

ORIGINAL

RELATED CORRESPONDENCE

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UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

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USNRC

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OFFICE OF SECRETARY
DOCKETING & SERVICE
BRANCH

In the Matter of:]
COMMONWEALTH EDISON COMPANY]
(Braidwood Station Units 1 & 2)]

Docket Nos. 50-456 *OL*
50-457 *OL*

Bethesda, Maryland

Monday, March 24, 1986

Deposition of:

KENNETH R. HOOKS,

a witness herein, called for examination by counsel for the Applicant, pursuant to notice and agreement of counsel as to time and place, at the offices of the Nuclear Regulatory Commission, Maryland National Bank Building, 7735 Old Georgetown Road, Bethesda, Maryland, before MARILYNN M. NATIONS, a Notary Public in and for the Commonwealth of Virginia At-Large, commencing at 11:05 o'clock a.m., when were present on behalf of the respective parties:

1 APPEARANCES:

2 On behalf of the Applicant:

3 JOSEPH GALLO, Esquire

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9 On behalf of the Intervenor:

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17 On behalf of the Nuclear Regulatory Commission:

18 STUART A. TREBY, Esquire

19 Office of the Executive Legal Director

20 United States Nuclear Regulatory Commission

21 Washington, D.C. 20555

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C O N T E N T S

Examination by Counsel

Deposition of: for Applicant for Intervenor for NRC

KENNETH R. HOOKS 4 32 35

Further Examination by Counsel

for Applicant for Intervenor for NRC

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EXHIBITS

HOOKS DEPOSITION EXHIBIT NOS. marked for identification

No. 1 [Professional Qualifications] 4

P R O C E E D I N G S

1
2 MR. GALLO: This is the second deposition today of
3 CAT team participant and it is the deposition of Mr. Kenneth
4 R. Hooks and it has been arranged by the cooperation of the
5 NRC staff.

6 I have been furnished a copy of Mr. Hooks'
7 professional qualifications. It is a one-page document and I
8 would like to have it marked for identification and included
9 in the transcript as Hooks deposition exhibit number "1."

10 (Whereupon, the document
11 previously referred to was
12 marked for identification as
13 Hooks deposition exhibit
14 number "1.")

15 Whereupon,

16 KENNETH R. HOOKS,

17 having been called as a witness on behalf of the Applicant,
18 was first duly sworn, was examined and testified as follows:

19 EXAMINATION BY COUNSEL ON BEHALF OF THE APPLICANT

20 BY MR. GALLO:

21 Q Mr. Hooks, would you state your name and business
22 address for the record?

1 A My name is Kenneth Hooks. I work for the United
2 States Nuclear Regulatory Commission, Washington, D.C.

3 Q Is your office in Bethesda?

4 A Yes, actual office location is in East-West Towers
5 in Bethesda, Maryland.

6 Q I see your educational background is included in
7 your resume or your statement of professional qualifications
8 and I won't have to ask those questions. When did you receive
9 your Masters Degree?

10 A In 1964.

11 Q When did you receive your degree in physics?

12 A In 1962.

13 Q What type of research and development activities
14 were you involved in during your time in the Air Force from
15 1962 to 1968?

16 A From 1962 to 1964 I was in graduate school as an
17 officer in the Air Force and from 1964 to 1968 I was in
18 research programs involved in ground electrical power systems
19 for remote bases and missile silos including nuclear reactors.

20 Q What research project did you work on at Bechtel?

21 A Fast flux test facility.

22 Q At Hanford?

1 A Yes.

2 Q What were your duties with respect to that activity?

3 A I was in a mechanical nuclear engineering group and
4 my job was to essentially translate the work of the reactor
5 vendor into terms that could be understood by the designers
6 that Bechtel had doing the plant design.

7 Q You were involved in mechanical systems?

8 A Pipes, pumps, valves -- that kind of thing.

9 Q What were your duties while you were at
10 Westinghouse?

11 A I spent almost three years as a systems design
12 engineer again working on pipes, pumps and valves for the
13 auxiliary systems for pressurized water reactors and the rest
14 of the time I was there was as a project engineer for the
15 Comanche Peak plant.

