Brown & Root?

15 MR. STELLO: We are looking at that question.

16 CHAIRMAN AHEARNE: I recognize that the licensee
17 is probably responsible, but ---

18 MR. STELLO: This most recently allegation that
19 we are speaking of, depending on how that goes, it may
20 give us a mechanism to get there directly.

21 COMMISSIONER BRADFORD: What does that mechanism
22 look like?

23 MR. STELLO: This particular allegation has a
24 flavor to it where Brown & Root personel, we got hold of
25 an individual and requested he sign a particular document

1 saying you didn't see any safety problems here, and he
2 will sign this document to relieve his drug charges.
3 This at least has a potential for ---

4 COMMISSIONER BRADFORD: Now, what part of our
5 regs is it that ---

6 MR. STELLO: I wasn't thinking in terms of our
7 regs.

8 COMMISSIONER BRADFORD: It is a matter of violation
9 of law?

10 MR. STELLO: Whether we can get them specifically
11 under Part 21 on this issue.

12 CHAIRMAN AHEARNE: Isn't there some way -- we
13 haul in licensees to public meetings, is there any way
14 we can insist that the licensee can burden Brown & Root ---

15 MR. STELLO: Absolutely.

16 CHAIRMAN AHEARNE: They are the ones that we
17 ought to be really ---

18 MR. STELLO: That's the last item.

19 At the meeting we are talking about, it is quite
20 apparent this will be one of the major issues, and we
21 hope to direct this to the officials from Brown & Root as
22 well as the licensee, but my view is the licensee is
23 the individual who is responsible. He has got to get
24 his act together, and if that means that he has got to do
25 something different with Brown & Root than he is doing,

1 we should direct that change or he can find some other
2 way to do it, but the first responsibility, the first
3 level we look at is the licensee.

4 There are questions as to whether or not we ought
5 to find -- want to look at mechanisms to get to the
6 architect/engineering firm and the next level would be
7 Brown & Root. Bill raised this question in the briefing
8 last week. I don't know if there is an easy answer.

9 MR. MURRAY: Generally, I would say no. This
10 is a function for the licensee to perform and we hold them
11 responsible for all of those things not done. If we
12 were to deal directly with the AE, that would imply
13 somehow that this regulatory agency would want to see
14 the plant get built, and I don't think we want to imply
15 that. We just make sure that it gets built safely.

16 CHAIRMAN AHEARNE: Right.

17 MR. MURRAY: If it does not get built at all,
18 we say to the licensee, you make sure it gets built safely,
19 we just want to make sure.

20 CHAIRMAN AHEARNE: Let us assume that we do go
21 out with some sort of notice, et cetera, we put out
22 a public announcement as such, do we put in Brown & Root?

23 MR. STELLO: In this particular meeting we are
24 referring to, specifically, especially in light of this
25 particular piece of paper, there is no doubt in my mind

1 their senior officials of the company must be there if
2 this issue is squared away.

3 CHAIRMAN AHEARNE: What I was trying to get at,
4 for example, let's suppose you go forward somehow, some
5 penalty goes out in the press release saying the NRC
6 is laying a fine on such and such a licensee. We go
7 on to say this is because of the continual violations of
8 standard noncompliances of QA/QC of Brown & Root.

9 MR. STELLO: We haven't normally done this.

10 CHAIRMAN AHEARNE: I know that.

11 MR. STELLO: I don't like to decide this --
12 I will be happy to look at it.

13 CHAIRMAN AHEARNE: I would like very much for
14 you to look at that.

15 MR. STELLO: I guess I don't see anything
16 fundamentally wrong, especially with respect to the
17 meeting we are going to have. I think we want to be
18 clear to the Brown & Root officials ---

19 CHAIRMAN AHEARNE: What kind of schedule do
20 you have on this for considering these ---

21 MR. STELLO: With respect to the enforcement
22 package?

23 CHAIRMAN AHEARNE: Yes.

24 MR. STELLO: If things settle down for a day
25 or two and we can get it developed, I would suppose in

1 about a week we can have the enforcement package. The
2 order we are talking about is much more difficult.

3 I guess I can assume the report will be finalized
4 within that time.

5 MR. DIRCKS: Assuming there are no more allegations.

6 MR. STELLO: Well, there already are. Those will
7 not be finished.

8 MR. THORNBURG: The scope of the investigation
9 has to stop.

10 MR. STELLO: I had the problem of looking at a
11 way which to get in to the press announcement, what
12 particular action would involve Brown & Root specifically.
13 I just want some more time to think about that.

14 MR. MALSCH: Are any of the Part 21 violations
15 similar to the B&W situation?

16 MR. STELLO: Yes, that is one of the issues
17 that came out of the briefing last week.

18 MR. SEYFRIT: What is the Part 21 connection here?

19 MR. STELLO: We are going to look in to it,
20 no one has an answer at the moment.

21 COMMISSIONER HENDRIE: What you have is a QA/QC program in
22 which there appears to be more than the normal and perhaps
23 irreducible amount of friction between the construction and
24 QC/QA shops. There appears to be less management support
25 in the QC than we would like to see and relations of that

1 kind.

2 Nevertheless, it isn't clear to me from what
3 you have said today, there is any very clear evidence to
4 me, much of any evidence, that in spite of the QC program,
5 it hasn't been effective and resulting in a satisfactory
6 construction product.

7 Now, it is certainly not a situation that one
8 would encourage or want to tolerate going on, because as
9 they go on with the plant, getting in to more complicated
10 areas, especially over in the mechanical and electrical
11 areas, it is that much tougher to get a quality product
12 than it is in some of the heavy concrete work that they
13 are doing now. So you would like to get a hold of it.
14 It isn't clear to me that, in fact, there is much evidence,
15 if any evidence of safety related deficiencies, and if there
16 isn't, then you have to say, well, it is a safety related
17 problem that people are snarling at the QC inspectors and
18 so on, I think that is the point you stressed.

19 MR. STELLO: Let me make one exception to what
20 you said. I think in the area of soils ---

21 COMMISSIONER HENDRIE: Well, the soils question is
22 an open one. I'm not talking about that.

23 MR. STELLO: That's a QA breakdown. The QA system
24 wasn't doing its job in making the engineer's backfill done,
25 in the way that was supposed to get it done. So that's ---

1 COMMISSIONER HENDRIE: But you wouldn't cite
2 them because the construction people were being nasty
3 to the QC people. You cite them because they failed to
4 get the soils compaction specified.

5 MR. STELLO: That's exactly right.

6 COMMISSIONER HENDRIE: Now, I was going to ask.
7 Do you have a thought for where you are going on the
8 enforcement action here?

9 MR. STELLO: What appears to be warranted is
10 a civil penalty based on ---

11 COMMISSIONER HENDRIE: It appears that the
12 utility is in motion.

13 MR. STELLO: Yes, the utility is in motion.

14 CHAIRMAN AHEARNE: Except that it hasn't
15 caught up with the system.

16 COMMISSIONER HENDRIE: Listen, you get 3,000
17 construction workers and assorted people on the site, not
18 much of this surprises me.

19 MR. STELLO: You take the experience of it
20 being a half dozen of both arguments. He has found and
21 corrected the problem himself, he has decided to take
22 some action, that's a QA function itself.

23 CHAIRMAN AHEARNE: Who, the licensee?

24 MR. STELLO: He decided the welding wasn't going
25 the way he thought it ought to go and stopped it again.

1 Well, the civil penalty to me seemed to be ---
2 COMMISSIONER HENDRIE: Is it clear you are
3 going to get the best action from the collection of people
4 in South Texas, I guess, is what I'm getting to.

5 MR. STELLO: Well, that's not all. I think we
6 have to get an order which gets in to some of the areas
7 and problems of the past, in to causing things to get
8 turned around. I think that's necessary.

9 I'm also beginning to believe that the concept
10 of: Let's get together and have a public meeting, do
11 this on local at the site, and get put things on the table
12 and let's talk about them. I think that is an important
13 thing also. I will propose that the enforcement package
14 include a civil penalty, and I don't think it is going to
15 be big dollars. The requirements that ought to be in the
16 order, including an order to have a public meeting on
17 or before some date, whatever I decide on. In a nutshell,
18 that's the kind of enforcement package, as I see it,
19 that is appropriate now.

20 COMMISSIONER BRADFORD: Let me ask a couple of
21 questions if I could about the investigative technique.

22 There has been a pretty high turnover of people
23 leaving. If I'm reading the summaries of the interviews
24 correctly, I didn't notice you had interviewed many of
25 the people who had left. Is that correct?

1 MR. HAYES: That is true.

2 COMMISSIONER BRADFORD: Why not?

3 MR. HAYES: Most of them weren't available.

4 COMMISSIONER BRADFORD: Wait a minute, of course,
5 they are available, if they haven't left the country.

6 MR. HAYES: Right. Well, I guess in part, we
7 looked to OIA, but in part too, we had to bring this
8 thing to a lull some time, and there were quite a number
9 of them. Where do you stop, I guess is the ---

10 COMMISSIONER BRADFORD: Well, just intuitively,
11 I would have thought that you might some time get a more
12 complete discussion, shall we say, of practices of the
13 site by interviewing people who didn't also have a
14 continuing job stake in what they were saying.

15 MR. STELLO: But that had taken place in the
16 earlier interviews, before they left the site.

17 COMMISSIONER BRADFORD: Okay, so you are saying
18 that is true?

19 MR. STELLO: In the earlier interviews that are
20 already done. The scope of this particular group that
21 I had in mind was to take a look right now and get in to
22 it with the OIA activity, looking back in to the previous
23 allegations of people who had raised ---

24 COMMISSIONER BRADFORD: Okay, as long as somewhere
25 in the agency these people are being picked up.

CHAIRMAN AHEARNE: Is that what OIA is doing?

1 MR. FORTUNA: Yes, sir.

2 MR. STELLO: In our first investigation
3 interviews we did that too, take a look at the people who
4 had left.

5 MR. SEYFRIT: The ones that were conducted by the
6 Region before this present one, there were a number of peopl
7 who had left the employe that we did talk to. I can't
8 give you an actual count of those, and I'm sure I can't
9 say that we talkèd to each and every one of them, but we
10 did talk to a number of them.

11 MR. THORNBURG: There is another point though.
12 Dee sat down and talked to another 50 people without taking
13 their names. They talked a little bit about turnover rates
14 and general problem areas. Is that correct?

15 MR. HAYES: Yes. This turnover kept coming up.
16 A lot of people quit, but I did make an attempt to talk
17 to people who were there, recognizing they were not the
18 people who had left. I asked them why some of those
19 people left, and I got a variety of answers, I would say
20 about a third of them was because of poor management.
21 They said the management is all fouled here, I have
22 never worked in a place where management is so screwed
23 up. Comments like that. Another third felt that the
24 merchants in Bay City was taking advantage of them, they
25 didn't like the area, their families didn't like the area

1 and that was why they were moving. I didn't get the
2 answer that I thought I might get, harassment and things like
3 that.

4 COMMISSIONER HENDRIE: Sounds normal to me.

5 COMMISSIONER BRADFORD: Well, except that the
6 numbers, if I understand them correctly, 22 of the 39 in
7 the CQ inspection group, as of February 1, 1979, voluntarily
8 terminated or were terminated or reassigned. I don't know,
9 maybe that's normal, but that sounds like an awful lot.
10 Well over half, and it is against that background that
11 it seems to me that it would be desirable for somebody to
12 somehow be talking to that group as well and see what
13 they have to say.

14 MR. SEYFRIT: We have talked to a number of them
15 because they show up on other jobs. As he indicated, about
16 a third of them leave because they can make more money
17 some place else and we see some of those showing up in other
18 places.

19 COMMISSIONER BRADFORD: Yes, but you wouldn't
20 be talking with them some place else. You have got to
21 systematically go after this group.

22 MR. SEYFRIT: Right.

23 COMMISSIONER BRADFORD: Again, reading from the
24 summaries I couldn't tell, they are signed at the end, and
25 the signature comes under the statement: "To the best of my

1 knowledge and belief, this statement is true." Is that
2 a sworn statement?

3 MR. MURRAY: It is.

4 MR. SEYFRIT: I think we were going to try and
5 clarify in the body of the report, the first Appendix in
6 there are sworn statements, that is, where you have
7 statements, and it is entitled at the top uniquely, and
8 I can't remember the exact title.

9 Then the second part of it, where there are
10 statements indicated there are summaries of other
11 interviews. Now, all of those that come under the heading
12 of "Summary of Statements" are sworn statements, but they
13 have been summarized here in order to try to protect the
14 identify of the individuals.

15 COMMISSIONER BRADFORD: I see, but if in fact,
16 anything in one of those statements were to turn out to
17 be deliberately false, that would be a prosecutable
18 violation in itself.

19 MR. SEYFRIT: That's correct.

20 MR. MURRAY: It would be in violation of the law.

21 MR. SHEWMAKER: All of those in Appendix 2 are
22 signed sworn statements. Those that have been excluded
23 are summary statements.

24 COMMISSIONER BRADFORD: I guess I don't have any
25 other questions, but just a comment though.

1 I'm struck by what seems to be a fairly wide-
2 spread network of undesirable events, violations, what
3 have you, but especially so in light of the fact that this
4 is your 5th or 6th investigation of this or similar
5 problems with this company. This would be striking enough
6 if it were the first investigation. They seem to be
7 very slow learners and so I would certainly be supportive
8 of ---

9 CHAIRMAN AHEARNE: Eleven.

10 COMMISSIONER BRADFORD: Eleven such investigations
11 Well, in any case, the point is that it all takes
12 on, I think, basically more seriousness than this is simply
13 the first time around.

14 CHAIRMAN AHEARNE: Has the company been cited
15 for violations prior to this?

16 MR. SEYFRIT: Yes, they have been cited a number
17 of times.

18 CHAIRMAN AHEARNE: Have there been penalties?

19 MR. SEYFRIT: There have been no civil penalties.

20 MR. STELLO: I think the answer to the question
21 that I thought about myself; you have to look at the number
22 of hours you put in to it, the number that was expressed
23 earlier, the number is higher than probably one would
24 expect.

25 I also, don't think that the licensee, until
this investigation, and the exit interviews following these

1 investigations, really had an appreciation of the problem.
2 Maybe, Carl, correct me if I'm wrong, I guess maybe it
3 would be fair to say that I don't think we really gave him
4 the impression that he really had this kind of a problem
5 until now.

6 MR. SEYFRIT: I think that's fair. I think further
7 that it would be fair to say that he, perhaps, had not
8 recognized it was that broad a problem. The previous
9 investigations were spread out over a period of time, and
10 in general they were conducted to look in to specific
11 allegations on specific points and we just simply didn't
12 broaden them to look at this kind of perspective.

13 One can certainly look in hindsight that maybe
14 we ought to have looked in to it, and we didn't see at
15 the time, a legal reason to do that. We were trying to
16 take care of specific problems as they came up.

17 COMMISSIONER BRADFORD: I have one specific
18 question that I skipped over.

19 One of the interviews it was said that one of
20 the supervisors said words to the effect: "Whenever you
21 call the NRC, I will find out about it. I will find out
22 about it, I will know who caused trouble."

23 Now, I gather that particular guy would deny
24 making a statement in quite that way, but you do, in fact,
25 in looking at these allegations, look in to the allegation

1 if Brown & Root got a call from us, every time he had
2 a call expressing concern.

3 MR. SEYFRIT: I think that OIA is looking in to
4 that, to the best of my knowledge.

5 MR. FORTUNA: No.

6 COMMISSIONER BRADFORD: OIA is not looking in to
7 that?

8 MR. SHEWMAKER: Let me address that. We picked
9 up that same thing in the report, and that is one of the
10 allegations that has not been investigated. In fact, we
11 are hoping that OIA will pick that up.

