

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

DOCKETED
USNRC

BEFORE THE ATOMIC SAFETY & LICENSING BOARD FEB 18 12:02

OFFICE OF SECRETARY
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In the matter of: : Docket Nos. 50-456
COMMONWEALTH EDISON COMPANY : 50-457
[Braidwood Nuclear Power Station, :
Units 1 and 2] :

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Isham, Lincoln & Beale
Three First National Plaza
51st Floor
Chicago, Illinois
February 10, 198

Deposition of: ROBERT D. SCHULZ
called for examination by Counsel for Intervenors, BPI,
et al., pursuant to notice, taken before Pamela Briggie, a
Notary Public in and for the District of Columbia, when

ANN RILEY & ASSOCIATES, LTD.

1625 I Street, N.W. 293-3950 Washington, D.C.

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PDR ADOCK 05000456
T PDR

1 were present on behalf of the respective parties:
2

3 APPEARANCES:

4 For the Licensee Commonwealth Edison Company:

5 JOSEPH GALLO, ESQ.

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10 For the Intervenors BPI, et al.:

11 ROBERT GUILD, ESQ.

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16 For the NRC Staff:

17 GREGORY ALAN BERRY, ESQ.

18 Office of the Executive Legal Director

19 Nuclear Regulatory Commission

20 Washington, D.C. 20555
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C O N T E N T S

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E X H I B I T S

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Two page memorandum referenced in
83-109 and 85-32-31.

Exhibit No. 2:	356
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Inspection report 85-058 and 85-054.

P R O C E E D I N G S

Whereupon,

ROBERT D. SCHULZ

a witness called for examination by counsel for the
Intervenor, and having been previously duly sworn by the
Notary Public, was examined and testified further as follows:

MR. GUILD: This is the continuation of the
deposition of Robert D. Schulz, that was held initially
Friday, November 1st, 1985, on notice from the intervenors
Rorem, et al.

Mr. Schulz, we've met. My name is Bob Guild for the
record, and I'm counsel for the intervenors Rorem, et al. in
the Braidwood licensing proceeding. And I remind you that
you're still under oath from the previous session.

EXAMINATION BY COUNSEL FOR THE INTERVENOR

BY MR. GUILD:

Q Mr. Schulz, I want to talk to you about some of the matters that were still pending at the time we last spoke that were assigned to you either for closure or further follow-up; matters that had been identified as items of noncompliance, or open or unresolved items at Braidwood.

But first, I'd like to either congratulate you or otherwise -- it has come to my attention, as the basis for this deposition, that you informed your management recently that you intended to leave the agency; is that correct?

A Yes, sir.

Q Now is it sort of like Martin Luther King? Is it one of these "free at last, free at last" approaches? Or is there some other circumstance that make it less than a matter of choice on your part to depart?

A No, it was a just a career enhancement move from my point of view, I guess. I don't know what else you'd like to know.

Well, let me ask you a few questions about it. Can you tell me, first, when you informed your management that you intended to leave the agency?

1 A I can't remember the exact date. I think it was a
2 week ago Thursday or Friday. A week ago Wednesday, now I
3 remember. I think it was a week ago Wednesday.

4 Q Can you refresh your recollection --
5 [Counsel handing document to witness.]

6 Q Mr. Berry has handed you a document. A letter from
7 counsel, I assume, to the parties. It may reflect a time when
8 he learned of --

9 A It says on Thursday, January 30th. So that would be
10 pretty close to my time frame, I guess. You know, I knew it
11 was in the Wednesday to Friday of that week.

12 Q All right. And what are your plans, Mr. Schulz, if
13 you have any?

14 A I got an offer from a utility outside of Region III
15 to be a manager at an operating plant. And I'm looking
16 forward to it.

17 Q Good. Can you tell me who your prospective employer
18 is?

19 MR. BERRY: Objection, on the grounds of relevance.
20 It doesn't appear that that answer would lead to the discovery
21 of admissible or relevant evidence.

22 One thing I would note, that Mr. Schulz is available

1 for a deposition. I understand the Staff will always know how
2 to contact him, and that should either of the parties desire
3 to have Mr. Schulz appear at the hearing, that provisions will
4 be made so they will be able to contact him.

5 At this point Mr. Schulz has expressed an interest
6 in not having to reveal the name of his prospective employer.
7 But I will not instruct the witness not to answer the
8 question.

9 BY MR. GUILD:

10 Q Mr. Schulz, I appreciate that there are matters here
11 that would otherwise be perfectly private. The circumstances
12 of your departure, and what your employment is now and will
13 be in the future. Given your knowledge of evidence that is
14 relevant to the Braidwood licensing proceeding, unfortunately,
15 it becomes of interest to the parties.

16 And as a matter of discovery, representing my
17 clients' interest, I'd like to have that information. It's
18 not out of a desire to pry into your personal matters, but
19 to determine whether there is anything that's relevant to the
20 licensing case. And so I must ask you, if you would, to
21 please answer the question. And that is, to identify your
22 prospective employer.

1 A This was my personal decision not to identify it.
2 It had nothing to do with the NRC advice or anything.
3 Mr. Wallace asked me the same question, of Edison. I have not
4 told Edison either. Just a personal decision, my policy. I
5 believe that's my personal business.

6 It has nothing to do with the hearings. It has
7 nothing to do with CEC Co. It's not tied to any CEC Co
8 contractors. It's just an offer from a utility outside of the
9 Region III. And it's just a personal decision, and was my
10 decision. I mean, it wasn't an NRC-advised decision. It's
11 just my personal policy.

12 I don't know my permanent address yet, where I'm
13 going to be. Immediately when I find that out, I will notify
14 my boss right now, Mr. Gardner, who is the section chief, Ron
15 Gardner. And that information, at that time, after I begin my
16 job, will be immediately be made available both to CEC Co and to
17 yourself. And that information will be, again, made
18 immediately available to you after I begin my employment,
19 which will be a week from this Friday.

20 So it's nothing I'm trying to hide or anything that
21 has anything to do with CEC Co or its contractors or anything in
22 that matter. It's just that until I begin my employment and

1 know what my permanent address is, I believe that's my
2 personal business. But I will be glad -- I will tell
3 Mr. Gardner. And if you wanted me to drop you a card, you
4 want to give me an envelope, I'll be glad to tell you where
5 I'm going immediately after I start.

6 Q Let's see if we can address this point by point. I
7 understand then, that as your counsel stated, that you would
8 be made available, if necessary, for further deposition or
9 testimony in the Braidwood proceeding should that become
10 necessary?

11 MR. BERRY: Well, what counsel represented is that
12 Mr. Schulz's whereabouts will be -- the parties will be kept
13 apprised of Mr. Schulz's whereabouts, should the parties
14 choose to subpoena Mr. Schulz, so they'll be able to do so.
15 It may well be that the Staff will call Mr. Schulz as its
16 witness, as its own, in which case the parties will know about
17 that as well.

18 But as the Staff indicated in the letter to the
19 parties on January 30th, that after Mr. Schulz leaves the
20 agency, the Staff is in no different position than that of the
21 other parties with regards to making the witness available
22 voluntarily. The Staff as well would have to resort to the

1 subpoena process to secure his attendance, and that's what
2 we've indicated to the parties.

3 So what I represent is that the Staff will share
4 with the other parties the information that it has regarding
5 Mr. Schulz's whereabouts. So should either of the parties
6 desire to further depose Mr. Schulz or call them as their own
7 witness, they will be able to do so.

8 MR. GUILD: Well, let's try not to get too far
9 afield here. I would like the question answered,
10 nonetheless. And answered by the witness and not by his
11 counsel, particularly in the circumstances where, as you
12 state, Mr. Berry, the agency will no longer be representing
13 Mr. Schulz nor have him under the agency's control.

14 BY MR. GUILD:

15 Q So the question, the last I had for you, Mr. Schulz,
16 was would you voluntarily make yourself available for further
17 testimony or providing further evidence in the Braidwood
18 proceeding?

19 A I would have no objection to coming back and
20 testifying. But the fact -- it will not be voluntary. I will
21 have to be given a subpoena to come back by whoever wants me.
22 My whereabouts will be well known. As I said, if Mr. Gallo or

1 yourself wanted to give me an envelope, besides contacting
2 Gardner, I'd be glad to notify you as soon as I have my
3 permanent address. I'm not going into hiding. I'd be very
4 well known where I am.

5 Q Well, my point is, aside from knowing where you'll
6 be, you're not prepared to voluntarily make yourself available
7 for further testimony?

8 A No, I am not. And the basis of that is just, I have
9 a new job, a new responsibility, and I'm looking forward to
10 that, and I will be committed to the company I'm working for.
11 And so it will have to be by the subpoena basis.

12 Q Okay. Now let me ask you again the previous
13 question, and that was, respecting your views, nonetheless, I
14 must ask you if you will identify your prospective employer?

15 A No, I will not. You'll have to wait until a week
16 from Friday.

17 Q Do you intend to identify him at that time?

18 A Sure.

19 Q Okay. And would you tell me what position by title
20 or description of your duties that you'll be taking with this
21 employer?

22 A My offer letter offered me a supervisory position in

1 an operating plant. The basic duties will be investigating
2 safety concerns, any problems with the plant; looking into any
3 corrective actions; the root causes; items I can find to help
4 prevent happening again, so to prevent recurring problems;
5 doing investigation and inspection work.