16 Q Are these auxiliary systems that you refer to, are
17 they a part of the NSSS system?

18 A Yes, chemical and volume control system, that kind
19 of thing.

20 Q What were your duties when you were a project
21 engineer at the New York State Power Authority?

22 A I was the project engineer for the Greene County

1 plant that was subsequently cancelled.

2 Q What were your duties before the cancellation?

3 A I was in charge of the review of the work that was
4 done by the architect/engineer, Stone and Webster, and the
5 reactor vendor which was Babcock and Wilcox.

6 Q What were your duties at Gibbs and Hill?

7 A I was on the Comanche Peak project as a project
8 engineer responsible for the mechanical and instrumentation
9 and control systems for roughly two years and then I was on
10 two different gas turbine projects, one for the industrial
11 city of Yanbu in Saudi Arabia and the other one for Taiwan.

12 Q You might as well spell that one for the reporter
13 now.

14 A Y-A-N-B-U.

15 Q What were your duties when you worked at Stone and
16 Webster?

17 A I was on two different field assignments, one at
18 Shoreham on Long Island and I was involved in the management
19 of a group that was doing as-built piping drawings and
20 subsequent to that, I spent some time at the Clinton project
21 in charge of a group of QC inspectors doing the
22 over-inspection program.

1 Q You joined the NRC in April of 1984, is that
2 correct?

3 A Yes.

4 Q Have you been working primarily on CAT team
5 inspections during that time?

6 A CAT team, I have done four of those and also working
7 on TVA.

8 Q What does that mean, "working on TVA?"

9 A Doing inspections at Tennessee Valley Authority
10 plants.

11 Q Is this a recent assignment?

12 A Unfortunately, no. I got it essentially right after
13 the Braidwood CAT inspection was completed and I have been
14 doing that ever since except for a break to do the Palo Verde
15 CAT.

16 Q These inspections at TVA are not CAT inspections,
17 are they?

18 A No.

19 Q They are inspections for the region?

20 A They are team inspections on specific questions that
21 have been brought up.

22 Q All right. I congratulate you on your statement of

1 professional qualifications. The information is very
2 succinctly laid out.

3 A Thank you.

4 Q You say you participated in four CAT inspections.
5 What plants were those inspections conducted at?

6 A The first one was River Bend and then Shearon Harris
7 and Braidwood and then almost a year gap and then Palo
8 Verde-3.

9 Q Was your inspection duties the same each time?

10 A Yes.

11 Q Design control.

12 A Yes.

13 Q Do you have the CAT team inspection report?

14 A I have the portions of it that I was responsible
15 for.

16 Q What portion is that?

17 A I prepared all of section VII and the last paragraph
18 on page A-3 which is entitled, "Design Change Control."

19 Q So paragraph A-3, was that taken from Appendix A of
20 the so-called Executive Summary?

21 A Yes. The Executive Summary, the last paragraph on
22 the bottom of page A-3.

1 MR. TREBY: May I interrupt for one second? Do you
2 have a correction to make to that paragraph on A-3?

3 THE WITNESS: Yes, if I may offer a typographical
4 correction in the second sentence on page A-3. It should say,
5 "In the area of document control the most significant
6 finding..."

7 MR. TREBY: Is that the only typo that you have
8 identified?

9 THE WITNESS: That is the only one.

10 MR. TREBY: Thank you for your indulgence,
11 Mr. Gallo. I meant to mention it and it skipped my mind when
12 we first came in the room and I thought we should point it out
13 to all the parties at this time.

14 MR. GALLO: All right.

15 BY MR. GALLO: (Resuming)

16 Q You heard Mr. Heishman indicate that he had reviewed
17 the document, that is a draft of the CAT inspection report,
18 for Braidwood. Do you recall any comments he made with
19 respect to the paragraph on page A-3 that you just corrected?

20 A No.

21 Q Did he make any comments with respect to section VII
22 of the report?

1 A He had comments but I don't remember any specific
2 ones. I would say in general there were very few comments
3 from him on that section.