12 MR. FORTUNA: We will now.

13 MR. SHEWMAKER: We have that one. We will be
14 getting with you.

15 MR. THORNBURG: I think Dick did look in to this
16 a little bit. Dick Herr was our investigator.

17 MR. HERR: In fact, you will find that he
18 did admit saying those words. I confronted him on that.

19 COMMISSIONER BRADFORD: At least in the summary,
20 he just gives a different twist to it.

21 MR. HERR: But he did admit saying the words:
22 "Everytime somebody goes to the NRC, I'm going to find
23 out about it." He admits that, then he says, but what
24 I meant was, when they come down here they do the
25 investigation, then I find out. He says I don't have to

1 explain how. He said it was true, the guy said it, but
2 he put a different intrepretation on it.

3 COMMISSIONER BRADFORD: There is clearly an
4 ambiguity there. The person alleging it said something
5 to the effect that every time a complaint is made, I get
6 a call that tells me who made it. It is that telling him
7 who made it part that disturbs me.

8 MR. STELLO: Yes. We will look in to it.

9 MR. SHEWMAKER: It is not defined as allegation
10 18-A, that particular one.

11 CHAIRMAN AHEARNE: I need a vote to close this
12 meeting.

13 All in favor?

14 (Chours of ayes.)

15 CHAIRMAN AHEARNE: John, you say I should also
16 ask to look at the transcript to see which portions can
17 be released.

18 MR. HOYLE: Yes, we should ask the staff to
19 look at those portions to see which parts should be
20 released.

21 MR. STELLO: I would hope that I would not have
22 to release this transcript until at least after we
23 decided on the enforcement.

24 COMMISSIONER BRADFORD: I would vote to withhold
25 it as a practical matter.

CHAIRMAN AHEARNE: Yes, so would I.

1 COMMISSIONER HENDRIE: I would join that. I
2 must say, I didn't find any of the discussion which is likely
3 to be separable and releasable in a contemplated enforcement
4 process.

5 CHAIRMAN AHEARNE: Thank you very much.

6 (Whereupon, the meeting was concluded at 4:55
7 p.m.)

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*Article 100.002
Procedural
part 100.002
f. (1) (a) (1)*

RESULTS OF INVESTIGATION INTO
ALLEGATIONS OF HARASSMENT OF QUALITY CONTROL
INSPECTORS AT THE SOUTH TEXAS PROJECT

PURPOSE OF INVESTIGATION

- . INVESTIGATE CURRENT (NOV. 1979) ALLEGATIONS OF HARASSMENT, INTIMIDATION OF CONTRACTOR QUALITY CONTROL INSPECTORS AT THE SITE.
- . REVIEW EFFECTIVENESS OF QUALITY ASSURANCE PROGRAM IMPLEMENTATION.

BACKGROUND

- . SERIES OF ALLEGATIONS MADE DURING THE PERIOD FEBRUARY 1977 TO NOVEMBER 2, 1979. MOST OF THE ALLEGATIONS WERE NOT SUBSTANTIATED.
- . CONSIDERABLE MEDIA INTEREST.
- . CONGRESSIONAL INTEREST.
- . MIDTERM QUALITY ASSURANCE INSPECTION SCHEDULE MOVED UP ONE YEAR (TO AUGUST 10, 1979) - SOME COMMON PROBLEMS IDENTIFIED.
- . FBI INVESTIGATION - JUNE 1979 - OCTOBER 1979.
- . DEPARTMENT OF JUSTICE EXPRESSED INTEREST.
- . OIA LOOKING INTO HISTORY OF ALLEGATIONS WITH IE TECHNICAL ASSISTANCE.
- . RESIDENT INSPECTOR ASSIGNED AUGUST 26, 1979.
- . ALLEGATIONS MADE BY WORKERS TO RESIDENT INSPECTOR ON NOVEMBER 2, 1979.
- . DIRECTOR, IE DIRECTS INVESTIGATION NOVEMBER 3, 1979.

INVESTIGATION

- . MULTIDISCIPLINE TEAM
- . UNDER HQ DIRECTION
- . REGIONS I, II, III, IV REPRESENTED
- . FORMAL INTERVIEWS - 57 (24 STATEMENTS UNDER OATH)
- . LESS FORMAL INTERVIEWS - 50
- . TIME PERIOD - NOVEMBER 10, 1979 TO FEBRUARY 7, 1980
- . 1113 INSPECTOR HOURS
- . AREAS COVERED
 - CATEGORY I CONCRETE AND STRUCTURES DIRECTLY ASSOCIATED WITH THE ALLEGATIONS
 - SOILS
 - WELDING/NDE

 - HANDLING OF NONCONFORMANCE REPORTS
 - AUDITS

RESULTS OF INVESTIGATION

- . NUMBER OF ALLEGATIONS SUBSTANTIATED REGARDING CONTRACTOR BROWN & ROOT QC INSPECTORS (CIVIL)
 - THREATS
 - HARASSMENT
 - INTIMIDATION
 - LACK OF MANAGEMENT SUPPORT
 - PRODUCTION PRESSURES
- . AMOUNTS TO LACK OF REQUIRED INDEPENDENCE OF QA FUNCTION
- . OTHER SIGNIFICANT QUALITY RELATED PROBLEMS
 - QUALITY OF CERTAIN PLANT BACKFILL QUESTIONED
 - WELD QUALITY/WELDER QUALIFICATIONS
 - DISPOSITION OF NONCONFORMANCE REPORTS
 - ADEQUACY OF AUDITS
- . A NUMBER OF ITEMS FOR FOLLOWUP
- . TOTAL OF 22 ITEMS OF NONCOMPLIANCE
- . NO CLEAR TRACK TO GENERICALLY DEFICIENT SYSTEMS, STRUCTURES OR

CONCLUSIONS

- . QUALITY ASSURANCE PROGRAM IMPAIRED.
- . LACK OF INDEPENDENCE OF QA INSPECTION FUNCTION - CIVIL DISCIPLINE.
- . NO CLEAR CAUSE - EFFECT RELATIONSHIP RESULTING IN DEFICIENT SYSTEMS COMPONENTS AND STRUCTURES.

CURRENT STATUS

- . IMMEDIATE ACTION LETTER IN EFFECT - COMPLEX CONCRETE PLACEMENTS SINCE DECEMBER 21, 1979 HAVE BEEN HALTED.
- . LICENSEE STOP WORK ORDER - WELDING AS OF MARCH 18, 1980. WORK IS RESUMING AS CORRECTIVE ACTION IS MADE.
- . LICENSEE HAS STUDIED WORK ENVIRONMENT. CONCLUSIONS
- . LICENSEE HAS COMMITTED TO CHANGES IN QA PROGRAM IMPLEMENTATION.

PLANNED NRC ACTION

- . CIVIL PENALTY
- . ORDER(S)
- . PUBLIC MEETING



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

191

JUN 24 1980

MEMORANDUM FOR: Karl V. Seyfrit, Director, RIV
FROM: Harold D. Thornburg, Director, Division of Reactor Construction
Inspection, IE
SUBJECT: FOLLOWUP ACTIVITIES ASSOCIATED WITH THE S. TEXAS ORDER

Both Region IV and Headquarters representatives have been and continue to be involved in the problems at S. Texas. Therefore, it is necessary in my view to delineate the responsibilities of our respective offices in assuring proper resolution and followup of these problems. Accordingly, Region IV should assume responsibility for the following items:

1. Detailed review and verification of corrective actions by the licensee on the specific items of noncompliance identified in the Investigation Report (50-498/499/79-19).
2. Detailed review and verification of corrective actions on the commitments made in the licensee's responses to the Order.
3. Provide RCI with written status reports on the licensee's and Region IV's activities relating to the Order at appropriate intervals but not to exceed intervals greater than 2 weeks. (These status reports are not intended to replace the formal inspection reports.)
4. ^{done} Make arrangements for a public meeting. Meeting should be scheduled at Bay City, Texas 2 to 3 weeks following receipt of the HP&L response (due end of July). Public announcement of the meeting should be made as a minimum, two weeks before the scheduled date. These and other details should be coordinated with Headquarters.
5. ^{done} Prepare a draft Commission paper summarizing the S. Texas problems and providing the basis and justification for lifting or continuing the Order as appropriate. This paper will probably be needed in late August or early September.

In carrying out these duties, particularly items 1, 2 and 3, the services of the resident inspector should be utilized to the greatest extent possible

CONTACT: G. W. Reinmuth, IE
49-27551



Seyfrit
No. 15

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K. V. Seyfrit

- 2 -

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because of his unique knowledge of the issues derived from his earlier participation on the special investigation team. Other members of that team or RCI staff knowledgeable in specific areas may also be called upon for assistance as necessary.

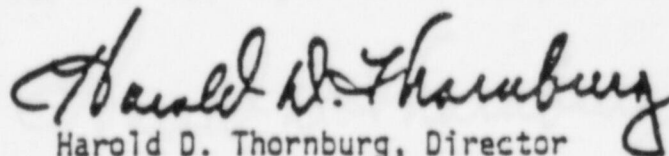
Headquarters RCI will be responsible for the following:

1. Reviewing and providing comments on adequacy of the responses to the Order received from the licensee. Region IV input will be solicited. Completion of review is tentatively planned for 30 days following receipt of licensee's reply.
2. Monitoring the reviews, verifications and status reports provided by Region IV. Visits to the site will be made by RCI staff as well as the investigation team leader under the direction of RCI.
- 1enc
/ 3. Conducting the public meeting (V. Stello). Selected Region IV representatives will be invited to participate.
4. Reviewing any other reports addressing the S. Texas Order. (OIA, other)
5. Making the final decisions regarding licensee satisfaction of the conditions of the Order. Region IV will be requested to concur in major decisions.
6. Communicating decisions/actions/requests regarding the case to the Commission, other NRC offices, others as necessary and to Region IV management.

It should be noted that the Immediate Action Letters relating to items also covered by the Order should be considered a part of the same action as the Order. Accordingly, Region IV should not take unilateral action in rescinding or closing out the IAL's.

Other routine inspections of the S. Texas project in accordance with the normal planned inspection program should continue in a normal manner. These should be administered and conducted separately from those activities associated with the Order.

Communications on these matters should be made directly to me, Taylor, Reinmuth or Shewmaker. The cooperation, received from Region IV in the past and expected in the future, is appreciated.



Harold D. Thornburg, Director
Division of Reactor Construction
Inspection, IE

K. V. Seyfrit

- 3 -

JUN 24 1960

cc: V. Stello, IE
J. Cummings, OIA
R. C. DeYoung, IE
D. Thompson, IE
B. H. Grier, RI
J. P. O'Reilly, RII
J. G. Keppler, RIII
R. H. Engelken, RV
D. Hayes, RIII
S. Phillips, RIII
R. E. Shewmaker, IE ✓
R. Compton, RII
E. Jernigan, RI
R. Landsman, RIII



April 21, 1980

OFFICE OF THE
SECRETARY

Roger
John

MEMORANDUM FOR: William J. Dircks, Acting EDO

FROM: *for* Samuel J. Chilk *JCH* Secretary

SUBJECT: STAFF REQUIREMENTS - BRIEFING ON INVESTIGATION OF QA-QC PROBLEMS AT SOUTH TEXAS NUCLEAR PROJECT, 2:50 P.M., TUESDAY APRIL 15, 1980, ROOM 550, EAST-WEST TOWERS, BETHESDA, MARYLAND (CLOSED TO PUBLIC ATTENDANCE)

The Commission* discussed the draft South Texas Investigation Report, which was forwarded to the Commission on April 11, 1980.

The Commission requested:

1. That I&E point out in the enforcement package that deficiencies in the Brown & Root QA-QC program are the reason for the enforcement action; (I&E) (SECY Suspense: 4/25/80)
- 2. That OIA investigate whether an NRC employee was informing Brown & Root of complaints made to NRC and of the individual complainants' identity; (OIA) (SECY Suspense: 5/16/80)

6/16/80 (Contacted...)
with... 3 days

Commissioner Bradford requested:

3. That I&E interview civil QC inspectors who had terminated their employment at the site. (I&E) (SECY Suspense: 4/30/80)

cc:
 Chairman Ahearne
 Commissioner Gilinsky
 Commissioner Kennedy
 Commissioner Hendrie
 Commissioner Bradford
 Commission Staff Offices

* Commissioner Kennedy was not in attendance.

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DEPOSITION
EXHIBIT

Seiffert
10.16

App. B-16
A-15



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

JAN 09 1980

195

December 31, 1979

ST-AE-HL-363

U-0110

RECEIVED

JAN 3 1980

G. W. OPREA

In Reply Refer To:
RIV
Docket No. 50-498/499

FILE COPY

Houston Lighting and Power Company
ATTN: Mr. G. W. Oprea
Executive Vice President
P. O. Box 1700
Houston, Texas 77001

Gentlemen:

This refers to a special inspection at the South Texas construction site during the past six weeks, meetings with you and members of your staff on December 21 and 28, 1979, and to your letter dated December 28, 1979.

As a result of our special inspection effort, a number of problems associated with the placement of concrete were identified and discussed with you. Consequently, we understand that you:

1. Have initiated a Nine-Point Corrective Action Program to eliminate problems connected with concrete placement and inspection activities. (The Nine-Point Corrective Action Program is contained in your December 28 letter.)
2. Plan to limit safety related concrete placements to placements classified as Non-Complex until such time as the Nine-Point Corrective Action Program has been fully implemented.
3. Plan to notify the Region IV Office when you have implemented the Nine-Point Corrective Action Program and such notification is to occur at least 48 hours prior to the resumption of safety related, complex concrete placement to permit NRC verification of satisfactory implementation of the Corrective Action Program.

If your understanding of this matter is inconsistent with the above, please contact this office immediately.

Sincerely,

Karl V. Seyfrit
Karl V. Seyfrit
Director

~~8002050282~~


lp

DEPOSITION
EXHIBIT

Seyfrit
No. 17

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

B-17



OFFICE OF THE
SECRETARY

CERTIFICATION:

I hereby certify that the attached 26 pages contain a true copy of the letter dated Jan 28, 1981 from K.V. Seyfrit to Brown & Root, INC. concerning the LCVIP audit conducted by Mr. D.F. Fox on January 5-8, 1981 together with that letter's attachments. on file with the United States Nuclear Regulatory Commission's Public Document Room, 1717 "H" Street, N. W., Washington, D.C.

August 19, 1984
Date

Elizabeth C. Shelburne
Official Custodian of the Records
of the Public Document Room
Office of the Secretary of the
Commission

(SEAL)

**DEPOSITION
EXHIBIT**
*Seyfrit
No. 18*

B-18

UNITED STATES —
NUCLEAR REGULATORY COMMISSION

REGION IV

611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76011

28 JAN 1981

PDIC-HWS
(197

Docket No. 99900502/81-01

Brown and Root, Incorporated
Attn: Mr. W. M. Rice
Group Vice President, Power Group
4100 Clinton Drive
Post Office Box 3
Houston, Texas 77001

Gentlemen:

This refers to the QA Program Inspection conducted by Mr. D. F. Fox of this office on January 5-8, 1981, of your facilities at Houston, Texas, and to the discussions of our findings with you and members of your staff at the conclusion of the inspection.

Areas examined during the QA Program inspection and our findings are discussed in the enclosed report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During this inspection it was found that the implementation of your QA Program failed to meet certain NRC requirements. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

Please provide us within twenty-five (25) days of the date of this letter a written statement containing, (1) a description of steps that have been or will be taken to correct these items, (2) a description of steps that have been or will be taken to prevent recurrence, and (3) the dates your corrective actions and preventive measures were or will be completed.

You will note that Deviation A of the enclosed Notice of Deviation is related to management failure to assure compliance with committed corrective action that was contained in your letter of December 16, 1980, responding to NRC inspection report 99900502/80-03. Specifically, qualification and training files of all engineering personnel performing safety related work on the South Texas Project were not updated by December 31, 1980 as committed.

This is the third inspection in which committed corrective actions or preventive measures for previous inspection findings were found to be not completed as committed. Reference Report No. 99900502/80-01, Deviation A and 99900502/80-02, Deviation A.

This suggests a breakdown in the effective implementation of the Brown & Root Quality Assurance Program for the South Texas Project.

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Brown and Root, Inc.