6 Q Is there a title which you anticipate?

7 A I've just been given a supervisory -- the offer just
8 said supervisor.

9 Q Okay.

10 A Identify the problems before the NRC finds them.

11 MR. BERRY: If any.

12 THE WITNESS: If any.

13 BY MR. GUILD:

14 Q Mr. Schulz, when did you -- describe for me
15 generally the process that led to your seeking that employment
16 and receiving that offer.

17 A I guess what you're asking me is, what caused me to
18 test the waters, as I might put it?

19 Q Yes.

20 A Basically, I would say that I felt I had done what I
21 had set out to do at this site, and the job was somewhat
22 losing its challenge for me. That's about as honest as I can

1 put it. Based on that, I sent out a few resumes. I think
2 about six, to be exact. And prayed about it, and the good
3 Lord opened the door for me, and I felt that's where he wants
4 me to go, so that's where I'm going.

5 Q All right. And when did you do that? When did you
6 send out the resumes and test the waters?

7 A I can't give you an exact date, but I would guess it
8 would be some time in October.

9 Q Of 1985?

10 A Yes.

11 Q Did you inform anyone else in the agency that you
12 were testing the waters, you were seeking other employment, at
13 that time?

14 A I don't believe so.

15 Q We may have talked about this before, Mr. Schulz,
16 and I apologize if I'm plowing a little ground. You were the
17 senior construction resident -- are the senior construction
18 resident at Braidwood, correct?

19 A Yes, sir.

20 Q And had you considered a position in operations,
21 either at the Braidwood facility or otherwise in the agency?

22 A Yes. In fact, before I finally accepted this offer,

1 I talked to the region and asked them if they would consider
2 sending me to an operational site. And they said yes, and
3 they would get back to me.

4 That was actually -- I think it was just recently.
5 It was like the Tuesday or so before I accepted the offer on
6 Wednesday or Thursday. I don't remember exactly.

7 But basically, the utility that made me the offer
8 sweetened the pot, as you might say, or sweetened the offer of
9 what I originally thought the offer would be. And when they
10 sweetened the offer from what I originally thought it would
11 be, then I felt that was where I needed to be.

12 And I called the agency back, either the same day or
13 the next day, and told them, thank you for their
14 consideration, but I was going to take the offer. I believe
15 they were going to offer me one of the operating plants as a
16 resident or as a senior. I don't know, though.

17 Q Okay. Who is left, will be left as resident at
18 Braidwood?

19 A Well, my job will be posted. We post jobs. And
20 that's, of course, NRC-wide that can apply for that position.
21 Mr. Kropp is still at Braidwood as the resident inspector
22 right at the moment. I believe he'll be applying for the

1 senior position, as he's qualified for it.

2 And he'll be the construction -- whether he'll be
3 the senior or the resident, I'm not -- you know, that's an
4 open bid process. And Tom Tunn will stay as the senior
5 operating. And I believe my job is posted right at the
6 moment.

7 Q Mr. Kropp is presently a construction resident?

8 A Yes, sir.

9 Q Have you discussed with your management the question
10 of your testimony in the Braidwood proceeding since you've
11 given them notice that you intend to leave the agency?

12 A Not to a great extent, but we've mentioned it.

13 Q Who have you talked to about that?

14 A I've talked to Mr. Berry. I've talked to
15 Mr. Little. I think I talked to Mr. Gardner, who is my
16 present -- right now is an acting section chief. There's a
17 section chief position posted for Braidwood that will be
18 filled in the very near future. Mr. Ron Gardner is the acting
19 section chief right now.

20 Q Okay. Who had held the permanent section chief
21 position before Mr. Gardner?

22 A We have not had one. Mr. Little was branch chief,

1 was handling the supervisory roles on the site.

2 Q And is he still in that position?

3 A Yes, sir.

4 Q Back to that question of testimony. What did you
5 discuss about your prospective testimony in the Braidwood
6 licensing proceeding?

7 MR. BERRY: With Mr. Gardner and Mr. Little?

8 MR. GUILD: Let's talk about Mr. Gardner and
9 Mr. Little first.

10 MR. BERRY: The question doesn't encompass the
11 conversations with counsel.

12 MR. GUILD: Well, it may or may not, but let's first
13 talk about --

14 MR. BERRY: I just want to know so I can object.

15 THE WITNESS: Basically, I just asked if they
16 thought I'd have to come back, and that I hoped I wouldn't.
17 Not because, you know -- just for the reason that I had a new
18 job that I was enthused about that I wanted to get involved
19 in, and I'd prefer not to come back, you know.

20 And I asked them if they thought I would have to
21 come back, and they said, probably not, but they couldn't --
22 they didn't know, you know. They couldn't guarantee a yes or

1 a no. And I said fine. And it was just more, you know, do
2 you think and they said, well, probably not, but we don't know
3 for sure. We'll just have to leave that open.

4 And I asked -- I think I asked if they thought
5 anyone else would call me but the NRC, and they said, they
6 didn't know. And again I said, I prefer not to come back, and
7 that if I would come back, it would be by subpoena, by whoever
8 would give me a subpoena. And I said, fine, and we left it at
9 that.

10 It wasn't a lengthy type discussion, you know. A
11 matter of maybe a minute.

12 BY MR. GUILD:

13 Q Mr. Schulz, when you originally were given notice to
14 appear for a deposition, the notice asked you to bring with
15 you documents that were the basis for or were relevant to your
16 testimony regarding quality assurance at Braidwood. And I
17 reiterated that request to your counsel when I was informed
18 about your departure from the agency.

19 Have you brought any such documents with you today?

20 A I brought one document that I gave to my counsel.

21 MR. BERRY: I relayed your request to Mr. Schulz and
22 asked him to search his files to see if any documents

1 responsive to the matters, subcontentions which he's
2 responsible for. He indicated to me that he had one document
3 that he'd received recently from the Applicant.

4 It's a document, it appears to be a memorandum -- a
5 two-page memorandum that was provided to him in connection
6 with subcontention 6(b)(1). I believe that is referenced in
7 83-09 and 85-32-31. The Staff will not object to producing
8 this document.

9 MR. GUILD: All right.

10 MR. BERRY: I should also add that the document
11 appears to have marginalia on there. I believe it's
12 Mr. Schulz's marginalia.

13 MR. GUILD: Let me ask that this document be marked
14 for identification as a Schulz deposition exhibit.

15 [The document referred to as
16 Schulz Deposition Exhibit No. 1
17 was marked for identification.]

18 MR. GALLO: I'd like to get a look at it.

19 MR. GUILD: Sure.

20 Off the record.

21 [Recess.]

22

1 BY MR. GUILD:

2 Q Mr. Schulz, we've had marked a document as Exhibit 1
3 to Schulz deposition, and it's entitled, Evaluation, Hardware
4 Impact of ECNs and FCRs Not Being Stamped on Phillips Getschow
5 Company Controlled Drawings. This is a document that you
6 produced responsive to our document request, correct?

7 A Yes.

8 Q Can you tell me what it is and where it came from?

9 A Well, this issue was originally item 83-09-02(a).
10 It involved two drawings I identified during that inspection
11 report, which is 456-83-09 and 457-83-09, where the FCR number
12 was not stamped on a controlled drawing.

13 And Edison presented that item to me for closure.
14 They felt it was ready for closure. But as I investigated,
15 followed up on that item, I found that both CECo, Commonwealth
16 Edison and Phillips Getschow had identified quite a few other
17 drawings that didn't have FCRs or ECN stamps on them. My
18 original finding was just FCRs, but they identified other ones
19 that didn't have FCRs or ECNs on them.

20 So to me the problem --

21 MR. GALLO: Let's go off the record.

22 [Off the record.]

1 BY MR. GUILD:

2 Q All right, Mr. Schulz, if you could continue.

3 A To me the problem, since there was additional
4 drawings identified without these stamps, was expanded now and
5 it wasn't just corrective action for the two drawings.

6 So I basically made the statement to them that I
7 didn't believe the item was ready for closure, and they would
8 have to investigate to see what impact the lack of stamping
9 these drawings had, if it had any impact, on installation
10 activities. And that was documented in a report. I don't
11 know the report number right off the top of my head, but that
12 was documented in a report as the item -- is it 85-032,
13 85-031?

14 MR. BERRY: It appears to be.

15 THE WITNESS: And I kept that open. So that item
16 remained open based on report 85-032 and 031. And
17 Commonwealth Edison was reviewing the evaluating that -- you
18 know, based on the other drawings.

19 And this was part of the response that they had
20 given to me was this document, which we are in the process of
21 reviewing. And based on the fact that I am leaving the
22 agency, this item, I think as of last week, was turned over to

1 Mr. Kropp. And Edison and the NRC is still reviewing and
2 evaluating this issue.

3 BY MR. GUILD:

4 Q All right. And this issue that you've described
5 that's reflected in the document, Exhibit 1, has been
6 identified as subcontention item 6(b)(1)?

7 A Yes, sir.

8 Q Are there any other documents that you've brought
9 with you, Mr. Schulz?

10 A No.

11 Q While we were off the record, I told you that I
12 intended to examine you about inspections you conducted
13 subsequent to your November 1st deposition when we spoke
14 last. And I identified one report that I had identified with
15 your name on it that closed or addressed contention subitems.
16 And that was 85-52 and 50, dated December 6th, 1985.

17 And you conducted that report, didn't you -- that
18 inspection?

19 A I think myself and Mr. Kropp. I believe both our
20 names are on it.

21 Q Yes. And you told me that you believed there was
22 one subsequent inspection that may or may not have resulted

1 yet in a published report that addressed contention subitems.
2 Could you state for the record the number of that report,
3 please?