4 Q Did you keep his draft of section VII with the red
5 ink marking on it?

6 A No, sir.

7 Q Has that been destroyed?

8 A Yes.

9 Q Are you familiar with Intervenor's QA contention in
10 this case?

11 A I have read through it.

12 Q Are you familiar with at least that portion of the
13 contention that deals with design control?

14 A I wouldn't want to say familiar.

15 Q Have you read it?

16 A Yes, I have read it.

17 Q I am going to show you a copy of the contention, the
18 sub-contention, item submitted by intervenors that deals with
19 or relies upon section VII of the CAT inspection report as its
20 basis.

21 I want to ask you if the statement of the
22 sub-contention varies in any significant way from the finding

1 that you made in the CAT inspection report with respect to
2 design control?

3 [Document proffered to witness.]

4 MR. TREBY: Could we identify what sub-contention
5 you are referring to?

6 MR. GALLO: Yes. I am showing the witness a
7 statement, actually it is dated May 24, 1985. It is a motion
8 to admit amended quality assurance contention which was filed
9 by the Intervenors in this case. It includes the statement of
10 the contention with all its subparts. I am showing him an
11 item on page 29 which should translate subcontention 5(a). I
12 represent that it is the same version of the subcontention
13 that was admitted by the Licensing Board.

14 [Witness reviewing document off the record.]

15 THE WITNESS: It appears to me that the
16 subcontention "A" is essentially exactly the same as the
17 paragraph that I provided to the executive summary.

18 BY MR. GALLO: (Resuming)

19 Q That was my assessment as well. According to the
20 witness list provided by the NRC staff you have been nominated
21 as a witness on this question. Is that your understanding?

22 A Yes.

1 Q Have you begun to draft any testimony on this issue?

2 A No, sir.

3 Q Have you begun to formulate in your mind any type of
4 organization with respect to your testimony?

5 A Not really.

6 Q Have you been furnished an outline of questions by
7 the staff counsel?

8 A No. I don't think so.

9 Q All right. Are you aware that this particular
10 subcontention item was the subject of a motion for summary
11 disposition by both applicant and staff?

12 A Yes.

13 Q Do you know what that means?

14 A Not really.

15 Q All right. I am sure that Mr. Treby will inform you
16 after this is over. Your section VII of the CAT report
17 indicates that the objective of at least your inspection was
18 to determine whether or not design change activities were
19 conducted in compliance with regulatory requirements and
20 whether changes to hardware were recorded on design drawings.
21 Is that a fair statement of the objective?

22 A Yes.

1 Q Turn to page III-4.

2 A (Witness complying.)

3 VII-4?

4 Q Yes. I am sorry. I have III on the mind here from
5 our last witness. Actually, it is VII-3.

6 A (Perusing document.)

7 Q You state in paragraph four that the most prevalent
8 and sustained deficiency identified in the QA audits and
9 surveillances of the various document control system is
10 incorrect annotating of design change documents.

11 Who conducted the QA audits and surveillances that
12 you are referring to in that paragraph?

13 A My recollection would be that it was both members of
14 Commonwealth Edison's QA staff and members of Sargent & Lundy
15 and the various vendors or I should say subcontractors on
16 site, mechanical and electrical.

17 Q When you say both members of Commonwealth Edison's
18 QA staff, what do you mean by that?

19 A I am sorry.

20 Q Maybe I misheard you.

21 A What I meant to say that I looked at audit and
22 surveillance reports that had been done by Commonwealth

1 Edison's QA staff, by Sargent & Lundy's staff and by the
2 staffs of various contractors on site.

3 Q These audits and surveillances had identified the
4 problem you referred to here?

5 A Yes.

6 Q What does it mean to incorrectly annotate design
7 change documents?

8 A The system that they had in place on all except one
9 of the subcontractors document control was to write on either
10 the front or the back of the design drawings that were in the
11 document control stations the outstanding but incorporated
12 changes that affected those drawings and the types of errors
13 made varied from not putting on a design change that should
14 have been on there to leaving ones on that had been
15 subsequently incorporated and should have been eliminated or
16 conceivably although I don't remember finding it, just simply
17 mistranslating a number from the list onto the drawing.