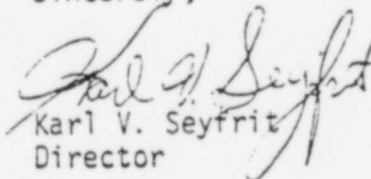
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Consequently, in your response, in addition to correcting of the specific deviations identified the Notice of Deviation enclosure, please define the specific steps that you have taken, or plan to take, to assure that management commitments will be performed as stated and be effectively implemented.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If the report contains any information that you believe to be proprietary, it is necessary that you submit a written application to this office within thirty (30) days of the date of this letter, requesting such information be withheld from public disclosure. The application must include a full statement of the reasons why it is claimed that the information is proprietary. The application should be prepared so that any proprietary information identified is contained in an enclosure to the application, since the application without the enclosure will also be placed in the Public Document Room. If we do not hear from you in this regard within the specified period, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be please to discuss them with you.

Sincerely,


Karl V. Seyfrit
Director

Enclosures:

1. Notice of Deviation
2. Inspection Report No. 99900502/81-01

Brown and Root, Inc.
Socket No. 99900502/81-01

NOTICE OF DEVIATION

Based on the results of an NRC inspection conducted January 5-8, 1981, it appears that certain of your activities were not conducted in accordance with NRC requirements.

- A. Brown and Root letter of response dated December 16, 1980, described corrective actions and preventive measures for the four deviations identified in I&E Inspection Report 99900502/80-03. Brown and Root committed to a completion date no later than December 31, 1980, for all action related to Notice of Deviation, Items A and B.

Contrary to the above, corrective action for Notice of Deviation, items A and B, was not completed as committed. (See Details Section I, paragraphs B.10 and B.11.)

- B.* South Texas Project Engineering Procedures STP-DC-007 (Preparation and Control of System Design Descriptions) and STP-DC-019 (Technical Reference Control) state that design criteria documents, in conjunction with System Design Descriptions, comprise the STP Design Manual. Design criteria documents may be issued as Technical Reference Documents which are reviewed, approved, distributed to Assistant Engineering Project Managers, Discipline Project Engineers, Project Quality Engineers and others by the Engineering Document Control Center and made available for use on the South Texas Project. Technical Reference Documents require the signed approvals of the Originator (as applicable), the Discipline Project Engineer, Project Quality Engineering, the Engineering Project Manager, and Quality Assurance and/or the Client (as required).

Contrary to the above, Technical Reference Document A010PQ003-A (Penetration Sealing System) and six (6) others that were issued and distributed in mid 1978 by the Engineering Document Control Center, and that were contained in the STP Design Manuals assigned to the Assistant Engineering Project Manager, the Discipline Project Engineer and the Project Quality Engineer, did not exhibit the required signatures of the Discipline Project Engineer, the Project Quality Engineer, the Engineering Project Manager and Quality Assurance to document their review and approval of the documents. Refer to report section I.C.3.a.(1) for details.

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C.* Section 6.3.1. of the South Texas Project Quality Assurance Manual states in part that "To ensure that the responsible engineering personnel are working to the latest revision or issue of an Engineering document, a comprehensive document status list shall be published at least every two months by the EDCC (Engineering Document Control Center).

Contrary to the above, a comprehensive document status list has not been published, nor updated, bi-monthly by the EDCC since October 2, 1980.

Refer to report section I.C.3.a.(2) for details.

*Denotes deviations from the requirements of Criterion V of Appendix B to 10 CFR 50 that states in part, "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, or a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. . . ."

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900502/81-01

Program No. 51200

Company: Brown and Root, Incorporated
Power Engineering
4100 Clinton Drive
Post Office Box 3
Houston, Texas 77001

Inspection Conducted: January 5-8, 1981

Inspectors:

D F Fox

D. F. Fox, Principal Inspector
Program Evaluation Section
Vendor Inspection Branch

1/23/81

Date

D F Fox for

D. G. Breaux, Inspector
Program Evaluation Section
Vendor Inspection Branch

1/23/81

Date

Approved by:

C J Hale

C. J. Hale, Chief
Program Evaluation Section
Vendor Inspection Branch

1-27-81

Date

Summary

Inspection on January 5-8, 1981 (99900502/81-01)

Areas Inspected: Implementation of Title 10 CFR 50, Appendix B and Topical Report B&R-002A, including follow-up on previous inspection findings, design document control, procurement source selection, and supplier nonconformance and corrective actions. The inspection involved seventy (70) inspector-hours on site by two (2) USNRC inspectors.

Results: In the four (4) areas inspected, three (3) deviations from commitment were identified in two (2) of the areas.

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Deviations: Follow-up on Previous Inspection Findings: Corrective action committed in a Brown and Root response to a previous deviation had not been completed as scheduled (See Notice of Deviation, Item A). Design Document Control: Unapproved Technical Reference Documents were contained in the Design Manual (See Notice of Deviation , Item B). The Engineering Document Control Center did not publish a document status list as committed (See Notice of Deviation , Item C).

DETAILS SECTION I

(Prepared by D. F. Fox)

A. Persons Contacted

- *K. M. Broom, Senior Vice President, Power Group
- H. S. Cameron, Assistant Engineering Project Manager
- *J. R. Childers, Houston QA Coordinator
- *H. T. Faulkner, Project Coordinator
- *A. H. Geisler, Manager, Nuclear Licensing
- G. L. Gibson, Discipline Project Engineer, Piping Engineering
- J. F. Halsey, Manager Special Problems Group
- *J. L. Hawkes, Manager, STP Engineering
- *S. J. Kelley, Training Coordinator
- *H. W. Overstreet, QA Supervisor, Houston Lighting and Power
- J. E. Padden, Manager, Engineering Documentation
- *R. W. Peverley, Assistant Engineering Project Manager
- *J. C. Shuckrow, STP Project Coordinator, STP Project
- *R. J. Vurpillat, Manager, Quality Assurance, Power Group
- G. H. Watkins, Supervisor, Engineering Document Control Center

*Denotes those present at the exit meeting.

B. Action on Previous Inspection Findings

1. (Closed) Followup Item (Report 80-01, Section III.B.3.g). Determine if the apparent breakdown of the Brown and Root Vendor Surveillance Program was generic.

The inspector verified that a Brown and Root task force, the "Vendor Control Program," reviewed seven (7) procurement files and identified nine (9) generic areas of concern in the overall South Texas Project procurement cycle for safety related equipment.

These concerns were reported to NRC, Region IV on July 14, 1980, and a new task force, the "Vendor Control Evaluation and Correction Program" was established by Brown and Root. The task force will resolve these concerns and assure that all safety related purchase orders are sufficiently accurate and complete so as to result in the final acceptance of safety related equipment, and its documentation, by Houston Lighting and Power, for use on the South Texas Project.

We will inspect the results of this activity during our normal inspection program.

2. (Closed) Followup Item (Report 80-01, Section III.B.3.c.(1)). Determine if the apparent lack of effectiveness of the Brown and Root Vendor Surveillance Program was reportable under 10 CFR Part 21.

The inspector verified that the generic concerns related to the breakdown of the Vendor Surveillance Program were identified and evaluated by Brown and Root. The generic concerns were subsequently reported to NRC Region IV as a potentially reportable deficiency by Houston Lighting and Power Co. in their letter ST-HL-2-AE-494 dated July 14, 1980 in accordance with the provisions of 10 CFR Part 50.55(e). Separate reporting of this breakdown in the Brown and Root Quality Assurance Program by Brown and Root under the provisions of 10 CFR Part 21 is not required.

3. (Closed) Followup Item (Report 80-01, Section, III, B.3.h) Determine if the Brown and Root purchase order for Reactor Vertical Supports reflected all safety related requirements identified in the South Texas Project FSAR.

The inspector verified that this purchase order was scheduled for indepth review for inclusion of all applicable engineering, quality and regulatory requirements as part of the Brown & Root "Vendor Control Evaluation and Correction Program" prior to November 15, 1981.

4. (Closed) Deviation (Report 80-02, deviation B). Brown and Root has not implemented the overall Quality Assurance/Control Program for the South Texas Project that is described in section 17.1 of the PSAR.

The inspector verified the corrective action, generic considerations and preventive measures described in the Brown & Root letter of response dated August 8, 1980. Specifically, differences between the PSAR and the operating QA program were identified and resolved. A revised Houston Lighting and Power and Brown and Root "Quality Assurance Program for the South Texas Project" was submitted to NRC (NRR) on October 31, 1980.

Brown and Root commitment to implementing the revised QA Program was contained in a memorandum dated January 8, 1981, from the Group Vice President, Power Group, to the Quality Assurance Manager.

5. (Closed) Followup Item (Report 80-02, section I.B.6.b.(1)). Determine if the Brown and Root design for the personnel airlock with inflatable seals meets applicable requirements.
- a. With respect to the acceptability of the inflatable seal personnel airlock by NRR, Brown and Root management stated that the single active failure criteria and redundancy requirements of the Brown and Root door seal design meet, or exceed, those of the McGuire door seal design which was accepted by NRR. Significant differences between the two (with respect to the above, only) noted by the inspector are as follows.
- (1) Air lines to the STP seals do not penetrate into the containment as do the McGuire air lines.
 - (2) Solenoid valves in the air lines to the STP seals are designed to fail open as do those in the McGuire air lines. Brown and Root stated that they would evaluate the design to determine if the valves should be changed to fail closed to prevent bleedback through the instrument air supply system should an air line check valve fail.
 - (3) STP will use Class 1E pressure switches to detect seal deflation in addition to incorporating a seal leak rate detection system rather than only depend on a control room annunciator which will actuate whenever any of the seals deflate as McGuire does.
 - (4) STP plans to incorporate two independent backup air supply systems to maintain seal inflation in the event of the loss of the instrument air system rather than the singular reserve air tank system for the McGuire seals.
 - (5) The STP design does not provide for test coupons of the seal material to be located in close proximity to the airlock as does the McGuire design.
 - (6) The Brown and Root procurement documents did not include the requirement for a certificate of compliance for each door seal with respect to the ability of the seal material to withstand post accident beta radiation exposure. Brown and Root stated that this requirement will be incorporated into the next revision of the design specification (2C269 SS06) for the airlock.

- b. With respect to the adequacy of the Brown & Root inflatable seal airlock design, the inspector determined that design specification was verified in accordance with established procedures. The design was also evaluated using a Failure Mode and Analysis Technique which identified several potential deficiencies that were subsequently corrected. However, the inspector identified several technical concerns with respect to door and seal pressure retention capability. As a result of these and other unanswered questions, Brown and Root management stated that they would conduct a documented formal multidisciplinary design review of the personnel air lock design during the first quarter of 1981.

6. (Closed) Followup Item (Report 80-02, Section I.D.3.c.(1)). Verification of design inputs to stress calculations that are taken from stress isometrics could not be confirmed.

Brown and Root management stated that a stress isometric drawing is only a transcription (reproduction) of a certain portion of a piping system taken from a design verified composite piping drawing and is only used to aid in visualizing the piping system layout when stress calculations and hanger locations are determined for the system. Stress isometric drawings are checked for completeness and correctness against the composite piping drawing by a checker in accordance with procedure STP-DC-002.

The inspector verified that the Stress Analysis Group (which is now part of the Support Design Group) did verify the accuracy of the type and location of supports shown on stress isometric drawings generated by them.

7. (Closed) Followup Item (Report 80-02, Section II.B.1.a) Evaluation of the Consequences of the potential misuse of uncertified personnel for performing vendor surveillance activities.

Brown and Root management stated that they have found no evidence to date that unqualified (as distinct from uncertified) individuals performed particular inspections.

8. (Open) Followup Item (Report 80-02, Section II.C.3.e) The status of the Brown and Root Vendor Control Evaluation and Correction Program will be evaluated.

The program consists of seven phases which implement the Brown and Root Management commitment to NRC to define (and subsequently execute) a program that provides for a complete and thorough review and audit of the procurement documents, vendor control and surveillance activities, and release of safety related equipment and material to the site that is in full compliance with all Brown and Root and Houston Lighting and Power commitments to NRC.

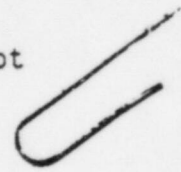
The phases, approximate status, and revised initiation and completion dates provided to, or determined by, the inspector are as follows:

- a. Establish Priorities and Schedule - June 15 thru January 31, 1981 - 85% Complete versus 41% projected.
- b. Generate "PO Baseline Requirements" - November 3, 1980 thru June 30, 1981 - 15% Complete versus 54% projected.
- c. Independent NUS Audit - September 1, 1980 thru September 15, 1981 - 10% Complete versus 38% projected.
- d. Resolution of Audit Findings - February 15, 1981 thru September 30, 1981.
- e. Update Purchase Orders - March 1, 1981, thru October 15, 1981.
- f. Correct Vendor Deficiencies - March 15, 1981, thru October 31, 1981.
- g. Release of Equipment & Materials - February 15, 1981 thru November 15, 1981.

Procurement of safety related equipment and materials will be closely monitored by NRC during future inspections.

9. (Closed) Violation (Report 80-03). Failure to meet 10 CFR Part 21 posting requirements in the facility where safety related piping stress analysis and pipe hanger design activities were being conducted.

The inspector verified the corrective action and preventive measures described in the Brown & Root letter of response dated December 16, 1980. Abbreviated notices containing Section 206 of the Energy Reorganization Act and that describe the content and location of the 10 CFR Part 21 Regulations and procedures, as well as the individual to whom reports may be made, were posted in a conspicuous position at all locations where safety related activities were being conducted. Quality Assurance Management committed to verify the posting at all locations on at least a quarterly basis.

10. (Closed) Deviation (Report 80-03, deviation A) Qualification records of engineering personnel conducting safety related activities were not being maintained.
- 

Brown and Root did not update the qualification record files of all engineering personnel conducting safety related activities on the South Texas Project by the committed date of December 31, 1980. This is a deviation from commitment. See Notice of Deviation, Item A.

Brown and Root updated all qualification and training record files of engineering personnel during the inspection. The files were less than 18% complete at the time the deviation was issued and were approximately 65% complete by December 31, 1980. Brown and Root Design Quality Engineering reportedly did not sign off or approve any documents for issue since January 1, 1981, that were originated or signed by any individual whose qualification or training record was incomplete or inadequate.

The inspector verified that a full time Training Coordinator was assigned to Engineering, the Engineering Procedure For Training (STP-PM-006) was revised, and that the files are currently being maintained in the access controlled office of the Training Coordinator.

11. (Closed) Deviation (Report 80-03, deviation B). Training records of engineering personnel conducting safety related activities were incomplete or non-existent.

Brown and Root did not update the training record files of all engineering personnel conducting safety related activities on the South Texas Project by the committed date of December 31, 1980, See Notice of Deviation, Item A.

Refer to item 10 above for additional details.

12. (Closed) Deviation (Report 80-03, deviation C) Hanger design and fabrication drawings were design verified and approved with duplicate identification numbers. Pipe fabrication isometric drawings were revised and issued without using the next sequential revision number.

The inspector verified the corrective action and preventive measures described in the Brown and Root letter of response dated December 16, 1980. Specifically:

- a. With respect to drawings being approved with duplicate identification numbers: (1) all affected drawings were corrected; (2) the potential for duplicate numbers being affixed to more than one drawing appeared to be restricted to the Support Design Group in that their drawing numbers convey intelligence (ie, the actual location of the support or hanger) whereas drawings issued by other Brown and Root design activities do not; (3) the procedure for Drawing Control (STP-CD-002) will be revised by January 31, 1981 to require the Discipline Project Engineer to

verify that the drawing number is both correct and unique prior to his signing the drawing; (4) The Engineering Document Control Center Computer Program for logging in newly issued design documents will not accept a new entry if the total identification number is a duplicate of an already existing listed number.

- b. With respect to pipe fabrication drawings being revised to indicate the type and location of pipe supports and issued without using the next sequential revision number, the title block of all such drawings issued in support of, or as part of, a calculation package will be crossed out to prevent subsequent inadvertent use of the wrong revision of the drawing by the contractor. The original drawing will then be revised to reflect the type and issued as the next sequential revision of the drawing.
13. (Closed) Unresolved Item (Report 80-03, Section I.D.3.b(1)). Documentation made available during the inspection did not appear to substantiate that significant safety hazards were evaluated, documented, and reported in accordance with the provisions of 10 CFR Part 21.