4 A It was 456/85-058 and 457/85-054. And that period,
5 I believe, continued from the ending date of that -- whatever
6 the ending date of that report is -- November 30th. So if
7 that was a Friday, it would have been picked up on the
8 following Monday, which would have been the 2nd or 3rd of
9 December, and running until the 21st of January. I believe it
10 ran until the 21st of January.

11 Q All right. And you weren't sure whether that had
12 been published yet; is that right?

13 A I'm not sure.

14 Q And what subpart of the contention or what item of
15 noncompliance did that address?

16 A I believe it addressed the in-service inspection
17 drawings, which is item 85-007-08.

18 Q And what subpart of the contention, if you see it
19 there?

20 A 6(c).

21 Q All right. And what action did you take on that
22 subject? Did you close it or --

1 A I closed it, yes.

2 Q And we're at this point looking to see whether that
3 report is actually on the street, available to --

4 A Yes, sir.

5 Q Before I address the -- turn your attention to the
6 subjects that you treated in those inspection reports, let me
7 ask you to explain generally what's been done with matters
8 which have been assigned to you previously for follow-up or
9 closure but have not yet been closed? What do you anticipate
10 doing with those items when you leave the agency?

11 A The contention items -- I'll address the contention
12 items listed. I think there's two of them that have not been
13 closed out. And one of them is 6(b)(1).

14 Q I'll show you -- this is a listing that you prepared
15 earlier, if it would help refresh your recollection.

16 [Counsel handing document to witness.]

17 A Right. One of them is 6(b)(1), which has to do with
18 the FCR stamping, which refers to the document we just entered
19 into the record. That 6(b)(1) item has been assigned to
20 Mr. Kropp.

21 The other item which I have not closed is item 6(d)
22 or -- you know, it still remains open -- 6(d). And that has

1 to do with the containment spray pumps and the violation we
2 had against them for basically improper setting of those
3 pumps. That is not closed. That is still open, as far as --
4 and again, I'm addressing the contention items now.

5 Q And it's still open. And who has it been assigned
6 to?

7 A Mr. Kropp also.

8 Q How about other subjects that are not contention
9 items?

10 MR. BERRY: Objection, irrelevant.

11 BY MR. GUILD:

12 Q I'd ask you to answer, anyway.

13 A Basically, I guess we're talking about open and
14 unresolved items. I don't believe, at this point in time, to
15 my knowledge, that there's been exact assignment of those
16 items yet.

17 Q Mr. Schulz, do you maintain any files or documents
18 that relate to the items of noncompliance that you've
19 addressed at Braidwood?

20 A The items that were applicable to the contentions.
21 This item I brought in. I do have a file of inspection. You
22 know, when I do my inspections. But there's nothing in there

1 -- it's a large drawer. When I say -- it's one bottom file
2 cabinet.

3 There's nothing in there that I could see that
4 related to the contention items, other than normal, you know,
5 inspection activities.

6 Q What do you mean by normal inspection activities?

7 A Like it'll document I picked 12 hangers and I looked
8 in them and what 12 hangers, what 12 pipe supports I looked
9 at, that type of thing.

10 Q So your working notes that you use when you perform
11 your inspections?

12 A Right.

13 Q Have those been previously been made available to
14 the parties in discovery, do you know?

15 A I don't believe so. My notes are not that neat.

16 Q I sympathize.

17 A And basically, like there might be the drawings I
18 use to inspect, as an example. They might be down in the
19 bottom file, and so on.

20 Q Mr. Schulz, I'd ask you to secure those documents
21 and to maintain them in your possession, subject to your
22 control, to not destroy or throw those away. They may be the

1 subject of a request for production, if they're not already
2 the subject of request for production. I ask you to preserve
3 them.

4 A Well, they are in the file cabinet at Braidwood. I
5 will not have any control of them. To me, those are agency
6 documents. If they want to keep them or throw them away,
7 that's up to them. I have kept them. So that will be -- you
8 know, I don't even know if I'll be back at the site. It's
9 very possible I will not return to the site.

10 And I told the site people, it's up to you what you
11 do with them. I felt I wanted them kept there. It's just my
12 policy. I went through them and I, as I say, I pulled the
13 document I thought was relevant to a contention. If the NRC
14 desires to keep them or throw them out, that's out of my
15 control.

16 So leaving, I'm not -- you know, they're there now
17 is all I can tell you.

18 Q All right.

19 MR. GUILD: I'd ask your lawyer then, Mr. Berry, if
20 you would see that those documents are preserved. They may be
21 the subject of a request for production, if they have not
22 already been asked for.

1 BY MR. GUILD:

2 Q Mr. Schulz, let's talk about the inspection work you
3 did that led to inspection report 85-52 and 50.

4 [Pause.]

5 Mr. Schulz, you and Mr. Kropp conducted this
6 inspection between October 21 and November 30, 1985, correct?

7 A Yes, sir.

8 Q All right. If you could, as we go through the
9 report, I'd like for you to identify those portions of the
10 report for which you're responsible. And to the extent that
11 Mr. Kropp was involved with them in the matter. If you could
12 identify the nature of his involvement, I'd appreciate that.

13 A Sure.

14 Q Page 3, licensee action on previously identified
15 item. There and in following pages you close a number of
16 items which are subparts of the intervenor's QA contention,
17 correct?

18 A Yes, sir.

19 Q All right. The first of those is identified as
20 82-05-01. It relates to the steam generator --

21 A That's mine.

22 Q -- support column bolting.

1 A I closed that one.

2 Q All right. And appears to be subcontention 1(a).

3 Now as I recall from your previous deposition, you told me
4 there was some division of responsibility on the contention
5 subitems. You were handling the bolting issue, per se. And I
6 think you said Mr. Muffett or others were dealing with the QA
7 violations regarding lack of installation procedure, or lack
8 of installation inspection procedure. Does that basically
9 summarize --

10 A Basically, I was identifying -- handling this whole
11 item. I say this whole item, just having to do with the cap
12 screws. And Mr. Muffett was handling the QA violations and
13 any other problems with equipment that might exist from that
14 violation.

15 Q Including the general subject of the corrective
16 action program having to do with safety-related mechanical
17 equipment, Mr. Muffett's work?

18 A Yes, sir.

19 Q All right. You reviewed the installation of the
20 steam generator cap screws to the currently applicable
21 Phillips Getschow construction procedure, correct?

22 A Yes.

1 Q Did you review or reach any conclusions about the
2 previous installations or installation conditions of those cap
3 screws?

4 A No.

5 Q Did you review and reach any conclusions on the
6 circumstances of the identification of the cap screw
7 installation deficiencies?

8 MR. BERRY: Do you understand the question?

9 THE WITNESS: Yes. Basically, my inspection was to
10 see that the cap screws that were installed now were adequate,
11 not what was the cause of the original noncompliance, which
12 evidently was -- from just my reading -- was a lack of
13 adherence to procedures. I think I saw one bolt that they had
14 taken out where they put the alien wrench where it had been
15 like gouged out. And I think I saw one of those bolts.

16 But my basic responsibility was to look into them
17 and see if they were done right now, rather than what caused
18 the problem in the past.

19 BY MR. GUILD:

20 Q So you didn't review the circumstances of the
21 original identification of the problem?

22 A No, I did not.

1 Q And when you say you looked at one of the bolts, one
2 of the cap screws, and the socket was gouged out, you're
3 speaking of the allen socket on that bolt?

4 A Yes, sir.

5 Q And was that damage that appeared to be reflective
6 of use of improper installation techniques?

7 A I would have to say from the one I looked at, yes.
8 I only looked at one.

9 Q Right. I can find the document if you need it, but
10 do you recall the inspection report 82-05 where Mr. McGregor
11 described the condition of the steam generator cap screws that
12 he observed at the time of his inspection?

13 A I vaguely remember reading it, yes.

14 Q Do you recall generally his description of the
15 observation of those cap screws to be in a damaged condition
16 where the allen sockets were distorted and peened, I think was
17 one of the words? Curled and peened?

18 A In my knowledge, I don't think there was a question,
19 even -- I mean, by even the licensee that the sockets were
20 damaged and needed to be replaced. I think that's why the
21 replacement job was done.

22 Q And the one example of a cap screw that you observed

1 was in a condition as described by Mr. McGregor in that 82-05
2 report?

3 A Basically, I would say yes.

4 Q Where was that cap screw that you observed? It was
5 not installed in the steam generator support column, was it?

6 A No, it was not.

7 Q Where was it maintained?

8 A I believe the millwright supervisor showed it to
9 me. Either he had it on his desk or -- I don't remember
10 exactly where I looked at it. But I just remember looking at
11 one.

12 Q Who was the millwright supervisor?

13 A Bud Willoughby.

14 Q What was Mr. Willoughby's responsibility, if any,
15 for the installation of the cap screws?

16 A I don't know if he was there for the whole
17 reinstallation process or just part of it. He's in charge of
18 equipment and correcting deficiencies. But I don't know what
19 time frame he was there, as far as what I would call the
20 reinstallation process.

21 Q You don't know if he was responsible in any degree
22 for the actual reinstallation?

1 A I think he was responsible at the final end to see
2 that it was done. Now whether he actually -- I think he
3 looked at it when the job was done. Now whether he was there
4 when the corrections were made, I don't know.