18 Q What you are talking about is a failure to note on
19 the design drawing that design changes had been made?

20 A Yes.

21 Q Then on the other hand, the failure to eliminate the
22 note if the change in fact had been effective?

1 A Yes.

2 Q Is the change we are talking about a revision to the
3 design drawing itself?

4 A Yes. It would generally be some physical kind of
5 change to the drawing although not always. Some design
6 changes don't actually affect the base drawing.

7 Q What causes these design changes that require
8 annotation just in general terms?

9 A An example would be a drawing for a pipe support and
10 upon actually going out and attempting to install the pipe
11 support the construction crew finds that due to some
12 interference it won't fit and you have to change the size of
13 the base plate or the location and you write a design change
14 against the support drawing and issue it rather than revising
15 the entire drawing and then at some later date you collect
16 those changes if there is more than one and you revise the
17 base drawing.

18 Q Who at Braidwood does the revising to the base
19 drawing?

20 A Sargent & Lundy.

21 Q Who issues the design changes you refer to?

22 A If they are ECN's, they are issued through Sargent &

1 Lundy and if they are FCR's, that is a field change and they
2 are issued through Commonwealth Edison.

3 Q Can the site contractors themselves issue changes to
4 the design?

5 A o. Sargent & Lundy is in control of the design and
6 the FCR's even though they are issued by Commonwealth Edison
7 have to be signed by Sargent & Lundy as accepting the change
8 before they can be issued.

9 Q Again looking at paragraph four on page VII-3 you
10 say the more serious deficiency is failure to list
11 unincorporated design changes on design documents and then in
12 parenthesis there are the words, "possible lost information."
13 What did you mean by that?

14 A I meant that if there is a failure to list on the
15 base document a design change to that document, the system
16 that is in place or was in place at Braidwood when I was there
17 was that the users of the documents are entitled to believe
18 that all the approved but unincorporated design changes are
19 listed on the document. So they are not required to
20 cross-check and if a significant design change was not listed
21 on the document, it is possible that work could be performed
22 from that document that would be incomplete, wouldn't match

1 the latest design.

2 Q The last sentence in paragraph four, you refer to
3 substantial efforts meaning corrective actions have been made
4 in each of the various document control programs. For
5 which contractors, are you referring to in that sentence?

6 A I would have to review the text to be certain.

7 Q Please do.

8 A (Perusing document.)

9 I looked at Comstock who is the electrical
10 contractor, Newberg who I believe was the civil contractor and
11 Phillips, Getschow who was the mechanical contractor and
12 Pullman who was the HVAC contractor.

13 So those would be the subcontractors' programs who I
14 reviewed. I also looked at Sargent & Lundy's document control
15 and Commonwealth Edison's document control.

16 Q What are the substantial efforts that you are
17 referring to in that sentence on page VII-3?

18 A I considered the efforts were substantial based on
19 findings in the QA audit and surveillance reports of similar
20 types of problems, the statements of corrective action
21 required and the reports of corrective actions that had been
22 taken.

1 Q How many and perhaps you need to refresh your memory
2 to answer this, but how many drawings did you look at to
3 determine whether the annotations were properly recorded?

4 A (Perusing document.)

5 I am not sure I put it in the report. I would guess
6 that I looked at something between 200 and 500.

7 Q Do you remember how many examples you found where
8 the annotations were not properly noted?

9 A My mistake. It is on the next page on VII-4, item
10 six, 150 documents and then I state where there were some
11 annotation problems, several cases, so I would say three to
12 five. Item seven, another 50 documents with no problems and
13 then I cross-checked some of those same documents again at
14 other document station and found discrepancies on about 15.

15 Q Were those annotation problems as well?

16 A Yes.

17 Q Of that number do you know how many involved a
18 situation where the missing annotation was for a change that
19 had not been incorporated in the design drawing?

20 A I think it is in the text of my report. It looks
21 like at the top of page VII-5, I state that there were
22 several. My recollection overall would be certainly a number

1 less than ten from the total I looked at.

2 Q We referred earlier to the summary disposition
3 action, have you had occasion to read the affidavits that have
4 been filed in support of that motion?