The inspector determined that during the first quarter of 1981:

- a. Existing files on safety concerns will be reviewed for inclusion of pertinent data relating to the safety concern. Sufficient information will be retained in the file such that the history and status of the safety concern will be clearly defined and that will assure meeting the record retention requirements of Section 21.51 of 10 CFR Part 21.
 - b. The Engineering Document Control Center will retain all files on safety concerns.
 - c. The Procedure for Evaluating and Reporting of Defects, Noncompliances and Deficiencies, STP-PGM-022, is being revised.
 - d. Quality Assurance will audit for compliance with 10 CFR Part 21 requirements on a quarterly basis for at least the next year and annually thereafter.
14. (Open) Unresolved Item (Report 80-03, Section I.D.3.b.(2)) An apparent violation exists in that Brown and Root was not adhering to their procedure for implementing 10 CFR Part 21 requirements.
- The matter has been forwarded to NRC headquarters for evaluation to determine the appropriate enforcement action to be taken.
15. (Open) Followup Item (Report 80-03, Section I.B.4) Verify implementation of a management plan to assure that Commitment to NRC will be performed as stated and be effectively implemented.

Brown and Root developed a routine system and a followup form (NRC Action Item Commitment List) which was implemented on inspection 80-03. In view of the recurrence of Brown and Root management not meeting one of their commitments for the last (80-03) inspection, Brown and Root Power Group executive management issued two memoranda to Quality Assurance on January 8, 1981, which contain provisions for preventing recurrence of the failure to complete corrective action as committed. The memoranda state that:

- a. All Brown and Root commitments shall be met in the performance of our responsibilities on the project.
- b. Each NRC identified deviation, unresolved item, or other outstanding item will be listed (as well as the individual responsible for action thereon) and distributed accordingly.
- c. An internal commitment date is to be established which is earlier (generally two weeks) than the date committed to NRC.
- d. Quality Assurance is responsible for following the implementation and completion of corrective actions.
- e. Prior to the commitment date to NRC, Quality Assurance is to independently verify, by review of objective evidence, that the corrective actions have been completed. The senior vice president is to be notified for each specific failure to complete corrective action.
- f. The status of open B&R commitments to NRC will be reported at the regular STP - QAMRB meetings.

The effectiveness of these measures will be closely followed during future inspections.

16. (Closed) Followup Item (Report 80-03, Section I.C.3.b(1)). Objective evidence was not available that the education and experience listed on the qualification/resume sheet of all NPS (Nuclear Power Services) and ATI (Associated Technologies Incorporated) personnel who were conducting safety related activities for the Brown and Root Support Design group was in fact verified by either Brown and Root or NPS/ATI.

The inspector verified that Brown and Root requested written confirmation from both NPS and ATI that the alleged education and experience for all present and future employees assigned to the STP be verified.

NPS and ATI provided a list of their employees whose alleged education and experience had been verified along with a copy of their procedure for Employee Verification and one sample of a complete verification package. No misrepresentations were apparently uncovered to date. However, verification of the alleged education and experience for six (6) of the twenty one (21) ATI employees currently assigned to the STP had not been completed as of January 7, 1981.

Brown and Root management thereupon requested on January 7, 1981 that ATI complete the verification process for these employees and advised ATI that the verification must be done in accordance with the intent of NRC circular IEC 80-22. The manager of the Support Design Activity which deploys these six (6) ATI employees stated that only verified and qualified personnel will be permitted to perform safety related activities on the STP.

17. (Closed) Followup (Report 80-03, Section I.C.3.b(2)). Objective evidence that an approved 10 CFR 50 Appendix B quality assurance program was imposed on NPS and ATI personnel who were conducting safety related activities for STP.

The inspector verified that on January 7, 1981, the manager of the Support Design Group notified the on-site (STP project) NPS and ATI management in writing that all work done in the Brown and Root offices (on STP) is to be done under the Brown and Root Quality Assurance Program via the use of (STP) Engineering Procedures and for them to assure that their personnel are complying with the procedures.

18. (Closed) Followup (Report 80-03, Section I.C.3.b(3)). Procedures which require that sufficient records be maintained for engineering and management personnel assigned to safety related nuclear projects to furnish objective evidence of their qualification to perform their assigned duties and responsibilities were not available during the inspection.

Brown and Root Power Division Procedure DL 035 dated June 10, 1980 (Procedure for Verification of Education and Experience) defines the process for verifying the educational background and prior job experience of new Brown and Root employees.

The Group Vice President, Power Group, stated in his memorandum of October 28, 1980 that:

- a. The Power Group will assume the responsibility for checking (verifying) each new Power Group professional as they are hired (using procedure DL 035) beginning May 21, 1980.

- b. Letters were mailed on September 15, 1980, requesting documented evidence of the educational background and prior job experience for each STP engineer, designer and project control professional employed prior to May 21, 1980.
- c. Most of the responses have been returned, examined, and placed in the individual's file.
- d. Adherence to Power Group Procedure DL-035, and surveillance of contract companies, will assure that every professional person working on any Power Group job will have documented evidence of his or her education and work experience.

This item completes an Inspection of employment practices at Brown and Root in that: (1) the education and work experience information contained in employees' job applications are being verified by the employing organization; and (2) there is objective, documented evidence/records that attest to the education and experience of both permanent and contract employees.

C. Design Document Control

1. Objectives

To determine if approved procedures have been established and are being implemented for the control and distribution of design documents that provide for:

- a. Identification of personnel, positions, or organizations responsible for preparing, reviewing, approving, and issuing design documents.
- b. Identification of the proper documents to be used in performing the design.
- c. Coordination and control of design (internal and external) interface documents.
- d. Ascertaining that proper documents, and revisions thereto, are accessible and are being used.
- e. Establishing distribution lists which are updated and maintained current.

2. Methods of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the following documents to determine if procedures have been established to control design document generation, review, approval, distribution, and use in the areas identified in objectives a. through e. above:
- (1) Sections 17.3, 17.5, and 17.6 of the MRC accepted (Brown and Root) Topical Report B&R-002A (Quality Assurance Program for Nuclear Power Plants) Revision 3, including changes made thru March 24, 1980, to determine the Brown and Root Corporate programmatic commitments relative to the control of design documents.
 - (2) Sections 3, 5, and 6 of the B&R STP (South Texas Project) Quality Assurance Manual to determine if the corporate commitments relative to control of design documents were correctly translated into quality assurance requirements and procedures.
 - (3) Thirteen (13) applicable procedures contained in the STP Engineering Procedures Manual to determine that the STP quality assurance program requirements and procedures were correctly translated into a viable engineering program for control of design documents.

- h. The following documents were reviewed to determine if the quality assurance program for control of design documents was being effectively implemented on current design activities affecting quality by the B&R engineering organizations:

Six (6) Calculations,
Three (3) Design Manuals,
Three (3) Design Verifications,
Twenty (20) Internal & Foreign Drawings,
Two (2) Procurement Files,
One (1) Report,
Three (3) Specifications,
Two (2) System Design Descriptions, and
Nine (9) Technical Reference Documents.

3. Findings

a. Deviations from Commitment

Two (2) deviations from commitment were identified in this area of the inspection. See Notice of Deviation, Items B & C.

(1) With respect to Deviation B:

- a. The STP Design Manual (DM) is controlled assemblage of approximately 200 System Design Descriptions (SDD)

and design criteria documents such as Technical reference Documents (TRD). The Manual describes the salient features of the STP design; defines the requirements for its structures, systems and components; provides design criteria, specifications, procedures, analyses and guidance; and identifies directly, or through references, the design inputs that provide the point or origin for the system descriptions contained therein.

- (b) Two (2) issued TRDs examined by the inspector and five (5) additional TRDs subsequently found by the STP Design Quality engineer in each of the three DMs examined did not exhibit evidence of the required review and approval signatories. These TRDs were issued through the official Brown and Root Engineering Document Control Center.

Although six (6) of the seven (7) TRDs contained a statement in their abstract that they were issued for review and comment, no such disclaimer appeared in the "body" of the document that would be used or referenced by the designer. One such document was BL369RQ014 - A, dated July 5, 1978, and entitled "Typical Pipe Supports for 6" Nominal Diameter Pipe and Under." This TRD was contained in the Design Manual located at the pipe hanger and support activity. While there is no evidence that this unapproved procedure was used to actually provide guidance and/or input to the design of safety related pipe supports, its very presence in the facility where the design activity was ongoing offers the potential for its inadvertent misuse.

(2) With respect to Deviation C:

- (a) Section 6.0 of the STP Quality Assurance Manual states that a comprehensive document status list shall be published at least every two months by the EDCC (Engineering Document Control Center) to ensure that the responsible engineering personnel are working to the latest revision or issue of an Engineering document.
- (b) Contrary to this procedure, the responsibility for issuing an engineering document status list has been assigned to a different activity, the Computer Support Group, that does not provide the same controls for the accuracy of their data base as does the EDCC.

D. Exit Meeting

An exit meeting was conducted with Brown and Root management personnel at the conclusion of the inspection on January 8, 1981. In addition to those individuals indicated by an asterisk in the Details Sections of this report, the meeting was attended by:

W. M. Rice, Group Vice President, Power Group
K. A. Swartz, Senior Engineering Manager
P. S. Jordan, Nuclear Licensing Staff Manager
K. R. Cook, Deputy Project General Manager
J. R. Orlando, QA Coordinator, Vendor Surveillance
R. P. Negri, Assistant Quality Assurance Manager
C. E. Bingman, Assistant Manager, Vendor Surveillance

The inspector discussed the scope of the inspection and the details of the findings identified during the inspection and the form and content of letters of response to NRC inspection reports. Management comments were generally for information only or for acknowledgement of the statements of the inspector with respect to the deviations presented.

DETAILS SECTION II

(Prepared by D. G. Breaux)

A. Persons Contacted

- *P. J. Bulten - VCP QA Task Force Leader
- R. G. Burnette - B&R/HL&P Lead Coordinator
- *J. R. Childers - QA Coordinator
- H. T. Faulkner - Project Coordinator
- E. J. Manning - Supervisor QA Manual Review
- R. C. McMahill - Senior Engineer
- T. J. Ries - Regional Coordinator Vendor Surveillance

*Denotes those present at the exit meeting.

B. Procurement Source Selection1. Objectives

The objectives of this area of the inspection were to verify that procedures have been established and implemented for the selection of qualified suppliers of services, materials, parts and components that provide for:

- a. Requirements for evaluation of the potential supplier's capability to provide items or services in accordance with the technical and quality assurance specifications of the procurement documents.
- b. Methods of evaluating potential suppliers that are consistent with applicable regulatory, code and contract requirements and should include source evaluation audits, review of historical performance, and/or review and evaluation of the supplier's QA program, manual and procedures.
- c. Consideration of the complexity, inspectability and safety significance of purchased items or services when selecting the method of source evaluation.
- d. Performance of source evaluation audits that include appropriate checklists or instructions for systematic review of the prospective supplier's QA system.

- e. Qualification requirements for personnel performing source evaluation audits.
- f. Source selection being based on historical product performance that includes review of past procurement and operating experience with identical or similar items and is limited to relatively simple services or off-the-shelf items.
- g. Periodic re-evaluation of suppliers and that an up-to-date listing of the evaluation status is being maintained.
- h. Distribution of supplier evaluation status documents to purchasing and assuring that contracts are awarded only to companies designated in these documents.
- i. Measures to assure that the supplier's bid conforms to the procurement document requirements and that resolution of unacceptable conditions identified during bid evaluation are corrected before the contract award.

2. Method of Accomplishment

The preceding objectives were accomplished by reviewing the following documents relative to the Brown and Roots Quality Assurance Program.

- a. The appropriate sections (policies and procedures) of the recently revised, (as of October 31, 1980) "Brown and Root, Inc. Quality Assurance Program Description During Design and Construction of the South Texas Project Electric Generating Station" were reviewed to determine that commitments to quality were reflected in the area of procurement source selection.
- b. The following procedures were reviewed in the South Texas Project Quality Assurance Procedures Manual to assure that quality related commitments were being procedurally implemented.
 - (1) ST-QAP-4.2, "Houston Purchasing Activities"
 - (2) ST-QAP-7.1, "Vendor Surveillance Organization"
 - (3) ST-QAP-7.2, "Vendor Surveillance and Houston Coordination Activities"
 - (4) ST-QAP-15.4, "Trend Analysis"

(5) ST-QAP-18.1, "Audit Program"

c. To assure that the previously reviewed quality commitments were being properly and effectively performed with respect to procurement source selection, the following documents were reviewed:

- (1) Four (4) South Texas Project procurement files on selected purchase orders from the Purchasing Department were shown to contain Pre-Award procurement activities such as:
 - (a) QA Department Quality Assurance Vendor Questionnaire
 - (b) Engineering Capability and Experience Questionnaire
 - (c) Pre-Award Facility Survey
 - (d) Commercial, Technical, and Quality Assurance evaluations
 - (e) Final recommendation of award for license approval.
- (2) South Texas Project Approved Vendor List, dated December 23, 1980 was checked for proper distribution and timely updating.
- (3) Five QA Manual Review reports conducted by the QA Audit Section were reviewed for content and proper manual status follow-up.
- (4) Three (3) Vendor Pre-Award Survey's conducted by the QA Audit Section were reviewed for content and proper review.
- (5) The Audit Deficiency Report (ADR) Trend Analysis System was examined to see that Quality Commitments are being met and that the system is in place and functioning.
- (6) Documents being gathered by the Vendor Control Program Task Group, in the area of Quality Assurance evaluation of the Vendor's quality program and its implementation, are listed on the QA Support Documentation List and the Vendor Control Program (VCP) Vendor History Matrix. The Document list and History matrix were reviewed for content and proper procedural implementation. Quality Assurance Support Documentation compilation that was committed to in the Vendor Control program was reviewed for content of the following document types:
 - (a) Vendor QA Manual Reviews and associated documentation.
 - (b) Preaward Survey Reports and associated documentation.

- (c) Correspondence justifying waiver of preaward evaluation activity.
 - (d) Quality Assurance bid evaluation correspondence.
 - (e) Vendor Audits and associated documentation.
 - (f) Correspondence changing QA Vendor approval status.
- (7) Five (5) Audit Deficiency Reports (ADR) were examined for content and proper review and approval.

3. Findings

a. Deviations

In this area of the inspection no deviations from commitment were identified.

b. Unresolved Items or Follow-up Items

None were identified.

c. Comments

It was observed during this inspection that the thrust of Pre-award Survey's and subsequent annual Supplier Quality Assurance Evaluation has been shifted from the responsibility of Vendor Surveillance to the Quality Assurance Audit Section. Procedures defining and reflecting this change have been issued, or in their final draft stages, at the time of inspection.

A concerted effort by the audit section to control previously undispositioned audit findings in the area of supplier Quality Assurance Programs is in process. The use of the recently implemented Audit Deficiency Report (ADR) Trend Analysis System should aid in this area of control. To expedite the process of closing out audit findings, the audit section is working with vendor surveillance. Instead of possibly waiting (1) year for the annual Supplier Quality Assurance Program re-evaluation to verify that supplier corrective action to audit findings had been implemented, vendor surveillance can assist in this area by verification of supplier action during their more frequent in-process source inspections.

C. Supplier Nonconformance and Corrective Action

1. Objectives

The objectives of this area of the inspection were to verify that procedures have been established and implemented for:

- a. Disposition of nonconformances that provide for:
- (1) Measures by the purchaser and supplier for identification, control, review, and disposition of items or services that do not meet procurement document requirements.
 - (2) Submittal of nonconformance notice to purchaser by supplier which shall include recommended disposition and technical justification.
 - (3) Submittal to the purchaser for approval of dispositions containing one or more of the following nonconformances:
 - (a) Technical or material requirement violated.
 - (b) Violated requirement in supplier document approved by purchaser.
 - (c) Nonconformance cannot be corrected by continuation of the original process or by rework.
 - (d) Original requirement is not met but the item can be restored so that its function is unimpaired.
 - (4) Purchaser disposition of supplier recommendations, verification of disposition, and maintenance of records of nonconformance.
- b. Corrective action that provides for:
- (1) Identification of and timely corrective action for conditions adverse to quality which occur during the procurement process that are the responsibility of the purchaser.
 - (2) Review and evaluation of conditions adverse to quality to determine the cause, extent, and measures needed to correct and prevent recurrence.
 - (3) Reporting these conditions and the corrective action to management.