5 Q All right. When was the final installation done?

6 A When I looked at it, the work was completed.

7 Q And when was that? During the time --

8 A During that time. I don't have -- during the
9 inspection period of the report. When I looked at it, the
10 work was all completed.

11 Q And that was between October 21 and November 30 when
12 you looked at it?

13 A Yes, sir. The in-process removals, which is
14 documented in the section was actually looked at by
15 Mr. McGregor.

16 Q That's on page 3, sort of below the middle of that
17 large paragraph, "In-process removals and reinstallations were
18 monitored by the inspector"?

19 A That was done by Mr. McGregor. I talked to him
20 about the item before I closed it.

21 Q So when it says, "observed by the inspector," it
22 means Mr. McGregor?

1 A Yes.

2 Q What did Mr. McGregor tell you about his observation
3 of the removal and reinstallation?

4 A That he found the in-process removals and
5 reinstallations to be done correctly, in accordance with their
6 procedures and requirements.

7 Q Did he tell you when they removed and reinstalled
8 them?

9 A I didn't go through the dates.

10 Q You don't know when they removed and reinstalled
11 them?

12 A I probably did when I closed this item, because I
13 looked at the documentation. But I don't remember now what
14 the dates were off the top of my head.

15 Q Well, let's focus first on what Mr. McGregor told
16 you, if anything. Did you ask Mr. McGregor when they removed
17 and reinstalled?

18 A I don't think I was so concerned with the date. I
19 was concerned about the -- if it was done right. And I asked
20 him if he looked at the removals and reinstallations and he
21 said he did, that he witnessed quite a few of them. And he
22 was satisfied that they were doing the job correctly.

1 And that basically was the basis of our
2 conversation. I didn't really get down to a date and time.

3 Q Was it about to the extent that you just related it
4 now, the conversation?

5 A Yes.

6 Q You asked him that and he said yes?

7 A Basically, it was around that, yes.

8 Q In order to determine whether the removal and
9 reinstallation was, in fact, proper according to
10 specifications and requirements, you'd have to know what
11 specifications and requirements govern that activity, wouldn't
12 you?

13 A I wouldn't have to. If Mr. McGregor said he looked
14 into the requirements and the specifications for that aspect
15 of it, that would be satisfactory to me.

16 Now when I went back and looked through the
17 documentation, I would -- yes, in the documents, I would --
18 before I did my final inspection, I would have to know the
19 requirements for installing the bolts, the cap screws. And
20 based on the requirements, I would have to look then at the
21 documentation and the bolts. But at the initial -- when the
22 inspection started, I mean my first step would be -- before I

1 got to the final -- well, how was the in-process done.

2 And then Mr. McGregor said the actual work was done
3 fine. Now I wanted to go back and not only look at the bolts
4 in the field, which I did, but I wanted to look at the final
5 document package. So to determine that that item was done
6 correctly I would have to know the requirements, yes.

7 Q And Mr. McGregor would have had to know the
8 requirements for him to reach a judgment about the in-process
9 removal and reinstallation?

10 A You bet.

11 Q But you don't know what those requirements were that
12 he reviewed when he reached a conclusion about the propriety
13 of that work?

14 A I don't think we got into a detailed discussion on
15 the requirements at that time, no. I'm familiar with
16 Mr. McGregor and how he works, and he's very thorough. And if
17 he told me he felt that the installations were correct, I
18 would have no reason to question him on the installation
19 requirements.

20 Q I appreciate your comments. I'm just trying to
21 establish what you know and what somebody else will have to be
22 asked in a -- you don't know, for example, how many of the

1 bolts that he observed being removed required replacement
2 because of physical damage to the allen socket?

3 A I don't think we got into the exact numbers, no.
4 The documentation would have gotten the exact numbers, that I
5 reviewed.

6 Q Do you know, if any, how many of those bolts were
7 damaged on initial installation or on removal or on any
8 effort, an attempt at reinstallation?

9 A I would -- from what I looked at, in my memory, I
10 remember the bolts being -- the majority of the bolts being
11 damaged on the original installation.

12 Q From the documentation?

13 A Yes. There would have been a documentation, an
14 acceptable documentation package for reinstallation on all the
15 bolts. If there wasn't an acceptable documentation package on
16 all the bolts, the item wouldn't have been ready for closure.

17 Q I see. And in that package, the best of your
18 recollection would be, a documentation of a condition of the
19 bolt on initial installation?

20 A Yes, sir.

21 Q And similarly, condition of the bolt on removal?

22 A Right. Yes, there was a detailed procedure both for

1 removals and reinstallation.

2 Q And the condition of the bolts on attempted
3 reinstallation?

4 A Right.

5 Q Including any damage done to the bolts in the
6 efforts -- in the unsuccessful effort to reinstall them, if
7 any?

8 A Off the top of my head, I don't remember the
9 packages that I looked at being unsuccessful. I was -- my
10 main concern, again, was not the original problem, but if the
11 bolts were installed correctly now. By looking at the new,
12 completed documentation package, and by physically inspecting
13 the final condition of the bolts that were installed. I mean,
14 that was the main point of my inspection. It was not on the
15 original problem what caused it, but was it right now.

16 Q Right. Well, again I'm focusing on language that
17 appears on further explanation to reflect an inspection that
18 was done by Mr. McGregor. And that's the observation of the
19 in-process removal. So I'm asking you questions that you may
20 not know the answer to, and I'm just trying to establish --

21 A There's no problem. As I say, I can only answer
22 what I'm aware of and what I looked at.

1 Q Now how about the final inspections, which were
2 performed. Were those inspections observed by you or by
3 Mr. McGregor?

4 A The final inspections -- we have to divide this. I
5 did not witness the final inspections that the QC inspectors
6 performed. I'm talking about Phillips Getschow QC
7 inspectors. I did not my own final inspections of the bolts
8 by myself. And that's the 102 cap screws in Unit 1, and the
9 96 cap screws in Unit 2. So those are --

10 Q Those are your inspections?

11 A Those are my inspections. The QC inspectors
12 actually inspected all the bolts. And there would be
13 documentation packages on all the bolts. So when I talk about
14 final in this report, it's what I did.

15 Q All right. It's not the witnessing of a QC
16 inspector's final inspection?

17 A No.

18 Q All right. And that was you that did that?

19 A Yes, sir.

20 Q All right.

21 MR. GALLO: Excuse me, off the record.

22 [Discussion off the record.]

1 BY MR. GUILD:

2 Q Mr. Schulz, I may have asked this -- let me try one
3 more time. Do you know how the original steam generator
4 bolting deficiencies were originally identified?

5 A I believe Mr. McGregor identified them. That's all
6 I know.

7 Q Do you know how they were identified, if they were
8 by Edison or its contractors?

9 A No, I don't.

10 Q Do you have any knowledge about efforts to identify
11 any craftsmen or quality control personnel who may have
12 expressed concerns about the installation of steam generator
13 bolts?

14 A The only thing I know is what I read in the report.

15 Q Which report are you referring to?

16 A 82-05.

17 Q You haven't heard anything since then about Edison
18 or Phillips Getschow attempting to identify concerned workers
19 who were involved in identifying the bolting installation
20 problems?

21 A I thought you two were mentioning something this
22 morning about it. But that's all --

1 Q Other than that? Other than our conversation?

2 A No.

3 Q The inspection report on page 3 identifies a drawing
4 S1112. Is that the applicable drawing that provides for the
5 installation of steam generator bolts?

6 A I believe so, yes.

7 Q And whose drawing is that, do you know?

8 A I would believe, an S drawing, that would probably
9 be a Sargent & Lundy drawing.

10 Q Do you know what revision, if any, that drawing
11 bore? The one that you reviewed?

12 A I may have it back at the site, but I don't know
13 what it is.

14 Q Do you know whether that drawing had been revised
15 subsequent to the initial installation of the cap screws?

16 A I'm sure that drawing had been revised since the
17 initial installation of the cap screws.

18 MR. BERRY: Excuse me, did you say had or had not?

19 THE WITNESS: Had. I believe it had been revised,
20 yes. I believe the licensee made the drawing more specific.

21 BY MR. GUILD:

22 Q In what regard?

1 A In regard to the installation process.

2 Q Can you tell me in any of the degrees in which it
3 specified the installation process?

4 A I can't give you an absolute answer, but my thought
5 is, I think for one thing, I think the torque values might
6 have been different than the original method.

7 Q Were there torque values specified in the original
8 specifications?

9 A I don't remember now to be honest with you,
10 Mr. Guild. I think I remember from this that the torque
11 values were different than the original.

12 Q Do you know what the torque values were on the final
13 that you inspected the bolts to?

14 A No, I don't.

15 Q Were there torque values specified in the final
16 installation specifications that you inspected these bolts to?

17 A I believe there were torque values, yes.

18 Q Did you measure those torque values in your
19 inspection?

20 A No, I did not.

21 [Pause.]

22 A Let me qualify that. There's documentation on the

1 torque values, which I reviewed. My inspection basically, I
2 felt the bolts to see if I could turn them because, you know,
3 at other sites -- and even before these bolts were
4 retightened, I think I remember doing a normal inspection
5 where I could turn them with my hand. And I've done that at
6 other sites, you know, turned bolts with my hand that were
7 supposed to be torqued.

8 And so basically, just a policy, when I inspect
9 bolts, I'll see if I can turn them with my hand. And I
10 couldn't turn any of them with my hand.