5 A I read I think it was by Muffett.

6 Q Muffett's affidavit?

7 A Right.

8 Q Did you read the affidavits of either Mr. Gorski or
9 Mr. Kostal in support of the applicant's motion?

10 A I don't remember reading those.

11 Q There was another problem that you noted. It had to
12 do with an engineered change notice. I guess you found one
13 example where the ECN was issued against a superceded revision
14 of the drawing?

15 A Correct.

16 Q Are you aware of the circumstances as to how that
17 happened?

18 A The understanding I had was that Sargent & Lundy's
19 field engineering office and their home engineering office in
20 Chicago were working simultaneously on that drawing. The home
21 office revised the base drawing at the same time that the
22 field office was making a change notice against the base

1 drawing and they failed to communicate adequately so that
2 their timing was off.

3 Q Do you know what corrective action if any that
4 Sargent & Lundy took with respect to this particular
5 observation that you made?

6 A I understood from reading Mr. Muffett's testimony
7 that they had decided to freeze changes against a drawing when
8 it started revision and until the revision was completed and
9 the drawing issued, no changes would be issued against the
10 drawing.

11 Q Do you know what they did with respect to a
12 retrospective action?

13 A We had requested them while we were still on site
14 for the inspection to go back in their system and look to see
15 if they had other examples of this problem. I think I
16 reported that in the report.

17 (Perusing document.)

18 On page VII-12, section seven, the second paragraph,
19 it says, "Subsequent investigation by Sargent & Lundy
20 identified the following additional six previously
21 unidentified supports for which ECN's had been issued against
22 superceded revisions of pipe support drawings."

1 That was at our request that Sargent & Lundy went
2 back and looked to see if they could find other examples.

3 Q Do you know how many pipe supports were the subject
4 of that re-inspection of which six problems were reported?

5 A No, I do not. I think that I remember that they
6 went back over about a year's time which would necessarily
7 cover some hundreds of support drawings but I don't really
8 know.

9 Q If the CAT inspection had not occurred, to your
10 knowledge was there a procedure or process in place that might
11 have caught this particular problem involving the issuance of
12 ECN's against superceded drawings?

13 A Yes. Again, I think I have made a statement to that
14 effect in the report in section VII next to the last paragraph
15 where it says that the discrepancies might have been
16 identified and resolved when the final revision of the support
17 drawing incorporated all design changes was issued prior to
18 the final Pullman/Getschow Company walkdowns.

19 Both myself and Mr. Compton who was one of our
20 mechanical inspectors looked at the situation and we felt that
21 there was a substantial probability that such problems would
22 be picked up.

1 Q Let me ask the same question with respect to the
2 annotation problem. Would that have been subsequently picked
3 up if the CAT inspection had not been conducted?

4 A It was being constantly picked up. I just happened
5 to find some of those types of errors at the time I was there
6 and they had ongoing audits and surveillances both before,
7 during and after I was there picking up the same kind of
8 errors.

9 Q How would you characterize the significance of your
10 findings and I am talking now both the annotation problem as
11 well as the ECN problem being issued against superceded
12 revision of a drawing?

13 MR. WRIGHT: Just a clarification. What do you mean
14 by significance, counsellor?

15 MR. GALLO: A synonym for significance in the
16 context of my question is important.

17 THE WITNESS: I can give you a feeling. I don't
18 have any absolute measures. I felt that the proper annotating
19 of design changes on the design drawings was not very
20 significant. There are thousands of changes being put out
21 against hundreds if not thousands of drawings and the
22 annotations are being made at a number of stations where they

1 have design drawings and I was not surprised to find that
2 there were some errors.

3 The problem of making changes to a design drawing
4 while it was being revised at another location, I considered
5 more significant than that but based on the fact that they did
6 have a procedure which should have been able to catch that
7 problem at the end, it was probably not significant.

8 BY MR. GALLO: (Resuming)

9 Q This last matter that you have described, is that
10 the issuance of the ECN against the superceded version of the
11 drawing?

12 A Yes.

13 Q As I recall, you found one example of that?

14 A Yes.

15 Q Then at your request Sargent & Lundy reviewed
16 installation drawings over a certain period of time and found
17 six more examples?

18 A Yes.

19 Q Did the number of examples that were disclosed play
20 any role in your judgment as to whether or not this was a
21 significant matter?