- (4) Assuring that corrective action is implemented and maintained.
- (5) Verification of supplier's corrective action system.

2. Method of Accomplishment

The preceding objectives were accomplished by review of the following documents relative to Brown and Root Quality Assurance Program.

- a. The appropriate sections of the recently revised (as of October 31, 1980) Brown and Root, Inc. "Quality Assurance Program Description During Design and Construction of the South Texas Project Electric Generating Station" were reviewed to determine that commitments to quality were reflected in the area of Supplier Nonconformance and Corrective Action.
- b. The following procedures were reviewed in the South Texas Project Quality Assurance Procedures Manual to assure that quality related commitments were being procedurally implemented.
 - (1) ST-QAP-7.1, "Vendor Surveillance Organization"
 - (2) ST-QAP-7.2, "Vendor Surveillance and Houston Coordination Activities"
 - (3) ST-QAP-15.1 "Nonconforming Items"
 - (4) ST-QAP-16.1 "Corrective Action"
 - (5) Vendor Surveillance Policy Notes VSPN-012 "Nonconformances."
- c. Review of the following documents to assure that the quality commitments are being properly and effectively performed with respect to Supplier Nonconformance and Corrective Action.
 - (1) Five (5) Vendor Surveillance Plans
 - (2) Five (5) Vendor Surveillance Reports
 - (3) Two Vendor Control Program packages that contained Surveillance/Inspection History such as:
 - (a) Vendor Surveillance Reports and Surveillance/ Inspection Reports.

- (b) Certificates of Conformance
- (c) Nonconformance Reports
- (4) Five (5) Vendor Surveillance Work Folders
- (5) Six (6) Nonconformance Report (NCR) and their accompanying correspondence.
- (6) Five (5) Nonconformance Report (NCR) closure notifications to supplier.
- (7) Nonconformance Report (NCR) Status Report dated December 31, 1980.

3. Findings

a. Deviations

In this area of the inspection no deviations from commitment were identified.

b. Unresolved Items or Follow-up Items

None were identified.



OFFICE OF THE SECRETARY

CERTIFICATION

I hereby certify that the attached 18 pages contain a true copy of the letter dated May 18, 1981 from J.T. Collins to Brown & Root Co., Inc. regarding LCVIP inspection by Mr. D.F. Fox on April 13 - 17, 1981, together with that letter's attachments. on file with the United States Nuclear Regulatory Commission's Public Document Room, 1717 "H" Street, N. W. , Washington, D.C.

August 10, 1984 Date

Elizabeth P. Shelburne Official Custodian of the Records of the Public Document Room Office of the Secretary of the Commission

(SEAL)

DEPOSITION EXHIBIT

Sanjit Ab. 19

B-19

1 8 MAY 1981

Docket No. 99900502/31-02

Brown and Root, Incorporated
 ATtn: Mr. W. M. Rice
 Group Vice President, Power Group
 4100 Clinton Drive
 Post Office Box 3
 Houston, Texas 77001

Gentlemen:

This refers to the inspection conducted by Mr. D. F. Fox of this office on April 13-17, 1981, of your facilities at Houston, Texas, and to the discussions of our findings with you and members of your staff at the conclusion of the inspection.

Areas examined during this inspection and our findings are discussed in the enclosed inspection report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During this inspection it was found that you failed to meet certain NRC requirements. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

The Notice of Violation is sent to you pursuant to the provisions of 10 CFR Part 2.201. You are required to submit to this office within 30 days of the date of this letter a written statement containing, (1) a description of steps that have been or will be taken to correct these items, (2) a description of steps that have been or will be taken to prevent recurrence, and (3) the dates your corrective actions and preventive measures were or will be completed. Consideration may be given to extending your response time for good cause shown.

You are also requested to submit a similar written statement for each item which appears in the enclosed Notice of Nonconformance.

This is the fourth inspection in which Engineering and Quality Assurance training and qualification records were found to be not maintained as committed (See Notice of Nonconformance enclosure, Item C and previous Inspection Report nos. 99900502/30-01, 99900502/80-03, and 99900502/81-01.)

This suggests a breakdown in the effective implementation of the Brown and Root Quality Assurance Program in this area for the South Texas Project.

Consequently, in addition to responding to the specific items identified in the Notice of Nonconformance enclosure, please define the specific steps that you have taken, or plan to take, to assure that your commitments in the area of

personnel training and qualification will be effectively implemented.					
OFFICE	WPU/RSS	RSS	VIB	FES	DO-RIV
SURNAME	DFFox/dm	CJHale	UPotapovs	JGagliardo	JCollins
DATE	5/15/81	5/15/81	5/15/81	5/15/81	5/15/81

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Brown and Root, Incorporated

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In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within 10 days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this office to withhold such information. If your receipt of this letter has been delayed such that less than seven days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

John T. Collins
Acting Director
Region IV

Enclosures:

1. Notice of Violation
2. Notice of Nonconformance
3. Inspection Report No. 99900502/81-02

Brown and Root, Incorporated
Docket No. 99900502/81-02

NOTICE OF VIOLATION

Based on the results of NRC inspections conducted on September 29, through October 3, 1980 and April 13-17, 1981, it appears that certain of your activities were not conducted in full compliance with NRC requirements as indicated below:

Section 21.21 of 10 CFR Part 21 requires that "A director or responsible officer subject to the regulations of this part . . . shall notify the Commission when he obtains information reasonably indicating a failure to comply, or a defect . . . Initial notification required by this paragraph shall be made within two days following receipt of the information If initial notification is by means other than written communication, a written report shall be submitted to the appropriate Office within 5 days after the information is obtained."

Contrary to the above, Brown and Root failed to submit a written report to NRC within the required five days that a significant safety defect existed in delivered piping supports. The responsible officer determined on July 3, 1980, that safety concern number 57 was reportable under the provisions of 10 CFR Part 21. Houston Lighting and Power verbally reported the item to NRC on July 3, 1980, but Brown and Root did not submit a written report to NRC until July 11, 1980.

This is a Severity Level VI Violation (Supplement II).

Brown and Root, Inc.
Docket No. 99900502/81-02

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted April 13-17, 1981, it appears that certain of your activities were not conducted in accordance with NRC requirements.

- A. Criterion V of Appendix B to 10 CFR Part 50 states that activities affecting quality shall be accomplished in accordance with instructions and procedures.

Sections 3.0 and 2.5 of Brown and Root procedure STP-PMO-022 (Procedure for Evaluating and Reporting of Defects, Noncompliances and Deficiencies) respectively state in part that, "Each defect, noncompliance or deficiency evaluated by the Incident Review Committee will be recorded on an NCR (or ADR, if appropriate). All subsequent documentation related to such defect, noncompliance or deficiency shall reference the governing NCR (or ADR). The NCR (or ADR) in turn will have an attachment listing all related documents to effect a cross-referencing mechanism. . . . The total documentation package shall be filed under the NCR (or ADR) and stored with the classification of a permanent QA record. Therefore, all documentation relating to a possibly reportable or reportable incident including correspondence, meeting minutes, telephone minutes, evaluation reports and written reports will be identified for file copy by the NCR (or ADR) number and transmitted to the Quality Assurance Record Center. . . .

"A written report is required to be submitted to the NRC . . . on each defect, noncompliance or deficiency reported to the NRC per 10 CFR 21 or 10 CFR 50.55(e). . . . An outline for these written reports is provided in Attachment C to this procedure."

Contrary to the above, safety concerns 9, 22, 23, 26, 45, 46, 53, 66, 69, and 20 others evaluated by the Incident Review Committee were not recorded on an NCR or ADR, nor did all subsequent documentation related to these safety concerns reference a governing NCR or ADR. In addition, the total documentation packages for these concerns (1) were not stored with the classification of a QA record; and (2) were not transmitted to the Quality Assurance Record Center. Furthermore, the written report submitted to NRC regarding safety concern 81 (Cable Tray Hanger Design Deficiency), and others, did not contain all the information required by Attachment C to the Brown and Root procedure.

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- B. The NRC Letter of Acceptance of the Brown and Root Topical Report B&R-002A (revision 3, September 1977) states in part that, "Programmatic changes by Brown and Root to this topical report are to be submitted to NRC for review prior to implementation. Organizational changes which do not affect the program are to be submitted no later than 30 days after announcement."

Contrary to the above, programmatic and organizational changes made to the program by Brown and Root during the past year were not submitted to NRC as required. Refer to Details Section paragraph C.3. for details.

- C. Criterion V of Appendix B to 10 CFR Part 50 states that activities affecting quality shall be accomplished in accordance with instructions and procedures.

Brown and Root South Texas Project Procedure STP-PM-006 (Personnel Training) states that, "Each personnel qualification file shall include . . . Projected or completed Procedural Reading List (Form 200.81) . . . Projected or completed Training Requirements Checklist (Form 200.129) . . . Evidence of completion of QA Introductory Series."

Contrary to the above, the qualification files of four employees hired since February 12, 1981, did not include Form 200.81 (two of the employees), Form 200.129 (three of the employees), nor evidence of completion of QA Introductory Series (all four employees).

- D. Sections 6.2.1.1.3.8 and 3.11.5.2 of the FSAR for the South Texas Project nuclear power generation station state that, "Mechanical and electrical components of safety-related equipment were qualified for their potential normal operational environment and worst-case accident (DBA) environment. The two general categories of postulated accidents considered in equipment qualification were LOCA and MSLB . . . For in-containment equipment, the DBA LOCA source term is an equivalent 100% core meltdown."

Contrary to the above, the material used for the inflatable seals of the containment personnel and auxiliary air locks was not fully qualified for the worst-case accident (DBA) environment in that the Beta radiation resistance of the seal material had not been determined to date, nor was the requirement for qualifying the seal material to withstand Beta radiation (1.4×10^6 Rad, per NUREG-0588) included in the procurement documents for the air lock.

- E. Criterion V of Appendix B to 10 CFR Part 50 states that activities affecting quality shall be accomplished in accordance with instructions and procedures.

Brown and Root procedure DL 035 (Power Personnel Services Procedure for Verification of Education and Experience) states in part that, "The applicant shall provide documented evidence of completion of high school or college attendance, as applicable. Documented evidence is understood to mean an original transcript or diploma which may then be xeroxed by a Personnel Services Specialist if additional copies are required. The copies shall be initialed and dated by the Personnel Services Specialist to verify authenticity."

Contrary to the above, a Personnel Services Specialist did not authenticate by initialing and dating copies of transcripts or diplomas that were contained in the personnel department record files of four of the eight examined files of newly hired employees.

U.S. NUCLEAR REGULATORY COMMISSION
OFFICE OF INSPECTION AND ENFORCEMENT
REGION IV

Report No. 99900502/81-02

Company: Brown and Root, Incorporated
Power Engineering
4100 Clinton Drive
Post Office Box 3
Houston, Texas 77001

Inspection Conducted: April 13-17, 1981

Inspector: D F Fox 5/15/81
Date
D. F. Fox, Contractor Inspector
Reactor Systems Section
Vendor Inspection Branch

Approved by: C J Hale 5-15-81
Date
C. J. Hale, Chief
Reactor Systems Section
Vendor Inspection Branch

Summary

Inspection on April 13-17, 1981 (99900502/81-02)

Areas Inspected: Implementation of Title 10 CFR Part 50, Appendix B, and Topical Report B&R-002A, including follow up on previous inspection findings, design process management, and technical personnel background verification. The inspection involved 46 inspector-hours on site by one NRC inspector.

Results: In the three areas inspected, one violation and five nonconformances were identified. No unresolved or follow up items were identified.

Violation: Follow up on Previous Inspection Findings: Failure to submit a written report of a significant defect in piping supports within the time required by 10 CFR Part 21. (See Notice of Violation)

Nonconformances: Follow up on Previous Inspection Findings: Failure to adhere to the requirements in the Brown and Root 10 CFR Part 21 implementing procedure (See Notice of Nonconformance, Item A). Design Process Management: Failure to submit to NRC changes in the QA program and organization described in the Brown and Root Topical Report (See Notice of Nonconformance, Item B); Failure to include Beta radiation resistance requirements in the specification for personnel and auxiliary air lock inflatable seal material (See Notice of

Nonconformance, Item C); Failure to maintain required training records (See Notice of Nonconformance, Item D). Technical Personnel Background Verification: Failure to follow procedure for authenticating copies of educational diplomas or transcripts of new employees (See Notice of Nonconformance, Item E).

DETAILSA. Persons Contacted

- *R. J. Vurpillat, Manager, Quality Assurance
- *H. T. Faulkner, Project Coordinator
- H. L. Bell, Project Staff Manager
- G. C. Priddy, Manager, Personnel
- *P. A. Padden, Manager, Engineering Documentation
- R. W. Peverley, Assistant Engineering Project Manager
- *J. R. Childers, Houston Quality Assurance Coordinator
- *B. F. Mitchell, Manager, Design Quality Engineering
- *P. S. Jordan, Manager, Nuclear Licensing Staff
- *K. R. Cook, Project Deputy General Manager
- *S. J. Kelly, Training Coordinator
- M. Weintraub, Subcontracts General Manager
- *J. A. Signorrelli, Manager, Technical Staff
- J. F. Halsey, Manager, Special Problems Group
- *A. H. Geisler, Manager, Nuclear Licensing

*Denotes those present at the exit meeting.

B. Action on Previous Inspection Findings

1. (Open) Follow up Item (Report 80-02, Section II.C.3.e). The status of the Brown and Root Vendor Control Evaluation and Correction Program will be evaluated.

The program consists of seven phases which implement the Brown and Root management commitment to NRC to define (and subsequently execute) a program that provides for a complete and thorough review and audit of the procurement documents, vendor control and surveillance activities, and release of safety related equipment and material to the site that is in full compliance with all Brown and Root commitments to NRC.

The phases, approximate status, and initiation and completion dates provided to, or determined by, the inspector are as follows:

- a. Establish Priorities and Schedule - June 15, 1980, through January 31, 1981; 100% Completed as of March 15, 1981. One hundred and sixty procurement actions were identified, prioritized and scheduled for review.

- b. Generate "PO Baseline Requirements" - November 3, 1980, through July 17, 1981; 8% Complete versus 58% projected.
- c. Independent NUS Audit - September 1, 1980, through September 8, 1981; 2% Complete versus 62% projected.
- d. Resolution of Audit Findings - February 15, 1981, through October 9, 1981; 0% Complete versus 25% projected.
- e. Update Purchase Orders - March 1, 1981, through November 6, 1981; 0% Complete versus 17% projected.
- f. Correct Vendor Deficiencies - March 15, 1981, through December 4, 1981; 0% Complete versus 11% projected.
- g. Release of Equipment and Materials - February 15, 1981, through December 4, 1981; 0% Complete versus 20% projected.

Procurement of safety related equipment and materials will continue to be closely monitored by NRC during future inspections.

2. (Closed) Deviation (Report 80-03, deviation D). Superseded QA procedures were not destroyed nor stamped void.

The inspector verified the corrective action and preventive measures described in Brown and Root letters dated December 16, 1980, January 20, 1981, and March 18, 1981. Specifically:

- a. Quality assurance reviewed the QA Manual for procedures with non-unique identification and for reference to voided or superseded documents.
 - b. A list of non-unique QA procedures and inappropriately referenced documents in QA procedures was generated and distributed to holders of QA Manuals.
 - c. A draft revision of the QA Manual was issued for internal review and comment.
 - d. The revised QA Manual is committed for issue prior to the ASME resurvey which is currently scheduled for August 1981.
3. (Closed) Unresolved Item, Report 80-03, Section I.D.3.b.(2). An apparent violation exists in that Brown and Root was not adhering to their procedure for implementing 10 CFR Part 21 requirements.