11 Q It's a pretty good indication that a bolt hadn't
12 been torqued if you could turn it with your hand?

13 A That's right.

14 Q Do you know if the drawing or bolt installation
15 specifications, if other than a drawing, changed in any other
16 material respects from the original specifications?

17 A I remember reviewing the -- I think there's an S&L
18 specification on this. I remember reviewing that, but I don't
19 remember if it changed or not.

20 Q Have you retained any of the documentation regarding
21 this item, 82-05-01 in your file, Mr. Schulz?

22 A I may have normal inspection notes on -- I looked at

1 just what this report says, 192 and so on. But, again, that's
2 in that file drawer that I mentioned earlier.

3 Q Would you have maintained a copy of the
4 specifications or drawing?

5 A I may have. I'm not -- you know, I'm not trying to
6 evade your questions. I just don't know. Sometimes I take a
7 copy with me, sometimes I review it there and I don't take it
8 with me.

9 Q You may have?

10 A I may have. It depends if I wanted to sit there in
11 their office and review, or take it back to my office and
12 review it.

13 Q Did you review any rework to the support columns or
14 the bolt holes?

15 A Well, basically, what the report says, I reviewed
16 all the documentation for bolt hole size, bolt length and so
17 on. And when I did my inspection I, you know, looked at the
18 heads. I looked at the condition of the bolt. I looked to
19 see if, you know, there was any abnormal hole size, and so on.

20 There is another report where I think I have an open
21 item on some bolts associated with the steam generators that
22 were loose, but had been identified by Edison and would be

1 tightened, I think, prior to the hot functional test. And I
2 had that as an open item, but I don't know what report that's
3 in.

4 Q Okay.

5 A And those I found just by doing what I said, going
6 around and feeling bolts.

7 Q With your hand?

8 A Yes. And I found out they had been identified and
9 they were on a nonconformance report to be tightened, I
10 believe, prior to hot functional.

11 Q One portion of the corrective action for the bolting
12 installation problem was to elongate bolts where necessary --
13 bolt holes where necessary, correct?

14 A I believe so. I don't remember exactly, to be
15 honest with you right now.

16 Q Do you recall reviewing the condition of the bolt
17 holes to determine whether any elongation of the holes had
18 been accomplished, and whether that was per drawing
19 specification?

20 A When the head's in there, to the best that I could
21 see the bolt hole. Now the bolt hole is covered
22 predominantly. Unless, you know, the hole was expanded to a

1 great extent, you wouldn't be able to see it. That would be
2 done during the in-process installations that Mr. McGregor
3 looked at.

4 Q So for the most part, the condition of the hole was
5 obscured by the bolt head and you couldn't review it in its
6 final condition on your inspection?

7 A The only way I could really see if the bolt -- you
8 know, if the hole was -- if it was really enlarged, you know.
9 I couldn't see inside the hole. I couldn't see the heli coil
10 insert or anything like that, because it done. The work was
11 finished.

12 Q All right.

13 A I did have an added degree, what I would call, of
14 confidence in these because I had known the millwright
15 supervisor and his work at LaSalle, and I believed -- I knew
16 he knew equipment and what he was doing since they had
17 transferred him from LaSalle. And he wasn't there when they
18 originally put in the bolts.

19 And so, I had an added degree of confidence because
20 he was in charge of assuring that job was done right. And
21 that's just, I guess, what you would call professional
22 respect, which many times in our inspections has a certain

1 degree of, you know, how we do our inspections. You know, as
2 an inspector you follow your nose. And if I don't have
3 confidence in a supervisor, or an inspector, I'll dig into an
4 item much, much more thoroughly than I might if I have a --

5 Q You're referring to Mr. Willoughby?

6 A Pardon?

7 Q Mr. Willoughby, is that the supervisor you're
8 referring to? The millwright supervisor?

9 A Right, Mr. Willoughby, yes, sir.

10 Q Had previously been at LaSalle?

11 A Yes, sir.

12 Q Did you observe any holes in an elongated condition
13 when you did your final inspection?

14 A No, I did not.

15 Q Did you observe any modifications to the steam
16 generator support themselves in your inspection?

17 A The only thing I really observed was the replacement
18 of the bolts. I mean, replacement of the cap screws. I
19 didn't observe any structural changes like added welds or
20 added pieces or anything like that, if that's what your
21 question is referring to.

22 Q Well, do you recall that one possible cause of the

1 installation difficulty for the steam generator bolts was a
2 potential misalignment of the support columns? Do you recall
3 that?

4 A Yes, I think I recall that, yes, sir.

5 Q If they were out of specified incline, the alignment
6 of the holes might make installation difficult, if not
7 impossible. Do you recall that generally?

8 A Yes, and I didn't notice any alignment problems.
9 The bolts seemed to -- from what I could look at, again -- the
10 bolts seemed not to be wedged, not to be stressed. They
11 seemed to be installed correctly.

12 And the condition of the bolts seemed to imply to me
13 that there was no additional impact that had to be put on the
14 bolts to get them to fit correctly. They seemed to be a
15 normal installation to me. I didn't notice any alignment
16 problems.

17 Q My question is focusing slightly differently. And
18 that is, did you review any changes to the support leg
19 inclination or the legs themselves?

20 A I don't remember, to be honest. That's as honest --
21 I don't remember.

22 Q Okay.

1 A There was quite a lot of -- I mean, there was
2 documentation on this reinstallation that was yea thick
3 [indicating], and I don't remember.

4 Q Do you recall, aside from the documentation you
5 reviewed, Mr. Schulz, did you perform any inspection of the
6 installation of the steam generator support legs? Make any
7 measurements of degree of incline, for example?

8 A No, I did not.

9 Q Now the documentation that you reviewed, can you
10 tell me what the form was of the documents?

11 A If my memory serves me correct, there was a
12 procedure for removal of the bolts, and a procedure for
13 installation of the bolts. So the documentation I reviewed
14 had to do with both steam generator bolt removal, and steam
15 generator installation. It included things like are in the
16 report, the bolt thread condition, the bolt length, the heli
17 coil insert condition, the bolt hole size, the bolt head
18 condition, the bolt torque, and so on.

19 Q All right. Now were these documents maintained in
20 packages that related to specific bolts?

21 A There were documents that related to each steam
22 generator, and they were identified that way. They might be

1 1C, 1B, 1A.

2 Q You've got four steam generators?

3 A For each unit, right.

4 Q Okay, two units, eight steam generators?

5 A Right.

6 Q And was there a package for each steam generator?

7 A Yes, sir, a very detailed package.

8 Q And you say the records were humongous, you spread
9 your hands a foot to two feet.

10 A It was a very large effort.

11 Q And would that be a document for a steam generator?

12 A I can't tell you the exact -- I would say, maybe
13 each book was an inch or so. I don't remember exactly, but I
14 remember for a specific job, based on my experience in
15 industry, I felt the documentation was very complete.

16 Q Right. I'm just trying to identify what that
17 documentation was, so that we might want to review it and try
18 to find it.

19 For each steam generator there was a separate book?
20 Is that your recollection?

21 A Yes, sir.

22 Q And within that book there was documentation of the

1 bolting removal and installation?

2 A Yes, sir.

3 Q As you've testified. And was there a separate file
4 or a subsection of that package for bolts, in particular? How
5 were bolts documented as compared to other aspects of the
6 setting, installation of the mechanical equipment?

7 A I'm trying to remember how many bolts were for each
8 unit. I think there were 16 support columns. I guess there
9 were 16 bolts for each column, I believe. Again, to be honest
10 with you, I don't remember the breakdown. You know, if they
11 identified each column or -- I would imagine there was a
12 package for each column.

13 Q Okay. Do you recall whether the document packages
14 retained historic documentation on the bolt. Aside from
15 removal and reinstallation to current procedure, did they
16 maintain historical installation --

17 A Historical documentation was maintained. I don't
18 remember if it was in the same book or not.

19 Q Who maintained the documentation? Did Phillips
20 Getschow or Commonwealth Edison?

21 A Phillips Getschow had it when I looked at it.

22 Q Okay. Where did you look at it, Mr. Schulz?

1 A In the Getschow office.

2 Q QA office? Just general office?

3 A It was actually the engineering -- well, it was
4 where Mr. Willoughby is located, because I questioned him and
5 his people on the bolt removal and installations the same day
6 or days I was reviewing the documentation, because he was the
7 one I wanted to talk to.

8 Q And did he maintain those documents?

9 A Yes, he did. He got them for me. Now whether he
10 had them in his files or --

11 Q Okay. Do you know where the damaged steam generator
12 cap screws are maintained, aside from the one example I asked
13 you about earlier?

14 A I believe they probably -- they have a warehouse for
15 removed material. And I believe they're probably in that same
16 warehouse, for instance, where the corroded pipe is. Where
17 they have samples of the corroded pipe.

18 Q What warehouse is that?

19 A I don't know what the warehouse number is.

20 Q Is it an Edison warehouse?

21 A Yes.

22 Q It's on the site?

1 A They'd have bolts to show you if you wanted to see
2 the bolts. I'm sure they could provide the bolts to you.

3 MR. GUILD: Off the record.

4 [Discussion off the record.]

5 BY MR. GUILD:

6 Q Page 3 of your inspection report of December 6th,
7 the 85-52-50, you close a second item 83-09-02(c), having to
8 do with failure to document calibration instruments for the
9 cold bending of pipe.