22 A To the extent that six didn't seem like a large

1 enough number to show that there was a breakdown* of any kind
2 in the system but rather to me it indicated that there were
3 human failures and that the procedures were not sufficient to
4 catch those human failures.

5 Q Now these opinions that you are offering both the
6 one we have just been talking about and the one I think you
7 characterize as a feeling with respect to the significance of
8 the annotating problem, what is the basis for those opinions?

9 A Experience.

10 Q Is that your experience working at the various
11 architect/engineer firms over the last whatever period of time
12 it was, 1968 through 1984?

13 A Yes, that and the two previous inspections that I
14 had been on.

15 Q How did the results of your inspection at Braidwood
16 compare to the results at Shearon Harris?

17 A Well, --

18 MR. TREBY: Objection, relevance.

19 MR. GALLO: All right.

20 THE WITNESS: Shearon Harris did not have the same
21 kind of drawing control system so there was not a direct
22 comparison. They had an overall computer listing that

1 everyone was required to refer to rather than annotating on
2 the drawings.

3 BY MR. GALLO: (Resuming)

4 Q How about at River Bend?

5 A River Bend also had a computer listing system.

6 Q Is it your understanding that they installed such a
7 computer listing system at Braidwood?

8 A I don't know. At the time I was there, Gust Newberg
9 had just gone to such a system or was just in the process of
10 implementing it and I understood that Commonwealth Edison was
11 looking at the possibility of changing to that kind of a
12 system.

13 Q To your knowledge is there any regulatory
14 requirement specifying the mechanism that should be used for
15 design control purposes?

16 A Not to my knowledge.

17 Q Have you seen the annotation approach used in your
18 work when you worked at Stone and Webster or one of the other
19 AE's?

20 A Yes, and also at Palo Verde, they used a modified
21 system of that sort.

22 Q Which AE did you work for that used the annotation

1 system? We have Gibbs and Hill and Stone and Webster.

2 A I would say Gibbs and Hill.

3 Q Thank you. Do you have the Muffett affidavit with
4 you?

5 A No.

6 Q I do someplace. You say you have read the Muffett
7 affidavit?

8 A Yes.

9 Q This is the affidavit of James W. Muffett which was
10 filed in support of the staff's response to applicant's motion
11 for summary disposition of Rorem QA subcontention 5(a).

12 (Document proffered to witness.)

13 A (Perusing document.)

14 Q You see, there is Mr. Muffett's signature properly
15 notarized and it is entitled, "Affidavit of James Muffett."

16 MR. GALLO: Counsel, have you had a chance to see
17 this?

18 MR. TREBY: Yes, I did.

19 MR. GALLO: All right. Do you want to see this?

20 MR. WRIGHT: Yes.

21 BY MR. GALLO: (Resuming)

22 Q In paragraph eight of the Muffett affidavit,

1 Mr. Muffett opines that the comment in the CAT inspection
2 report was motivated by an interest in improving an acceptable
3 process. For this reason this item did not represent a
4 significant breakdown in the -- strike that. I think that is
5 Mr. Muffett's opinion at that point. Let me start again just
6 to limit my question to the first sentence I quoted.

7 Mr. Muffett opines that he believes that the comment
8 in the CAT inspection report was motivated by an interest in
9 improving an acceptable process.

10 Is that what you had in mind when you made the
11 comment, Mr. Hooks?

12 A Certainly as far as it pertained to the problem of
13 annotating design drawings, yes. I think that the process
14 that they had was acceptable. It is a process that I believe
15 you cannot have 100-percent accuracy in and they were trying
16 to get their accuracy as good as possible.

17 With the problem of having made a change to the
18 drawing while that drawing was itself being revised, I think
19 the number of errors of that type that they identified showed
20 that the process needed fixing but not that it was necessarily
21 inadequate.

22 Q Is my understanding correct that this latter item

1 was not -- that is, the ECN item was not nominated as an item
2 of non-compliance or a potential item of non-compliance?