This item was elevated to a violation as well as a nonconformance. See Notice of Violation enclosure and Notice of Nonconformance enclosure, Item A.

4. (Closed) Follow up Item (Report 80-03, Section I.B.4). Verify implementation of a management plan to assure that commitments to NRC will be performed as stated and be effectively implemented.

The inspector verified that Brown and Root developed a system and a form (NRC Action Item Commitment List) which was implemented for inspection 81-01 findings.

The system and form require the following:

- a. Each NRC identified deviation, unresolved item, or other outstanding item be listed (as well as the individual responsible for action thereon) and distributed accordingly.
- b. An internal commitment date be established that is earlier (generally two weeks) than the date committed to NRC.
- c. Quality Assurance is responsible for following the implementation and completion of corrective actions.
- d. Prior to the commitment date to NRC, Quality Assurance is to independently verify, by review of objective evidence, that the corrective actions have been completed. The Senior Vice President is to be notified for each specific failure to complete corrective action by the internal commitment date.
- e. The status of open B&R commitments to NRC be routinely reported at the STP - Quality Assurance Management Review Board meetings.

The effectiveness of the system will be followed during future inspections.

5. (Closed) Nonconformance (Report 81-01, Item A). Corrective action committed in a Brown and Root response to a previous finding had not been completed as scheduled.

The inspector verified the corrective action and preventive measures described in Brown and Root letter of response dated February 16, 1981. Specifically:

- a. Brown and Root developed and implemented a system to identify and assure completion of commitments made to the NRC. See related Item B.4 above for details.
- b. An "NRC Action Item Commitment List" was transmitted to appropriate management personnel for action/followup on January 15, 1981.
- c. A management meeting was held and documented on January 13, 1981, at which the importance of meeting commitments to NRC was stressed to all South Texas Project management by Brown and Root executive management.

Brown and Root completed the corrective action during inspection 81-01.

6. (Closed) Nonconformance (Report 81-01, Item B). Unapproved Technical Reference Documents were contained in the South Texas Project Design Manual.

The inspector verified the corrective action and preventive measures described in Brown and Root letters dated February 16, 1981, and March 18, 1981. Specifically:

- a. All STP Design Manuals were reviewed and brought into conformance with the procedural requirements for the content and control thereof.
 - b. Procedure STP-DC-007 was cancelled in its entirety on April 17, 1981, and was replaced by three new procedures issued on the same day. STP-SD-001-B (STP Design Manual), STP-SD-002-B (System Design Description), and STP-SD-003-B (Technical Reference Documents) collectively contain the germane requirements of STP-DC-007 and all committed changes thereto.
 - c. Nine additional STP procedures have been revised to date.
 - d. Training on the new and revised procedures was completed or committed.
7. (Closed) Nonconformance (Report 81-01, Item C). The Engineering Document Control Center did not publish a document status list as required.

The inspector verified the corrective action and preventive measures described in Brown and Root letters dated February 16, 1981, and March 18, 1981. Specifically:

- a. A current document status list was issued as committed. The list consisted of two separate issues, one of which (Brown and Root Document Status List) identified the current status of Brown and Root generated design documents. The second list, (Vendor Document Status List) identified the current status of vendor design documents received by Brown and Root.
- b. A new organization was formed on February 16, 1981, the EDC (Engineering Document Control), and assigned the responsibility for control and bi-monthly issue of both document status lists.
- c. Procedure STP-DC-028-B was revised to reflect the new Engineering Document Control organization.
- d. The design document control system was revised and upgraded to provide additional control over the generation, revision, verification, issue, and distribution of design documents.
- e. All affected STP procedures are to be revised to reflect the new organization and document control system by May 1, 1981.

C. Design Process Management

1. Objectives

The objectives of this area of inspection were to examine the establishment and implementation of quality related procedures for the design process to verify that:

- a. The design process system is defined, implemented, and enforced in accordance with approved procedures, instructions, or other documentation for all groups performing safety related design activities.
- b. Design inputs are properly prescribed and used for translation into specifications, drawings, instructions, or procedures.
- c. Appropriate quality standards for items important to safety are identified, documented, and their selection reviewed and approved.

- d. Final design can be related to the design input with this traceability documented, including the steps performed from design input to final design.
- e. Design activities are documented in sufficient detail to permit design verification and auditing.
- f. The methods are prescribed for preparing design analyses, drawings, specifications, and other design documents so they are planned, controlled, and correctly performed.

2. Methods of Accomplishment

The preceding objectives were accomplished by:

- a. Review of the following documents to determine if procedures have been prepared, approved, and issued to prescribe a controlled system for the management of the design process that is consistent with commitments to NRC and objectives a. through f. above.
 - (1) Sections 17.2, 17.3, 17.5, and 17.6 of the NRC accepted Brown and Root (B&R) Topical Report, B&R-002A Revision 3, and amendments thereto, to determine the B&R corporate commitments relative to management of the design process.
 - (2) Sections 2, 3, 5, and 6 of the B&R South Texas Project (STP) QA Manual, to determine if the B&R corporate commitments relative to management of the design process were correctly translated into quality assurance policies and procedures that provide control over activities affecting the quality of design within the B&R scope of supply.
 - (3) Thirteen STP applicable design control procedures that are contained in the STP Engineering Procedures Manual, to verify that procedures have been established to implement the committed quality assurance program and to prescribe design activities that are within the B&R scope of supply.
- b. Review of Section 3.8 of the PSAR, Sections 3.6, 3.11, 6.1, and 6.2 of the FSAR, and Section 3/4.6 of the Technical Specifications for the South Texas Project, to determine the regulatory requirements, safety classification, technical requirements, specific design inputs, and quality assurance requirements of the three containment air locks and other containment penetrations.

- c. Review of the design specifications 1C15-501 and 2C269SS006 (both titled "Steel Liner Work for Reactor Containment Structures"), subcontract procurement files (35-1197-0011 with the Pittsburgh - DeMoines Steel Company), three B&R and 33 Woolley drawings, and the Executive Design Review of the South Texas Project Personnel Air Lock, to determine if sources of design input, such as PSAR/FSAR commitments and regulatory/quality requirements, were correctly and traceably translated into verified final design documents and the ultimately procured personnel air lock.
- d. The following additional documents were reviewed to determine if the quality assurance program for the management of the design process was being effectively implemented for the current B&R activities affecting the quality of the design within the B&R scope of supply:
 - (1) Calculations (four),
 - (2) Design verifications (five),
 - (3) Drawings (twenty-two),
 - (4) Personnel training records (four),
 - (5) Safety concerns (seventy-seven),
 - (6) Specifications (five),
 - (7) System Design Descriptions (eleven), and
 - (8) Technical Reference Documents (eleven),

3. Findings

a. Nonconformances

Three nonconformances were identified in this area of the inspection. See Notice of Nonconformance enclosure, Items B., C., and D.

- (1) With respect to nonconformance B.

The following nonexclusive list of differences between the in-place QA Program and the program described in the Brown and Root Topical Report B&R-002A (Revision 3, September 1977, including amendments dated October 17, 1978, and March 24, 1980) were identified by the inspector:

- . Some organizational structures and titles are different from those described in the Topical Report.
 - . The QA Manager does not report to the Power Division Group Vice President.
 - . The position of "Assistant Quality Assurance Manager" has been added to the QA organization.
 - . The actual in-place QA and Engineering organizations, interfaces, and functions are not as described in the Topical Report.
 - . The revisions of the Regulatory Guides endorsed by the in-place QA Program are different from those identified in the Topical Report.
 - . Review and approval of procurement documents by Engineering, Quality Assurance, and Purchasing is not as described in the Topical Report.
 - . The responsibility for, and execution of, the QA Audit and Vendor Surveillance activities are not as described in the Topical Report.
- (2) With respect to the inflatable seal personnel air lock:
- (a) Section 3.8.1.1.6 of the South Texas Project PSAR states in part that:

" . . . Access into the Containment Building is provided by an equipment hatch, a personnel airlock and an auxiliary airlock. The personnel airlock is an approximately 10-foot diameter welded steel assembly with double doors. The auxiliary airlock is a 5-1/2 feet diameter welded steel assembly with double doors. Each door is hinged and furnished with double O-ring gaskets, with leakage test taps between the gaskets. . . ."
 - (b) Subsequently, the design evolved to use inflatable seals, rather than compression seals, reportedly to facilitate access for heavy equipment. Section 3.8.2.1.2 of the South Texas Project FSAR states in part that "The personnel and auxiliary air locks are double, inflatable seal airlocks with pressure barriers . . ."

The appropriateness of the inflatable seal design was independently questioned by a B&R reviewer and NRC inspectors. Specifically, the ability to assure long-term sealing without having access to the inner seals for maintenance, and the dependence upon active non-fail-safe systems to maintain seal tightness and thus containment integrity, were questioned.

A subsequent independent "Executive (Design) Review" was conducted by a consulting organization for Brown and Root. The review concluded that ". . . the inflatable seal concept planned for STP should provide adequate safety. Details of the STP personnel air lock door sealing systems need further review and analysis as described herein to insure acceptable performance under accident conditions. . ."

The Brown and Root Senior Vice President of Engineering stated that the design of the personnel and auxiliary air locks would be reevaluated within the next month and a decision made to either conduct the failure mode and effects analyses and qualification program recommended by the independent reviewers or to re-engineer the doors to deploy compressive O-ring seals.

b. Unresolved and Follow Up Items

None were identified.

D. Technical Personnel Background Verification

1. Objectives

To verify that measures have been established and are being effectively implemented that assure:

- a. The education and work experience information contained in employees' job applications are being verified by the employing organization.
- b. There is objective, documented evidence or records that attest to the employees' education and experience.

2. Method of Accomplishment

The preceding objectives were accomplished by an examination of:

- a. Brown and Root Procedure DL-035, Revision 0 dated May 21, 1980, (Procedure for Verification of Education and Experience).

- b. Personnel department record files for the following individuals:
- (1) Six individuals who were extended an offer of employment, but have not yet reported for work.
 - (2) Eight employees who started to work during the first quarter of 1981.
 - (3) Three employees who started to work prior to 1981.

3. Findings

One nonconformance was identified in this area of the inspection. (See Notice of Nonconformance enclosure, Item E).

The Personnel Manager stated that procedure DL-035 would be revised by June 10, 1981, to include specific requirements for verification and documentation of the alleged education and experience of newly hired or transferred employees who are engaged in nuclear safety related activities. Subsequently, the personnel files of all such employees will be reviewed and retrofitted by June 30, 1981. Specific actions will be taken on a case-by-case basis for those individuals whose alleged education or experience can not be verified or was falsified.

E. Exit Meeting

An exit meeting was conducted with Brown and Root management personnel at the conclusion of the inspection on January 8, 1981. In addition to those individuals indicated by an asterisk in paragraph A. of this report, the meeting was attended by:

J. R. Ayres, Manager, Materials
K. M. Broom, Senior Vice President
S. M. Dew, Assistant Engineering Project Manager
T. L. Porfilio, Discipline Quality Engineer
W. M. Rice, Group Vice President, Power Group
E. A. Saltarelli, Senior Vice President

The inspector discussed the scope of the inspection and the details of the findings identified during the inspection, including the processing of identified safety concerns. Management comments were generally for information only or for acknowledgement of the statements of the inspector with respect to the nonconformances presented.



OFFICE OF THE
SECRETARY

UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D.C. 20555

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CERTIFICATION

I hereby certify that the attached 22 pages contain a true copy of the letter dated Aug. 19, 1981 from K.V. Seyfrit to Brown & Root, Inc. regarding the LLVIP inspection by Mr. D.F. Fox on July 20 - 24, 1981, together with that letter's attachments, on file with the United States Nuclear Regulatory Commission's Public Document Room, 1717 "H" Street, N. W. , Washington, D.C.

Aug 10, 1984
Date

Elizabeth C. Shelburne
Official Custodian of the Records
of the Public Document Room
Office of the Secretary of the
Commission

(SEAL)

DEPOSITION
EXHIBIT

Seyfrit
No. 20

B. 20

AUG 19 1981

Docket No. 99900502/81-03



Brown & Root, Incorporated
 ATTN: Mr. W. M. Rice
 Group Vice President, Power Group
 4100 Clinton Drive
 Houston, TX 77001

Gentlemen:

This refers to the inspection conducted by Mr. D. F. Fox of this office on July 20-24, 1981, of your facilities at Houston, Texas, and to the discussions of our findings with Dr. K. M. Broom and members of your staff at the conclusion of the inspection.

Areas examined during this inspection and our findings are discussed in the enclosed report. Within these areas, the inspection consisted of an examination of procedures and representative records, interviews with personnel, and observations by the inspector.

During this inspection it was found that you failed to meet certain commitments to the NRC. The specific findings and references to the pertinent requirements are identified in the enclosures to this letter.

This is the fourth inspection in which the corrective actions or preventive measures for a total of seven previous inspection findings were not completed as committed. Reference Item A of the Notice of Deviation enclosures of Reports 99900502/80-01, 99900502/80-02, and 99900502/81-01. Repeatedly in your response to these previous findings and during a meeting with you and members of your staff in our Region IV offices, you have committed to implement effective corrective and preventive measures, but this problem still persists. This suggests a more serious breakdown in the effective implementation and control of your Quality Assurance Program. Consequently, provide us within 30 days from the date of this letter a written statement containing, (1) a description of steps that have been or will be taken to assure that Brown and Root commitments to NRC will be performed as stated and be effectively implemented; (2) a description of steps that have been or will be taken to prevent future recurrence of this item, and (3) the dates your corrective actions and preventive measures were, or will be, completed. You are requested to take action promptly concerning this matter.

The responses directed by this letter are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

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 PDR 04999 EECBRT
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OFFICE	WPU/RSS	RSS	VIP	IES	DD	D-RIV
NAME	DFox/dm	CJHale	UPotapovs	JGagliardo	JTCollins	KVSeifrit
DATE	8/13/81	8/13/81	8/13/81	8/14/81	8/17/81	8/17/81

Brown and Root, Inc.

In accordance with 10 CFR 2.790 of the Commission's regulations, a copy of this letter and the enclosed inspection report will be placed in the NRC's Public Document Room. If this report contains any information that you believe to be exempt from disclosure under 10 CFR 9.5(a)(4), it is necessary that you (a) notify this office by telephone within 10 days from the date of this letter of your intention to file a request for withholding; and (b) submit within 25 days from the date of this letter a written application to this office to withhold such information. If your request of this letter has been delayed such that less than seven days are available for your review, please notify this office promptly so that a new due date may be established. Consistent with Section 2.790(b)(1), any such application must be accompanied by an affidavit executed by the owner of the information which identifies the document or part sought to be withheld, and which contains a full statement of the reasons on the basis which it is claimed that the information should be withheld from public disclosure. This section further requires the statement to address with specificity the considerations listed in 10 CFR 2.790(b)(4). The information sought to be withheld shall be incorporated as far as possible into a separate part of the affidavit. If we do not hear from you in this regard within the specified periods noted above, the report will be placed in the Public Document Room.

Should you have any questions concerning this inspection, we will be pleased to discuss them with you.

Sincerely,

Karl V. Seyfrit
Director

Enclosures:

1. Notice of Nonconformance
2. Inspection Report No. 99900502/81-03

bcc:

IE/V&SPB (Reinmuth)
IE Files
AEOD
NMSS
NRC:PDR
QAB
Reg. Directors, I, II, III, V
JEGagliardo, RIV

OFFICE							
IRNAME							
DATE							

Brown and Root, Inc.
Docket No. 99900502/81-03

NOTICE OF NONCONFORMANCE

Based on the results of an NRC inspection conducted July 20-24, 1981, it appears that certain of your activities were not conducted in accordance with NRC requirements:

Brown and Root letter of response, dated June 12, 1980, to nonconformance D of NRC inspection report 99900502/81-02 states in part that, "The procurement specification (S-006) for the air lock has been modified and the Technical Reference Document (TRD 5N119NQ013, Revision B) has been revised for qualifying the air lock seal material to withstand a beta radiation of 3.3×10^8 Rad. This corrective action is complete. Vendor response to the material requisition for the seal materials has been requested by July 1, 1981."