10 Now, how is the pipe in question cold bent,
11 Mr. Schulz, if you know?

12 A Well, that's one of the issues that I still have a
13 concern with. There's an open or an unresolved item in this
14 report also, 83-09, which has to do with wall thickness of the
15 piping bends. And it remains -- I don't remember off the top
16 of my head whether it's open or unresolved. I believe it's
17 unresolved.

18 But there was not a procedure that they had to
19 follow in bending the pipe. And because there was not a
20 procedure to follow in bending the pipe, I still have an open
21 item on the wall thickness of the pipe, because the code
22 basically says, the ASME code, if good practices are used in

1 bending the pipe, the wall thickness of the pipe -- and you
2 follow a certain radii -- the wall thickness of the pipe
3 should meet the requirements of the code.

4 And because there was not a procedure that was
5 required to be followed for bending the pipe, I have not
6 closed the wall thickness issue out. The ovality issue -- and
7 because there were not measurements done of wall thickness.

8 The ovality issue has been closed out, basically,
9 because measurements were done on the ovality, where the
10 inspection -- hole points were signed off by the inspectors
11 based on a procedure that required them to take measurements.
12 And also on the visual examinations that we've done. I have
13 not seen a problem in ovality of bending.

14 So I closed the ovality issue out based on what it
15 states in here, that the calibration records were adequate on
16 the calipers. The inspectors had signed off that the ovality
17 was done and accepted. And the values in the samples that
18 Edison performed proved to be within the design limits of the
19 ASME code, and based on our own examinations. The wall
20 thickness issue is still open.

21 And that's why, when you asked me that question, was
22 there, you know -- how did they bend the pipe, there is not a

1 requirement -- there's not a procedure to say how they bend
2 the pipe. Now they were required to use a bender, but there
3 was not a -- in other words, the proof of the pudding was the
4 ovality measurements and the visual inspections.

5 So I still have an open issue on the wall thickness
6 requirements, based on the fact that there was not an approved
7 qualifying procedure to bend the pipe.

8 Q Okay. How does the bending of the pipe affect,
9 first, wall thickness?

10 A Your wall thickness -- now, I don't claim to be an
11 expert on bending of pipe. I want to state that straight
12 out. The wall thickness of the pipe, if you bend pipe, you
13 can -- it can become elongated and you can reduce your wall
14 thickness.

15 Q On the outside of the bend? The wall on the outside
16 of the bend?

17 A Well, wall thickness is wall thickness. I mean,
18 it's -- if you're going to reduce your wall thickness, you're
19 going to reduce your wall thickness.

20 Q Right. What I'm saying is, you elongate the pipe on
21 the outside of the bend; the wall of the pipe on the outside
22 of the bend, correct? You compress the wall on the inside of

1 the bend?

2 A Basically.

3 Q And so the wall thickness problem, if there is one,
4 arises on the outside of the pipe?

5 A Again, I don't claim to be an expert on bending.

6 Q Me either, Mr. Schulz. I'm just asking.

7 A No, my concern came from the code. And the code
8 basically stated, if good practices are used in bending the
9 pipe, you can be assured that the wall thickness will fall
10 within design limits.

11 And because there was not an approved procedure for
12 bending the pipe, I had a question on -- and basically, that's
13 what it is. I'm not stating that the wall thickness is below
14 design limits. I'm just stating I have a question. Since you
15 didn't have an approved procedure on bending the pipe, how do
16 you know that the wall thickness is within acceptable limits?

17 And that was the item in 83-09 that is still open,
18 or still unresolved. And it was -- my concern came on what
19 the code stated. And based on, for instance, other sites I
20 had been on, usually the bending procedure was qualified.

21 Q Okay.

22 A The code doesn't say it has to be qualified, but it

1 was qualified on other sites I've been on.

2 Q Can you give me an example of another site where --

3 A LaSalle.

4 Q They had a qualified bending procedure?

5 A Basically, what they would do, they'd qualify the
6 procedure originally for bending, and then every so often -- I
7 don't know what time duration -- they would go out and make
8 sure that the benders were still within the tolerances.

9 In other words, they would take a piece out to that
10 bender, bend it, measure the ovality and the wall thickness,
11 to see that the bender was still meeting its -- within
12 tolerance -- for making that bend.

13 Q The term bender refers to a machine or device that
14 bends.

15 A A machine, right. One common -- a Greenlee bender,
16 for instance, is a machine that bends a pipe.

17 Q That's a trade name?

18 A Right.

19 Q Greenlee?

20 A I think it's called Greenlee, yes. In other words,
21 there practice was not that you measured every bend, but that
22 you qualified the procedure. And then on a certain time

1 frame, went out and saw that the bender was still meeting its
2 requirements.

3 Q And when you qualified the bender, did you take
4 measurements of wall thickness?

5 A Yes.

6 Q And ovality?

7 A Yes, sir.

8 Q And who was the contractor that did the pipe bending
9 at LaSalle?

10 A Morrison. Morrison Construction Company, I believe.

11 Q Do you know who the architect engineer was?

12 A S&L.

13 Q And the licensee?

14 A Commonwealth Edison. Now there may be a direct
15 relationship between ovality and wall thickness. That's just
16 not my field of expertise. And I believe this item will be
17 followed up by our engineering department to determine, you
18 know, is there a direct relationship between the ovality
19 figures, for instance, in this closed item and wall
20 thickness. I can't answer that.

21 Q Who's going to handle the unresolved item from 83-09
22 with respect to the wall thickness?

1 A I don't know.

2 Q Do you document the status of this issue in the
3 forthcoming inspection report, the one that we're trying to
4 track down? The one that was --

5 A The wall thickness issue?

6 Q Yes.

7 A No, it's still open from 83-09.

8 Q You don't document any further follow-up on that
9 item?

10 A No.

11 Q Do you know whether or not Phillips Getschow or
12 Edison have since qualified a procedure for pipe bending?

13 A I don't believe so. I believe Edison's basis is, if
14 the ovality is acceptable, and the pipe was received with
15 adequate wall thickness, and your ovality is acceptable, then
16 the wall thickness is acceptable.

17 Q Okay.

18 MR. BERRY: Could we take five minutes?

19 MR. GUILD: Sure.

20 THE WITNESS: Just let me comment. I'm not saying
21 the wall thickness is below. I'm just saying I have a
22 question on it. Understand?

1 MR. GUILD: Yes.

2 THE WITNESS: Just for the record.

3 [Recess.]

4 BY MR. GUILD:

5 Q The inspection report, Mr. Schulz, page 3 again with
6 regard to 83-09-02(c), the pipe bending issue, references a
7 Phillips Getschow procedure entitled, cold bending of two-inch
8 and under pipe and tube. Did that procedure or that revision
9 -- or those revisions -- actually, you speak to a change. Did
10 that revision specify a means for bending pipe?

11 A I believe it mentioned, for instance, the radii the
12 bending should be done to. You know, you have five radii, six
13 radii, and so on. But I don't believe there was a specific
14 bender mentioned or any verification by quality control or
15 quality assurance that the bend was done in a certain manner.

16 Rather, it was said, a bend should be done on this
17 radii. And if the radii meets is, for instance, then it would
18 be --

19 Q So you were aware -- when you were answering
20 questions earlier and describing, for example, the LaSalle
21 procedure as an example of a qualified bending procedure, you
22 were making those comments in light of Phillips Getschow

1 procedures that you identify in your inspection report?

2 A Yes, sir.

3 Q They are not qualified bending procedures, in your
4 opinion?

5 A No.

6 Q Okay. Now what's the significance, if any, of
7 ovality to the functioning of a piping system?

8 A I would imagine it would have something to do with
9 the stress put into that pipe, and the loads the pipe could
10 take.

11 Q How about flow rate of the fluids or whatever in the
12 pipe?

13 A I would imagine that would have an effect on flow
14 rates also.

15 Q All right. And as a layman, does it seem correct to
16 you -- me, the layman now -- that you bend a pipe to a point
17 where ovality increases and the flow rates are reduced in
18 direct relation to the degree of ovality?

19 A I don't know the direct relationship. I believe you
20 could definitely bend a pipe and affect the ovality where the
21 flow rates would be affected. Now what degree they would be
22 affected, how much that would affect on the design, I don't

1 know. That's not my area of expertise.

2 MR. BERRY: I would just note my continuing
3 objection to this line of questioning. The witness,
4 Mr. Schulz has indicated on several occasions that this is not
5 in his area of expertise, that he is not an expert in this
6 area, and he's not really qualified to speak on it.

7 I will not instruct him not to answer, but I will
8 just note my objection.

9 MR. GUILD: Well, that may short-circuit a lot of my
10 questions.

11 BY MR. GUILD:

12 Q Is it fair to say that you don't have an expert
13 opinion on the acceptability of the pipe?

14 A Exactly. I'm not involved in it as a design
15 engineer in this aspect of it, and I couldn't give testimony
16 as to what effect it might have.

17 Q When you state your conclusion on page 4 of that
18 inspection report, that you reviewed calculations and you
19 reviewed piping bends and found them to be acceptable --

20 A Those calculations were reviewed by Mr. Muffett.

21 Q Okay. Well, let's -- one at a time then. Did you
22 do the visual review of the examination of piping bends?

1 A Yes, I've done visual, and Mr. Kropp's looked at
2 visual, and so has Mr. McGregor.

3 Q All right. So when you say, "numerous piping bends
4 have been examined by the inspector," you're referring to
5 yourself, Mr. Kropp and Mr. McGregor?