3 A Correct. I considered it a deviation from their
4 procedures but not a violation of regulatory requirements.

5 Q Do you disagree then with Mr. Muffett's
6 characterization in paragraph eight of his affidavit?

7 A Improving an acceptable process. I think that is a
8 reasonable statement.

9 Q I just want to make sure that in your judgment it is
10 broad enough. You seem to indicate some concern in the area
11 of the one example involving the ECN that was issued against
12 the superceded drawing. Do you think Mr. Muffett should have
13 gone further in his characterization of your position?

14 A When I read his deposition, the way I took it was
15 that he stated that they had instituted a change which in his
16 mind would preclude the problem from occurring any further and
17 that he felt that what I saw and I guess I agree with that was
18 a process that was overall adequate. It had a minor problem.
19 They took corrective action. The problem should not reoccur
20 and we knew before we left the site after the inspection that
21 they did have a procedure in effect that should have been able
22 to catch those kinds of errors before their final walkdown.

1 Q You indicated when you read his deposition, you mean
2 affidavit?

3 A Affidavit, yes.

4 Q Did you read his affidavit before it was filed?

5 A No.

6 Q When did you read his affidavit?

7 A Last week.

8 Q In preparation for this deposition?

9 A Yes.

10 Q Is there anything in his affidavit that you disagree
11 with including the sentence I pointed out to you?

12 A No.

13 Q Do you agree with his conclusions?

14 A Yes.

15 Q Were you in attendance at the famous meeting on
16 March 10?

17 A No. I was out of town.

18 Q Did somebody attend who represented the design
19 control interest?

20 A I don't know.

21 Q Did you discuss the outcome of that meeting with any
22 of your colleagues like Mr. Heishman?

1 A No.

2 Q Any of the other inspectors?

3 A No.

4 Q Do you know at all if this particular design control
5 matter was discussed at that meeting?

6 A No.

7 MR. GALLO: Your witness, Mr. Wright.

8 MR. WRIGHT: May we take a couple of minutes?

9 MR. GALLO: Sure.

10 [Whereupon, a short recess was taken.]

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1 EXAMINATION BY COUNSEL ON BEHALF OF THE INTERVENOR

2 BY MR. WRIGHT:

3 Q Mr. Hooks, my name is Timothy Wright and I am an
4 attorney with BPI and we represent the intervenors in this
5 proceeding. I have just a question or two to ask you. In
6 your paragraph on page A-3 in the last sentence you state that
7 in at least one instance this deficiency resulted in a pipe
8 support being installed and inspected in other than the latest
9 approved design.

10 A Yes.

11 Q How did you find that?

12 A that is the instance that is reported on page
13 VII-12. It was found by the mechanical group when they were
14 doing an inspection of pipe supports.

15 They went out to inspect a pipe support and in that
16 inspection, they discovered that the drawings they had been
17 given to do the support with which were supposed to be the
18 latest approved design drawing and all the approved
19 unincorporated changes did not match the support drawing --
20 the support as physically installed.

21 It was because this change had been issued based on
22 an incorrect version of the drawing.

1 Q Did you determine that there were any other
2 instances?

3 A No. The CAT team did not find any other instances.
4 When Sargent & Lundy was asked to go back and check and see if
5 they could find any more, they found six additional.

6 Q In those six additional, there wasn't a case where
7 equipment had been installed or was that the case?

8 A I would have to rely on what I said in the report.
9 They found six previously unidentified supports for which
10 ECN's had been issued against superceded revisions of pipe
11 support drawings.

12 To the best of my recollection there were no
13 significant physical problems with any of those six but I
14 really don't remember the details.

15 Q Did the members of the CAT team go back to perform
16 this type of if you will a retroactive investigation to
17 determine whether or not any other supports had been built to
18 superceded drawings?

19 A No.

20 MR. WRIGHT: I don't have any further questions.

21 MR. GALLO: I have one.

22 MR. TREBY: I have one question. Why don't I ask

1 mine first and then you can ask yours.

2 MR. GALLO: All right.

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1 EXAMINATION BY COUNSEL ON BEHALF OF THE NRC

2 BY MR. TREBY:

3 Q In the course of your deposition today, you have
4 used the term "ECN" a number of times. Could you tell us what
5 those initials stand for?