Contrary to the above, the vendor response to the material requisition was not requested by July 1, 1981. Furthermore, the material requisition was not completed and transmitted to the vendor by conclusion of this inspection, since the procurement specification and Technical Reference Document were not issued until July 22, 1981 and June 22, 1981, respectively.

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99900502 PDR

A. VIOLATIONS:

None

B. NONCONFORMANCES:

Contrary to commitments contained in the Brown and Root, Inc. letter of response, dated June 12, 1981, to NRC Inspection Report 99900502/81-02, corrective action for a previously identified nonconformance had not been completed as stated. This is the fourth inspection in which corrective actions or preventive measures were not completed as committed.

C. UNRESOLVED ITEMS:

None

D. STATUS OF PREVIOUS INSPECTION FINDINGS:

1. (Closed) Follow up Item (80-02): The status of the Brown and Root (B&R), Vendor Control Evaluation and Correction Program will be evaluated.

The NRC inspector reviewed the status of the task force established by B&R to review all procurement documents for safety-related equipment and material to assure that all B&R and Houston Lighting and Power (HL&P) commitments to NRC are met prior to release of the items to the South Texas Project (STP) site.

B&R management stated that: (1) all purchase orders will be reviewed and updated by November 30, 1981; (2) all affected items will be brought into full compliance and released by December 31, 1981; the shift in the role of NUS in the program from that of an independent auditor of the updated procurement documents to that of determining the extent that the vendor's existing programs and activities met the requirements contained in the updated procurement documents, will be identified to HL&P by August 14, 1981; and (3) Technical Reference Document No. 7A700GP007, will be issued by August 14, 1981, to define and control all aspects of the Vendor Control and Evaluation Program. Implementation will be retrofitted to include the identification and upgrading, as necessary, of those safety-related items previously released to the site for construction or installation.

This area will be examined further during subsequent inspections.

2. (Closed) Violation (81-02): Failure to submit a written report of a significant defect in piping supports within the time required by 10 CFR Part 21.

B&R management stated that the delay in submitting the report to NRC resulted from their understanding of the 10 CFR Part 21 reporting requirements at that time. The B&R 10 CFR Part 21 implementing procedure (STP-PGM-022) was revised on July 1, 1981, to require verbal notification to NRC within two calendar days and written notification within five calendar days following the determination of reportability.

3. (Closed) Nonconformance (81-02): Failure to adhere to the requirements in the B&R 10 CFR Part 21 implementing procedure.

The B&R Incident Review Committee reviewed all previously identified safety concerns to determine their reportability and the minimum supplemental documentation needed to document B&R's decision on each safety concern. Three safety concerns were determined reportable pursuant to 10 CFR Part 21 and the requisite notification made to NRC. Procedure STP-PGM-022 was revised on July 1, 1981, to specifically define the identification, evaluation, reporting, and documentation requirements for safety concerns identified subsequent to July 1, 1981.

4. (Closed) Nonconformance (81-02): Failure to submit to NRC changes in the QA program and organization described in the B&R Topical Report.

B&R management stated that the Topical Report has not been revised because the only current nuclear design activity, the South Texas Project (STP), is not committed to that QA program. B&R plans to revise the topical and determine the optimum date for submission to NRC by December 31, 1981.

5. (Closed) Nonconformance (81-02): Failure to include beta radiation resistance requirements in the specification for personnel air lock inflatable seal material.

The subject specification was revised and issued on July 22, 1981; however B&R did not complete the corrective action described in their June 12, 1981 letter of response to this nonconformance prior to the conclusion of this inspection. (See B. above.)

6. (Closed) Nonconformance (81-02): Failure to maintain required training records.

The training files were reviewed and the required training and documentation was completed for all affected STP individuals. Procedure STP-PI-006-E was revised on July 20, 1981, to include specific requirements for the control, maintenance, and storage of training records.

Additional B&R personnel were assigned to the training and record retention functions and affected STP supervisors were given training on implementing the requirements of the revised procedure.

7. (Closed) Nonconformance (81-02): Failure to follow procedure for authenticating copies of educational diplomas or transcripts of new employees.

The STP corporate personnel files were reviewed and the required authentication or verification was completed for all STP individuals. Procedure DL 035 was revised on June 9, 1981, to include specific requirements for verification and documentation of the education and experience of newly hired or transferred employees assigned to the STP.

E. OTHER FINDINGS OR COMMENTS

1. Design Inspection

The related sections of the STP PSAR and FSAR and applicable implementing procedures were examined to determine the commitments concerning safety-related design activities. One system design description, two specifications, two Technical Reference Documents, the plant physical model, eleven drawings, seven calculations, two design activity logs and reports, two safety concerns, two purchase orders, thirteen records of design verification, three hold tags, and other documentation relating to the containment structure, mechanical equipment auxiliary building and fuel handling building HVAC, and the auxiliary feedwater systems were examined to verify effective implementation.

Within the scope of the inspection, the committed program was being implemented. However, the following items were noted.

- a. Approximately 2600 physical interferences, encroachments on equipment access or personnel passageways, were uncovered during the construction of the plant physical model and resulted in numerous documents being issued to identify changes that are needed in the related engineering drawings. Based on information from B&R personnel approximately 3500 of the 33,300 drawings issued to date have a total of 5,000 "holds" or "hold areas" associated with them. Certain of these drawings have been used by vendors to fabricate piping spool pieces that were subsequently shipped to the site prior to clearing of the "holds." The current status of these items could not be determined by examination of available B&R engineering records. B&R management stated that they would develop and implement a system to identify, track, and assure clearing of design "holds" on an item prior to the design requirements freeze date

for the item. Furthermore, the need for, and methodology of, providing positive assurance against the inadvertent installation of such items will be evaluated.

- b. An August 25, 1980 reanalysis of the pressure and temperature transient of the containment after a postulated LOCA indicates that the original (May 18, 1978) analysis used to generate the data for the STP FSAR was conservative by 3 psi in peak pressure, 2.4°F in peak vapor temperature and 0.2°F in peak sump temperature. The inspector noted that certain of the input parameters used in the reanalysis were different from those reported in the FSAR. These and other inconsistencies in the FSAR were discussed with B&R management who stated that the FSAR would be reviewed and needed changes would be identified to HL&P on a timely basis and affected design documents would be revised accordingly.
- c. Auxiliary feed water pumps, purchased from the Bingham-Willamette Company under POs 35-1197-4053 and 35-1197-8053, were delivered to the STP site with motor operators for the turbine trip and throttle valves that were not qualified to IEEE-323 and IEEE-344 as required by procurement specification STP-3S149MS043D dated March 31, 1977. The B&R Incident Review Committee (IRC) deemed this safety concern (No. 40) to be reportable pursuant to 10 CFR Part 21 and on April 10, 1980, notified the NRC. Review of B&R's engineering and procurement files did not reveal any indication that the requirement for qualified operators was waived. B&R management stated that the supplier of the turbine (Terry Corp.) had replaced the operators on one of the delivered turbines with qualified operators and reportedly is in the process of replacing the others.
- d. B&R engineering stated that the heating and ventilating (HVAC) systems for the STP mechanical equipment auxiliary building (MEAB) and the fuel handling building (FHB) appeared to provide insufficient cooling during certain modes of plant operation or postulated plant events. The B&R IRC deemed this safety concern (No. 96) to be reportable pursuant to 10 CFR Part 21 and on May 8, 1981, notified the NRC. B&R management stated that the reasons for the cooling capacity of the systems, as designed, not meeting current heat removal requirements were that: (1) the capacity requirements were calculated in the mid 1970s from the heat loads identified at that time and were not revised nor updated since then; (2) certain heat loads were inadvertently omitted from the analysis; and (3) additional capacity is needed to accommodate the new equipment and additional heat loads now required in the MEAB and FHB. B&R management stated that the calculation of the required HVAC capacity will be updated by October 13, 1981 and will be revised to include the effect of pipe ruptures by June 1982. B&R anticipates that the procurement documents for the new HVAC systems, which will be used to supplement the existing HVAC systems, will be issued by July 1982.

2. Design Verification

The related sections of the STP PSAR and FSAR and applicable implementing procedures were examined to determine if procedures are consistent with commitments to NRC. The qualifications of the design verifiers and the detailed documentation of the design verification of two specifications, one computer code, three calculations, and five drawings relating to the containment structure and its post LOCA pressure and temperature transient analysis were examined to determine if the committed program was being effectively implemented.

Within the scope of this inspection, the committed program was being implemented.

3. Design Change Control

The Brown and Root Quality Assurance Manual and the applicable engineering procedures were examined to determine the quality assurance program commitments. The following documents were examined to verify implementation of the commitments; Design Change Tracking System (computer printout), 31 Design Change Notices, 14 revised drawings, and six revised calculations. Relative to the documents examined, the quality assurance program commitments were being implemented.

4. Design Corrective Action

The Brown and Root Quality Assurance Manual and the applicable procedures were examined to determine the quality assurance program commitments. Twelve identified Engineering Design Deficiencies were examined to verify implementation of the commitments. Within the scope of this area of the inspection, the Quality Assurance program commitments were being implemented. However, it was not apparent that the present program adequately addresses recurring design errors for needed design corrective action. This area will be examined further during a future inspection.

Company BROWN & ROOT, INC.

Dates 7/20-24/81

Docket/Report No. 99900502

Inspector D. F. Fox

Page 1 of 2

NAME (Please Print)	TITLE (Please Print)	ORGANIZATION (Please Print)
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S. GUHA-MAJUMDAR	ASST. PROJ. ENGINEER (STRUCT)	B & R)
R. W. FEVERLEY	ASST ENG PROJ MGR	Brown & Root, Inc
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RICHARD H. KOCH	PIPING DESIGN SQ. WR	BROWN & ROOT

Scope/Module Previous Inspection Findings

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
1	9	SM119NQ013; "CONTAMINANT ISOLATION DESIGN CRITERIA"	6-23-81	B
2	1	CR-0241; SP-9-C1; LOGIC FOR CONTAMINANT PERSONNEL AIRLOCK D.R. ITEMS"	7-14-81	A
3	1	W.J. WOOLLEY "GENERAL ASSEMBLY - PERSONNEL AIR LOCK, SN 1073-1"	5-30-79	3
4	1	M.J. WOOLLEY "GENERAL ASSEMBLY - PERSONNEL AIR LOCK, SO 1073-1"	1-4-79	4
5	1	PAID DRAFT CRAM 7-16-81 "PERSONNEL AIRLOCK PNEUMATIC SEAL SYSTEM"	7-16-81	NA
6	7	PISSBUNG DES MOINGS - ESTIMATED COST FOR COMPRESSIVE SEAL PERSONNEL AIR LOCKS	7-10-81	NA
7	3	DL035 "PROCEDURE FOR VERIFICATION OF EDUCATION AND EXPERIENCE"	6-9-81	NA
8	3	STP-PGM-22 "PROCEDURE FOR EXAMINING & IDENTIFYING DEFECTS, DISCOMPLETAS & DEFECTS"	7-1-81	4
9	2	ZC019SD010-F "SDD FOR CONTAMINANT STRUCTURE"	3-19-79	F
10	3	STP-PAM-006-E "PERSONNEL TRAINING AND QUALIFICATION"	7-10-81	E
11	2	ZC269SS006-G "STEEL LINER WORK FOR REACTION CONTAINMENT STRUCTURES"	8-14-78	G
12	12	ZC269SS006-G OALG DRAFT, FINAL DRAFT FOR CLIENT APPROVAL	6-17-81/1-21-81	PMS
13	7	INTERNAL B&ROOT MEMO TFS-1667, 7/13/81, SIGNATURE V.C.P. ACTIVITIES	7-13-81	NA
14	7	INT. H&P MEMO ST-HL-19498 VSP TASK FORCE TAD COMMENTS	6-17-81	NA
15	9	A70069007 "VENONA CONTACT PROGRAM FOR SAFETY RELATED EQUIP. ADMINISTRATION"	7-15-81	C
16	3	STP-PGM-13 "VENONA CONTACT PROGRAM FOR SAFETY RELATED EQUIP. ADMINISTRATION"	7-16-81	A
17	8	SB B&ROOT PERSONNEL FILES (ACTUAL PERSONNEL POWER DIVISION FILES)	NA	NA
18	8	10 B&ROOT TRAINING DEPARTMENT TRAINING FILES	NA	NA

- Document Types:
1. Drawing
 2. Specification
 3. Procedure
 4. QA Manual

- Columns:
1. Sequential Item Number
 2. Type of Document
 3. Date of Document
 4. Revision (If applicable)

5. Purchase Order
6. Internal Memo
7. Letter
8. Other (Specify if necessary)
9. TECHNICAL REFERENCE DOCUMENT
12. PARTIAL CHANGE NOTICE

Scope/Module DESIGN INSPECTION
 ★ DRAWINGS, DOCUMENTS, EXAMINATIONS ALSO FOR THE DESIGN VERIFICATION MODULE

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
★ 1	2	ZC019SD010-F "SDD FOR CONTAINMENT STRUCTURE	3-19-79	F
2	10	ZC019SD010E/DCU/2-26-79 "CONTAINMENT STRUCTURE SDD" D.C. Hwang	3-16-79	NA
3	11	ZC211SC013-B "REACTOR CONTAINMENT SHELL DESIGN"	12-13-78	B
★ 4	11	ZC211SC011-A "CONTAINMENT BUILDING SHELL DESIGN INTR"	11-11-76	R
5	11	ZC211SC009-A "SHELL MATHEMATICAL MODEL AND GEOMETRY"	10-29-76	A
★ 6	10	ZC211SC011-A DESIGN VERIFICATION RECORDS (DVR)	11-5-76	A
7	1	Z-C-02-1-C-1027-8 "RCB CONSTRUCTION PLAN & SECTIONS"	10-7-77	8
★ 8	11	ZC211SC013-1A "RCB (REACTOR CONTAINMENT BUILDING) SHELL DESIGN"	8-20-76	1A
★ 9	10	ZC211SC013-1A DVR "RCB CONSTRUCTION & EQUIPMENT HOISTING PLAN"	7-29-77	1A
★ 10	10	ZC211SC013-3A DVR "RCB Dome Design"	6-7-78	3A
★ 11	10	ZC211SC013-4A DVR "Dome Apex Access Ladder"	8-3-78	4A
★ 12	10	ZC211SC013-5A DVR "Dome Apex Tower Support"	8-3-78	5A
★ 13	8	PSAR-STP, Sec 3.8.1 "CONCRETE CONFINEMENT"	10-9-75	APP 31
★ 14	8	FSAR-STP, Sec 3.8.1 "CONCRETE CONFINEMENT"	5-30-78	0
15	10	Z-C-02-1-C-1005-2 "RCB MDT FOUNDATION-LOWER REINFORCEMENT"	3-10-77	2
16	10	Z-C-02-1-C-1027-8 "RCB CONFINEMENT PLAN & SECTIONS"	10-17-77	8
17	10	Z-C-02-1-C-1041-0 "RCB FOUNDATION PILE LOTS, ELEVATIONS, SECTIONS & DETAILS"	9-2-77	0
18	10	Z-C-02-1-C-1033-0 "RCB CONCRETE DOME REINFORCEMENT PLAN"	12-14-78	0

- Document Types:
1. Drawing
 2. Specification
 3. Procedure
 4. QA Manual

5. Purchase Order
6. Internal Memo
7. Letter
8. Other (Specify-if necessary)
9. Technical Reference Document
10. Design Verification Record
11. CALCULATION

Columns:

1. Sequential Item Number
2. Type of Document
3. Date of Document
4. Revision (If applicable)

DOCUMENTS EXAMINED

1	2	TITLE/SUBJECT	3	4
*19	11	NO79XAD101ANS/1702-LSA-A9, Vol I & II, "STP FSAR CONTAINMENT ANALYSIS"	5-18-78	0
*20	10	1702-LSA-A9 VERIFIED/REVERIFIED	12-29-78/1-2/80	0, 1
*21	11	1702-LSA-A9, Supp. 1 "STP-FSAR CONTAINMENT ANALYSIS" ^{ANALYSIS}	8-25-80	1
*22	10	1702-LSA-A9, Supp. 1 ^{REVISION REVIEWERS COMMENTS AND} VERIFIED CHECKLIST FOR CALCULATION	11-7-80 9-16-80	0
23	7	ST-BR-NS-703 AVOID TO NUS TO REVIEW AND UPGRADE 1702-LSA-A9	1-28-80	NA
*24	8	STP FSAR Sect. 6.2.6.1 CONTAINMENT STRUCTURE		0, 1
25	7	ST-BR-NS-676 REQ TO NUS TO REVIEW / UPGRADE ALL FSAR SEC 6 ANALYSIS	4-14-79	NA
26	8	1NO79XAD101B BR-NUS INTERFACE AGREEMENT	1-29-80	8
*27	8	(MODEL) PROBLEM STATUS REPORT, MONITOR W/WEEKLY PROBLEM UPDATES	6-15-81	CURRENT
*28	8	PIPING GROUP DRAWING HOLD LOG REPORT (COMPLIANCE)	7-9-81	BIWEEKLY
29	1	2F361P-SI-1101-UB2 FAB ISO, SIS, (PORTLAND HOLD)	2-9-81	4
30	1	3M361P-RM-1022-UB3 FAB ISO, REACTOR MIXED WATER SYSTEM	2-12-80	3
31	1	7M361P-RD-1003-UD7 FAB ISO, RX HEAT DEGASSING SYSTEM	5-20-80	2
32	1	7M361P-ED-1102-TC7 FAB ISO, EQUIP. DRAIN SYSTEM	1-23-81	5
33	8	PIPING SPOOLS HOLD REQUEST FORM 1145	6-25-81	NA
*34	11	NO79XAD101ANS/1702-LSA-A9, APPENDUM 1 "STP FSAR LOCA CONT." ^{PARVIS}	11-7-80	1
*35	8	COMPLIANCE NV CONTEMP 3, MODIFICATION 03, VSN 30051, F.M. 6016 ^{JAN 80}	8-25-80	PROD I
*36	10	USERS MANUAL AND VERIFICATION OF NV CONTEMP 3 CURF	12-29-78	03

Document Types:

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
| 3. Procedure | 7. Letter |
| 4. QA Manual | 8. Other (Specify-if necessary) |

Columns:

1. Sequential Item Number
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4. Revision (If applicable)

1	2	3	4
37	9	A0106 0009 - A / PROPOSED INSTRUCTIONS FOR THE AHA ANALYSIS AND	7-21-81
38	7	ST-BR-SF-2365 SPECIFICS "PIPE SPEEKS ON HOLD"	7-16-81
39	3	STP-DC-002-K "DRAWING CORRECT"	10-1-80
40	3	STP-DC-005-I "PREPARATION & CORRECTION OF SPECIFICATIONS"	12-5-80
*41	3	STP-DC-008-J "CALCULATIONS"	10-1-80
42	3	STP-DC-012-I "FSAR / ENVIRONMENTAL REPORT SIGNATURE SHEET"	3-12-81
*43	3	STP-DC-015-H "DESIGN VERIFICATION"	10-3-80
44	8	STP ENGINEERING DESIGN MANUAL # 47	CONCEPT
45	8	Safety Concern # 40 AFW PUMP TURBINE DRIVES (TRAMP)	4-10-80
46	8	Safety Concern # 96 HVAC DESIGN DEFICIENCY	CLARIFY
47	5	HELP to BIRCHMOUNT/UNIONSTEEL CO. # 35-1197-4053 4 AFW PUMPS	8-8-81
48	5	HELP to BIRCHMOUNT # 35-1197-4053 4 AFW PUMPS	4-26-77
49	2	35149 MS 043 D "AUX FERRITATION PUMPS & TURBINES TSPCA"	4-26-77
50	3	STP-SD-003 B "ENGL. PROC. FOR TECHNICAL REFERENCE DOCUMENTS"	3-31-77
51	3	STP-SD-001 B "ENGL. PROC. FOR STP DESIGN MANUAL"	4-17-81
*52	4	STP DESIGN MAN. STN-SD-498 AND STN-SD-499 - REVISED (10/21/80) QA	4-17-81
			10-31-80
			NA
			VARIOUS
			NA
			NA
			1-14
			1-
			D
			B
			B
			NA

Document Types:

1. Drawing
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3. Procedure
4. QA Manual

5. Purchas Order
6. Internal Memo
7. Letter
8. Other (Specify-if necessary)

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4. Revision (If applicable)

1	2	TITLE/SUBJECT	3	4
42	1	ZF-1-SI-1101 VB2 PIPING ISO		REV. 4
43	1	PIPING SUPPORT DRAWING 7Y220J2037 SH. 46		REV. 0
44	1	PIPING SUPPORT DRAWING 3M151J1277 SH. 9		REV. 1
45	1	PIPING SUPPORT DRAWING 3M151J1299 SH. 1		REV. 1
46	1	PIPING SUPPORT DRAWING 3M151J1299 SH. 16		REV. 1
47	8	DESIGN CHANGE NOTICE PCN-01 FOR 3M151J1299 SH. 16	5/26/81	
48	1	PIPING SUPPORT DRAWING 2M151J1179 SH. 6		REV. 0
49	8	DESIGN CHANGE NOTICE PCN-1 FOR 2M151J1179	4/6/81	
50	1	PIPING SUPPORT DRAWING 3M151J1302 SH. 15		REV. 1
51	8	DESIGN CHANGE NOTICE PCN-1 FOR 3M151J1302	6/3/81	
52	1	PIPING SUPPORT DRAWING 3M151J1351 SH. 8		REV. 1
53	1	PIPING SUPPORT DRAWING 3M151J1373 SH. 5		REV. 2
54	1	PIPING SUPPORT DRAWING 2M151J3026 SH. 1 (VOID)		REV. 1
55	1	PIPING SUPPORT DRAWING 2M151J3027 SH. 1 (VOID)		REV. 1

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
| 3. Procedure | 7. Letter |
| 4. QA Manual | 8. Other (Specify-if necessary) |

Columns:

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3. Date of Document
4. Revision (If applicable)

1	2	TITLE/SUBJECT	3	4
1	3	ENGINEERING DESIGN DEFICIENCIES STP-DC-021-E	7/13/81	
2	8	ENGINEERING DESIGN DEFICIENCIES EDD NO. 81-0459	4/10/81	
3	8	EDD NO. 80-89 AUX FEEDWATER PUMPS AND TURBINE	4/10/80	
4	3	THE EVALUATION AND REPORTING OF DEFECTS, NONCOMPLIANCES AND DEFICIENCIES STP-GR-005-A	7/13/81	
5	8	EDD NO. 80-135 NON-SAFETY CLASS EXHAUST FANS SPECIFICATION	6/18/80	
6	8	EDD NO. 80-136 VENDOR GEN. ARRANGEMENT DWG. OF ECW PUMP	7/1/80	
7	8	EDD NO. 80-310 AUX FEEDWATER PUMPS AND MOTORS	8/22/80	
8	8	EDD NO. 80-99 ONE LINE DIAGRAM, 480V, E.S.F. LOAD CENTER EIA, EIB, & EIC	4/25/80	
9	8	EDD NO. 79-112 STRESS REPORTS	12/10/79	
10	8	EDD NO. 81-581 PIPING FAB. ISOMETRIC	5/11/81	
11	8	EDD NO. 81-582 PIPING FAB. ISOMETRIC	5/11/81	
12	8	EDD NO. 81-583 PIPING FAB. ISOMETRIC	5/11/81	

Document Types:

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
| 3. Procedure | 7. Letter |
| 4. QA Manual | 8. Other (Specify-if necessary) |

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| 1. Sequential Item Number |
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| 3. Date of Document |
| 4. Revision (If applicable) |

1	2	TITLE/SUBJECT	3	4
1	3	SOUTH TEXAS PROJECT ENGINEERING PROCEDURE FOR DESIGN CHANGE CONTROL STP-DC-028-B	10/1/80	
2	4	B&R QA MANUAL SECTION 3.0	6/1/81	REV 0
3	8	DESIGN CHANGE TRACKING SYSTEM (COMPUTER PRINTOUT) CHANGES ISSUED 6/29/81 THRU 7/17/81	7/17/81	
4	8	DESIGN CHANGE NOTICE PCN-02 FOR 3-P-20-0-C-5043-0	10/27/80	
5	8	DESIGN CHANGE NOTICE PCN-03	6/30/81	
6	8	DESIGN CHANGE NOTICE PCN-01	12/14/79	
7	8	DESIGN CHANGE NOTICE DDN-01 FOR 2C-22-1C-1033-0	6/3/81	
8	3	DESIGN VERIFICATION STP-DC-015-H	10/3/80	
9	8	DESIGN CHANGE NOTICE DDN-01 FOR 2C-20-1C-1004-3	6/3/81	
10	8	DESIGN CHANGE NOTICE DDN-01 FOR 2C-22-1C-1033-0	6/3/81	
11	8	DESIGN CHANGE NOTICE PCN-01 FOR " v	2/12/79	
12	8	DESIGN CHANGE NOTICE PCN-02 FOR " VOID	4/6/81	
13	8	DESIGN CHANGE NOTICE PCN-03 FOR "	4/15/81	
14	1	ELECTRICAL REACTOR CONTAINMENT BUILDING LABELMENTS 3-E-53-1-E-2455-5		REV 5

Document Types:

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
| 3. Procedure | 7. Letter |
| 4. QA Manual | 8. Other (Specify-if necessary) |

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3. Date of Document
4. Revision (If applicable)

1	2	TITLE/SUBJECT	3	4
15	1	3-E-20-1-E-2665-8 ELECTRICAL MECHANICAL AUXILIARY BUILDING CABLE TRAY PLAN		REV. 8
16	3	DRAWING CONTROL STP-DC-002-K	10/1/80	
17	8	DESIGN CHANGE NOTICE PCN-01 FOR 5-E-21-1-E-2950-11	5/21/81	
18	8	DESIGN CHANGE NOTICE PCN-02 FOR "	6/22/81	
19	8	DESIGN CHANGE NOTICE PCN-03 FOR "	6/9/81	
20	1	5-E-02-1-E-1897-1 ELECTRICAL DIESEL GENERATOR BUILDING EQUIPMENT ARRANGEMENT PLAN	4/3/81	
21	8	DESIGN CHANGE NOTICE DDN-01 FOR 3-M-35-1-I-83097-0	3/30/81	
22	8	DESIGN CHANGE NOTICE PCN-01 FOR "	3/30/81	
23	8	DESIGN CHANGE NOTICE PCN-01 FOR 3M151J0888-0	4/6/81	
24	8	DESIGN CHANGE NOTICE PCN-01 FOR 2M151J0982-0	3/4/81	
25	8	DESIGN CHANGE NOTICE PCN-01 FOR 3M151-J-1002-0 Sh 2	6/1/81	
26	8	DESIGN CHANGE NOTICE PCN-03 FOR 5M151P-5521-3	5/27/81	
27	8	DESIGN CHANGE NOTICE PCN-02 FOR 3-M-01-1-S-4003-3	6/18/81	
28	8	DESIGN CHANGE NOTICE DDN-01 FOR 3-M-01-1-S-4080-3	12/22/80	

Document Types:

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| 1. Drawing | 5. Purchas Order |
| 2. Specification | 6. Internal Memo |
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| 4. QA Manual | 8. Other (Specify-if necessary) |

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1	2	TITLE/SUBJECT	3	4
29	8	DESIGN CHANGE NOTICE PCN-1 FOR 3M01154080-3 VOID	11/26/80	
30	8	DESIGN CHANGE NOTICE DDN-01 FOR 8V111V0331-C	4/30/81	
31	8	DESIGN CHANGE NOTICE PCN-01 FOR "	1/5/81	
32	8	DESIGN CHANGE NOTICE PCN-03 FOR "	12/22/80	
33	8	DESIGN CHANGE NOTICE PCN-04 FOR 8V101V0042-G	6/16/81	
34	8	DESIGN CHANGE NOTICE PCN-01 FOR 8V111V0337-C	3/13/81	
35	3	CALCULATIONS STP-DC-008-J	10/1/80	
36	8	ECW LOOP-C SUPPLY STRESS CALCULATION 3R289RC048-B	4/13/81	
37	8	AUX FEED WATER AUX. FEED PUMP NO. 12 DISCHARGE 3S149RC200-B STRESS CALCULATION	5/18/81	
38	8	DESIGN CHANGE NOTICE PCN-02 FOR STRESS CALCULATION 3R209RC202-A	4/16/81	
39	8	DESIGN CHANGE NOTICE PCN-01 FOR STRESS CALCULATION 3R209RC202-A	2/13/80	
40	8	ECW LOOP-A SUPPLY STRESS CALCULATION 3R289RC967A	4/13/80	
41	8	SAFETY INJECTION SYSTEM STRESS CALCULATION 2N129RC1315B	5/11/81	

Document Types:

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| 1. Drawing | 5. Purchas Order |
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| 4. Revision (If applicable) |

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UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
611 RYAN PLAZA DRIVE, SUITE 1000
ARLINGTON, TEXAS 76012

September 17, 1979

Mr. Billy G. Neill, Director
Motor Equipment Services Division
Room 6A22, Federal Office Building
819 Taylor Street
Fort Worth, Texas 76102

SUBJECT: REQUEST FOR VEHICLE FOR SOUTH TEXAS PROJECT (STP)
RESIDENT INSPECTOR

Dear Mr. Neill:

Mr. Leo L. Floyd of my staff recently contacted you in reference to the subject request. During this telephone conversation, you stated that the first step in obtaining a vehicle is to submit a letter to your office describing the type of vehicle needed and how the vehicle will be used.

The Nuclear Regulatory Commission (NRC) recently decided to assign Resident Inspectors to nuclear reactor construction sites. Mr. H. S. Phillips, NRC Resident Inspector, was assigned to South Texas on August 27, 1979. As a result of this assignment, he will need either a four door station wagon or sedan to perform his inspection duties. The following outlines the justification and typical mileage:

Justification

- Use of a government vehicle will increase the Federal Inspector's visibility on site. This site has had congressional and public attention for sometime, therefore, demonstration of government attention is very important.
- Access to the site will be easier since STP security would more readily allow an official government vehicle on site than a private vehicle.
- The inspector must travel around the STP site, which covers 12,220 acres, to perform required inspections. Obviously, the inspector must have a vehicle in order to cover such a large area and to perform inspections in a manner which would be efficient and cost effective.

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DEPOSITION
EXHIBIT

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Mr. Billy G. Neill

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September 17, 1979

- The inspector must travel to and from the Post Office each day to pick up the mail.
- The inspector must perform backshift inspections at any hour of the day. Again access would be easier.
- The inspector will have to gain access to the site during strikes, natural disasters and unusual occurrences such as demonstrations, bomb threats, civil strife, etc. An official vehicle would afford instant access and would afford protection from acts of violence and/or vandalism.
- The inspector may be required to respond to emergency situations involving the transportation of nuclear materials in the southern part of Texas.
- The vehicle will also be used by other NRC inspectors at the site who routinely travel from Dallas to the South Texas Project to perform inspections.
- The vehicle will be used for official use only; it will not be used by the Resident Inspector for the purpose of commuting between his residence and the site.

Typical Mileage

Performing Site Inspections (regular and offshift)	188.0 miles/mo.
Daily Mail Pickup (site to Bay City - RT 44 mi.)	946.0 miles/mo.
Trip to Dallas-Headquarters (bi-monthly)	350.0 miles/mo.
Other Miscellaneous Trips	100.0 miles/mo.
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Total	1584.0 miles/mo.

I would appreciate anything you can do to expedite this matter since the inspector needs the vehicle as of September 3, 1979. Please contact this office at telephone number 334-2411 if you have further questions regarding this matter.

Sincerely,

Karl V. Seyfrit
K. V. Seyfrit
Director