6 A Well, I wrote that. I'm referring, when I say
7 "inspector" I'm referring to myself, or else I would have said
8 inspectors. But we've all looked at bends. I've not seen --
9 from the visual eye point of view, I've not seen a problem
10 with ovality.

11 Q When you say visually acceptable, you're not
12 expressing an expert opinion about the effect of ovality on
13 the performance of those pipes?

14 A No. Just from a visual, from an eye point of view I
15 did not see where the pipe appeared to be outside ovality.
16 And I mean, I've seen pipes that were -- you know, where the
17 ovality had been affected. And I had not seen any evidence of
18 any ovality problems.

19 Q And when you say acceptable, is that with respect to
20 the acceptance criteria of 8 percent approximately?

21 A It appeared to me visually, again, as I stated, that
22 that ovality was within the 8 percent tolerance.

1 Q And that's based on eyeballing? Just a judgment
2 that it's less than that?

3 A Yes, that's all it is, exactly.

4 Q All right. In the body you refer to a licensee
5 random sample of piping bends?

6 A Yes, sir.

7 Q What was the documentation, if any, that you
8 reviewed that reflected such a sample?

9 A 64 and 100, licensee presented me with documentation
10 in the closure. But the actual figures, and accepted on a
11 design basis was reviewed by Mr. Muffett, the actual calcs.

12 Q Mr. Muffett reviewed the calculations?

13 A Right.

14 Q The engineering calculations?

15 A Yes, sir.

16 Q Are the results of his review documented in any
17 other report other than the one in front of us?

18 A I don't --

19 MR. BERRY: Excuse me, I didn't hear that last
20 question.

21 BY MR. GUILD:

22 Q Is Mr. Muffett's work reported elsewhere other than

1 in this inspection report?

2 A I don't know.

3 Q And who reviewed the sample and the sample results?

4 A As far as that 64 and 100 were looked at?

5 Q Yes.

6 A I believe I reviewed that in the documentation.

7 Q And how about the ovality conditions found in that
8 sample?

9 A That so many were above?

10 Q Yes.

11 A I reviewed that package, and I believe Mr. Muffett
12 probably did also.

13 Q Whose observations are you documenting here, yours
14 or Mr. Muffett's, when you talk about the results of the
15 sample in terms of the percentage --

16 A That was information that I reviewed that six of the
17 bends were above 8 percent, and four of the bends were above,
18 but below 9.3.

19 Q Okay. And again, what was the documentation that
20 you reviewed that reflected that sample?

21 A It was documentation presented to me by the licensee
22 that S&L -- this was basically S&L documentation. In other

1 words, Sargent & Lundy reviews.

2 When we're given an item for closure, that item --
3 that documentation is either in the package or its told where
4 we can get it.

5 Q Okay. Have you retained that package for this
6 item?

7 A I don't believe I have. I believe I reviewed that
8 in either the CECo office or in S&L's shop. I didn't take
9 that back to the site with me, back to the office.

10 Q Do they present you with a package for closure?
11 When you say package, what do you mean, Mr. Schulz?

12 A They have what they call green folders. And green
13 folders have the original documentation of the problem, and
14 the corrective action that was done to correct the problem,
15 and the corrective action to prevent the problem from
16 recurring again. And all that is in a package.

17 Now sometimes the documentation -- the applicable
18 documentation like maybe this on the 10 percent is not there.
19 And we will say, we want to look at that, where is it? And
20 they'll say, we'll get it for you, or you can go over here and
21 look at it. And you know, each one is sort of done
22 separately.

1 Q Do they send you this package when it's ready for
2 closure, in their opinion?

3 A No, we get a list, a computer printout, what's ready
4 for closure. And we'll look at that, and then we'll go over
5 and pull that folder, and do whatever inspections we need to
6 do from that folder.

7 Q And where did you review the green folders for this
8 item -- the green folder for this item?

9 A I would imagine it was probably a combination, in
10 the Edison office and in the S&L. I think S&L had their
11 folders over in the S&L building.

12 Q Which Edison office are you referring to?

13 A Well, there's a main -- I think at that time --
14 they've moved since to a trailer -- but that was right where
15 Mr. Wallace's office is, right in that area.

16 Q The project manager office?

17 A Yes, sir. Well, not in his office, in the building
18 near where his office is.

19 Q Do you know where these documents are maintained
20 now?

21 A They're maintained in a trailer right next to
22 Mr. Wallace's office.

1 Q Do you know whose -- what's the identification of
2 the trailer? Whose office is that?

3 A Well, it's Perry Barnes. It's compliance. I
4 believe he's compliance supervisor now. He took over from
5 Chuck Schroeder.

6 Q Is the memorandum that has been identified as
7 Exhibit 1 typical of a review documentation that Edison would
8 make available to you when an item is proposed for closure?

9 A I guess I'd call it typical, yes. This is from,
10 basically, Mike Gorski. I believe this document is from Mike
11 Gorski who's a construction engineer. Depending on the issue,
12 a document might come from QA and QC, or whatever, and it
13 could take on a different form.

14 So I don't, you know -- but research like that into
15 an item, yes, would be documented.

16 Q All right. And that's a typical format for
17 documenting that research to you?

18 A Sure. Or they may -- you know, each one is
19 different. They may say, the corrective action for this is,
20 see audit and field problem report such-and-such. And then
21 you'd go grab that audit and that field problem report.

22 So I can't say, each one is spelled out and in the

1 folder. They might say, you know, the corrective action was
2 documented in an audit. And then as an inspector, I'd go pull
3 that audit and that field problem report as an example.

4 Q Okay.

5 A Each problem, of course, would be different
6 depending on the depth of the issue, you know, the extent of
7 the issue, and what departments were involved.

8 Q All right. Page 4 of the inspection report, "The 10
9 bends that were above 8 percent met the requirements of the
10 stress report per Sargent & Lundy analysis." Is that
11 Mr. Muffett's opinion, or his conclusion?

12 A I believe that's probably the conclusion of S&L.

13 Q So you were simply reporting --

14 A What S&L found, yes, sir.

15 Q Is that your report on S&L's analysis, or
16 Mr. Muffett's report?

17 A I would say that's S&L's report.

18 Q Did you review that analysis?

19 A No, that's what Mr. Muffett did.

20 Q Okay. And he reviewed the -- he made the selected
21 sample of the calculations?

22 A Yes, right. That's why it says per Sargent &

1 Lundy's analysis in there.

2 Q Can you tell me as a matter of approach, generally
3 why Mr. Muffett's name wouldn't appear, as it doesn't, on the
4 face of this inspection report if he did analysis or performed
5 inspection activity that's contained in the report?

6 A I believe he did this inspection under a different
7 report number. I don't know what that report number is. We
8 got together and talked about it and he said, I've reviewed
9 the calcs and they're acceptable. And I said, well, should we
10 -- you know, what do you think? Can I include that in my
11 report? He said, fine, and I'm sure he reviewed this report
12 also.

13 So, I don't know. I suppose it could be done that
14 way. He could have put his name on there.

15 Q I'm just questioning, generally as a matter of
16 approach, there might be inspection activity performed by
17 another inspector that's not necessarily indicated on the face
18 of the inspection report?

19 A Well, normally an inspector's name would be on
20 there. But since he did this at a different time under a
21 different inspection report, it just wasn't included.

22 Q Okay. Do you know whether the inspection activity

1 performed by Mr. Muffett was documented in another inspection
2 report?

3 A I believe it probably was, but I couldn't give you
4 an absolute answer on that.

5 MR. BERRY: I understand that there has been an
6 inspection report issued recently by Mr. Muffett. And I would
7 expect that, intervenor being on the service list, would have
8 received a copy of it. I believe that it's 85-61/57. That
9 may well be the inspection report. If it's not those exact
10 numbers, it should be something close to it.

11 MR. GUILD: Thanks, I'll check it out.

12 BY MR. GUILD:

13 Q Let's look at the next item, Mr. Schulz. It appears
14 to be 85-15-01. It's the unauthorized holes in the structural
15 beams.

16 The licensee concluded that this problem was likely
17 limited to the drain system, correct?

18 A Yes, sir.

19 Q And you didn't explicitly review or analyze other
20 systems for this problem in your inspection activity that's
21 documented in this particular report, did you?

22 A Well, I put in there, "Numerous structural steel and

1 piping inspections by the licensee, contractors, and NRC have
2 been performed, and similar problems have not been
3 identified." Now we crawl all over that plant, you know. And
4 we haven't identified or seen other holes, other than the
5 drain systems.

6 So based on that, I felt pretty good about it, you
7 know.

8 Q I read that statement, and I think I understand what
9 that stands for and what it means. But you didn't do any
10 additional looking for this particular inspection. And I
11 think you explained why you didn't do that in that statement,
12 but --

13 A I wouldn't say we didn't do any looking. We're
14 looking all the time. You know, if you want to pinpoint it to
15 exactly this one -- during this inspection period, during
16 every inspection period we, as I say, we climb all over that
17 plant. And we look generally for anything, you know, that's
18 -- in fact, that's how a lot of problems are identified, just
19 taking a walk-through. And we didn't see the problems in
20 other areas.

21 You know, I mean, our pants get holes -- you
22 know, my pants get worn out and get holes in them -- and I'm

1 not trying to pat myself on the back. That's my job. But we
2 walk all over that plant. And I didn't feel that was a
3 problem, other than the drain system.

4 Q Right. I guess I'm just trying to establish what
5 you did or didn't do. You didn't make a specific analysis of
6 other systems or inspection of other systems looking for holes
7 in structural members, did you?