6 A It is Engineering Change Notice.

7 MR. TREBY: Thank you.

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1 FURTHER EXAMINATION BY COUNSEL ON BEHALF OF THE APPLICANT

2 BY MR. GALLO:

3 Q Are you aware that at the time of system turnover
4 for various installed systems at Braidwood that a comparison
5 is made between the ECN's and the drawing revisions to make
6 sure they are consistent?

7 A Yes. I am aware that they have such a system.

8 Q Was that system a procedural requirement at the time
9 of the CAT inspection?

10 A I truly don't know. As I stated in the report we
11 had indications, in fact, I think Bob Compton actually
12 reviewed their procedure that said that they were required to
13 integrate all approved unincorporated design changes into a
14 final version of the drawing so that they had a single drawing
15 with which to do the final walkdowns rather than having to
16 refer to the drawing and attached change notices.

17 Q Was this comparison I referred to the process that
18 you had testified to earlier that would have been the
19 mechanism for catching these seven items but for the CAT team
20 inspection?

21 A Assuming now that we were correct about their
22 procedure which required that they update and incorporate all

1 outstanding design changes, barring human error they would
2 have picked it up.

3 MR. GALLO: I have no further questions.

4 MR. WRIGHT: I have none.

5 MR. TREBY: Thank you and we waive signature.

6 MR. GALLO: Thank you. The deposition is at an end.

7 [Whereupon, at 12:03 o'clock p.m., the signature of
8 the witness having been waived with the consent of counsel,
9 the instant deposition ceased.]

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1 CERTIFICATE OF NOTARY PUBLIC
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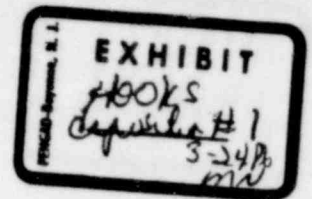
3 I, MARILYNN M. NATIONS, the officer before whom the
4 foregoing deposition was taken, do hereby certify that the
5 witness whose testimony appears in the foregoing deposition
6 was duly sworn by me; that the testimony of said witness was
7 taken by me and thereafter reduced to typewriting by me or
8 under my direction; that said deposition is a true record of
9 the testimony given by the witness; that I am neither counsel
10 for, related to, nor employed by any of the parties to the
11 action in which this deposition was taken; and further, that I
12 am not a relative or employee of any attorney or counsel
13 employed by the parties hereto, nor financially or otherwise
14 interested in the outcome of the action.

15
16 Marilynn M. Nations

17 MARILYNN M. NATIONS

18 Notary Public in and for the
19 Commonwealth of Virginia
20

21 My Commission expires January 15, 1989.
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PROFESSIONAL QUALIFICATIONS

Kenneth R. Hooks

U. S. Nuclear Regulatory Commission

I am employed as a Reactor Construction Engineer in the Office of Inspection and Enforcement, Division of Inspection Programs, Reactor Construction Programs Branch, Bethesda, Maryland.

I received a B.A. in Physics from the University of Colorado, and an M.S. in Nuclear Engineering from the Air Force Institute of Technology, Wright-Patterson Air Force Base, Dayton, Ohio.

I have been assigned to the Reactor Construction Programs Branch since April 1984. I participate in the Construction Appraisal Team inspections, primarily in the area of design change control.

Prior to joining the NRC in April 1984, I worked for three years for Stone & Webster Engineering Corporation. I held the position of Project Manager, and was assigned to field jobs in support of nuclear power plant construction.

From 1977 to 1981, I was employed by Gibbs & Hill, Inc. I held positions as Project Engineer and Project Manager on various nuclear power plant and fossil power plant projects.

I was a Project Engineer for the New York State Power Authority from 1975 to 1977, assigned to a nuclear power plant project.

From 1970 to 1975, I was employed by Westinghouse Electric Corporation. I worked as a Senior Engineer and Project Engineer on a number of nuclear power plant projects.

I was employed by Bechtel Corporation from 1968 to 1970 as a Senior Engineer, assigned to a nuclear research reactor project.

From 1962 to 1968, I served in the United States Air Force, as a graduate student in Nuclear Engineering and as a Research Officer/Project Engineer in research and development activities.