8 A The best way, again, that I could answer that is, we
9 walked through the whole plant. And that's -- I feel pretty
10 good about that. I mean, if there's a hole in the beam, I
11 think we're going to see it, based on our walk-through, you
12 know.

13 Q If the beam is accessible?

14 A Well, I can't argue with that.

15 MR. BERRY: Again, I would register objection to
16 this line of questioning. The matter in which counsel is
17 directing his questions is item 456/85-015-01; 457/85-06-01.
18 It doesn't appear to be a contention item, and I would object
19 on grounds of relevance.

20 MR. GUILD: I hate to bring the bad news, but I'm
21 afraid it is.

22 THE WITNESS: I think it is. Yes, it is.

1 MR. GALLO: Yes, that is a contention item.

2 MR. BERRY: Which contention?

3 MR. GUILD: I can't recall the number. I can dig it
4 out if --

5 THE WITNESS: I can find it in there real quick.

6 MR. GALLO: You can accept my statement.

7 THE WITNESS: Yes, I know it is, too.

8 MR. BERRY: I'll withdraw the objection.

9 THE WITNESS: Go ahead.

10 MR. GUILD: My idle curiosity about problems at the
11 plant has its limits, and today it's limited to contention
12 subitems.

13 BY MR. GUILD:

14 Q I understand that one explanation for the -- by
15 licensee for the assertion that the problem is likely limited
16 to the drain system is that the drain system requires a degree
17 of slope to the piping to enhance drainage, and that likely
18 accounts for interference with structural beams, the need to
19 maintain the proper slope?

20 A I don't know that I could comment that that's the
21 actual reason for the interferences. From my point of view,
22 it was basically class -- nonsafety-related piping. And it

1 wasn't safety-related piping. And the nonsafety-related
2 piping, you don't have the same controls over. So to me, that
3 was the cause of the problem.

4 Q Those who installed the piping didn't -- there were
5 not sufficient controls on those installing the piping, and
6 therefore, they performed these unauthorized beam
7 modifications?

8 A At that time in the job, when installing the drain
9 piping, yes, I would have to say that.

10 Q Okay. Can you tell me again the statement that you
11 made that gives you the confidence, Mr. Schulz, about the
12 scope of this problem, "Numerous structural steel and piping
13 inspections by the licensee, contractors, and NRC have been
14 performed," et cetera. Can you identify those piping and
15 structural steel inspections?

16 A Basically both by the licensee and the contractors.
17 We review constantly nonconformance reports. We again, do
18 numerous inspections by ourselves looking for any hole tags or
19 any problems. And I just didn't feel it was a problem, other
20 than the drain piping system.

21 Q Okay.

22 A This problem was originally identified by

1 Mr. Gardner. I don't know if you're aware of that fact. And
2 then I got into it and identified a couple more beams in the
3 drain piping system, you know, that had holes in them. He
4 identified one and I think I identified a couple others.

5 A hole in a beam is pretty -- fairly easy to see. I
6 mean, it's --

7 Q Again, assuming it's accessible?

8 A Yes, I guess. But when you say not accessible, you
9 know, most of the ones, I mean, are covered with installation,
10 but if there was a hole in it, you'd still be able to see it,
11 you know.

12 Q Well, this drain system, was it accessible?

13 A Sure.

14 Q All right.

15 A There's not that many beams that aren't accessible.
16 When I think of beams and columns that aren't accessible,
17 they're in walls, you know, supporting beams and columns would
18 be supporting walls. And they wouldn't have pipe running
19 through them, you know.

20 In other words, they're usually put up first, you
21 know. The beams, you know, and then the pipe comes, and
22 they're not accessible. The pipe -- you wouldn't be able to

1 run the pipe through them. You follow me?

2 Q I think so. There are beams that are inaccessible
3 that also have piping adjacent to them, aren't there?

4 A But structural usually goes in first, is what I'm
5 saying. So, you know, if they're inaccessible and the wall is
6 covered, usually the piping goes in after that. So, I mean,
7 if it was inaccessible, it would be inaccessible to the piping
8 contractor to cut a hole in it in the first place, unless they
9 knock down a concrete wall or something.

10 Q Right. I mean, you pour walls that have piping
11 penetrations that go through them, don't you?

12 A Sure.

13 Q And they have structural beams in them, don't you?

14 A Yes.

15 Q I mean, they're -- you can't say whether or not
16 there are interferences that were solved properly or
17 improperly by running a pipe through a --

18 A But normally those are pipes that are called out for
19 on the drawings as being a penetration, where these were not
20 called out on the drawings as being -- you know, they weren't
21 supposed to be penetrations.

22 Q I don't mean penetrations of the beam now. I mean

1 penetrations of the concrete. There are piping that runs
2 through concrete walls?

3 A Yes, definitely.

4 Q And there are beams that are imbedded in concrete
5 walls?

6 A Yes.

7 Q Okay. And these drain pipes were not called for
8 interfering with the beams. They were called for running --

9 A Called for running through the beams. I mean, the
10 pipe was running through the beam and it shouldn't -- per the
11 drawing, it shouldn't have been running through the beam.

12 Q That's what I mean to say. The drawing called for
13 the pipe and the beam to be separate. And the installation
14 was inconsistent with the specification to the extent that a
15 hole was cut in a beam to allow the pipe to run through the
16 beam.

17 A Right.

18 Q And such an installation could be in place in an
19 inaccessible location?

20 A I would say normally that would be picked up by
21 whoever is doing the concrete pour. I mean, if they're doing
22 a concrete pour and a pipe is there, they should pick that up.

1 Q They should have picked these up, too. These were
2 visible --

3 A There was no concrete pour, though.

4 Q I know, but these were visible in the plant.

5 A Yes, but what I'm saying is -- you're saying if it's
6 inaccessible. The concrete -- whoever is pouring the concrete
7 should pick up that pipe is not supposed to be there. Where
8 in this case, there was no concrete pour. The error was not
9 by the beam installer, the error was by the piping installer.

10 Q Right.

11 A So when you say inaccessible -- that wasn't picked
12 up because there was no concrete pour. It should have -- I'm
13 not saying they shouldn't have cut the holes in the beams, but
14 normally the inaccessible ones would be picked up as being
15 incorrect by the guy that was pouring the concrete.

16 Q Right. Well, you say that, but -- and that's what
17 I'm directing your attention to.

18 A I don't feel that's a problem, I guess is what I'm
19 saying.

20 Q Right, I understand your opinion. But does the
21 pre-pour inspection call explicitly for identifying
22 interferences between pipe and beams?

1 A I believe it does. I believe any unauthorized holes
2 or modifications are to be called out.

3 Q All right. And your opinion is that the pre-pour
4 inspection would specifically call for looking at that
5 attribute, and would provide the pre-pour inspector with the
6 drawings and specifications that would permit inspecting to
7 that attribute?

8 A Yes, sir. That's standard inspection point for
9 pre-pours.

10 Q And what exactly is that inspection point that would
11 have caught this?

12 A Look for anything that's a modification or a hole.
13 I've seen that standard in industry -- any modifications or
14 holes that are not supposed to be there per the drawing.

15 Q Modifications or holes to what?

16 A Well, just for instance, if a guy sees a hole, many
17 times you're not supposed to cover the hole up, so you're
18 going to have to take precautions that that penetration is
19 left open. You don't fill it up with concrete.

20 Q Right. Well, I guess what I'm focusing on here is,
21 the problem you identified, and Mr. Gardner, was a drain pipe
22 running through a hole in a beam, right?

1 A Right.

2 Q Now I'm not talking about a hole that doesn't have
3 anything in it now. We're talking about a guy getting ready
4 to pour concrete or wall, and there's a structural member
5 that's got a hole in it, that's got a pipe that runs through
6 it. And your testimony is that if that pipe were not
7 authorized --

8 A I believe he'd pick that up and identify it in a
9 nonconformance report, yes.

10 Q And that's because he would have that as an
11 attribute to inspect to, and he would also have all the
12 specifications and drawings that would identify that as a
13 nonconformance?

14 A Yes. Concrete pours for -- what do you want to call
15 it -- the technical aspect of the pour, have more procedures
16 and hole points and inspections than you could believe as
17 compared to, you know, an instrumentation or a -- they appear
18 to me almost to be more than necessary. You know, I mean, for
19 a concrete pour, the inspections are, and the amount of
20 procedures are tremendous.

21 Q Okay. Did you perform any review of the cause of
22 this problem, the unauthorized cutting of beams for routing of

1 this piping system?

2 A I believe the cause was, at that time there was not
3 an adequate craft training program for nonsafety-related work
4 to tell them to not just go and cut the beam area out, but to
5 document it, for instance, on the field problem report and get
6 engineering approval. And it appeared to me that they did not
7 have the adequate training back -- not at the time of the
8 report, but back when these installations occurred.

9 You know, in the past the fitter's work is fitter's
10 work, and they're concerned with the fitter's work. And the
11 structural is concerned with the structural work. And there
12 has to be this training process for them to understand other
13 contractors' obligations. And this -- obligations to, in
14 regards to the structural did not appear to me to be there.
15 And that's why this additional craft training was instituted
16 -- in this field problem report, training was instituted.

17 Q Okay. And what time frame are you referring to when
18 the original installations were made?

19 A I don't remember, but the drain system was -- I
20 don't know -- back, '79, '80.

21 Q Early on the job?

22 A Yes, sir.

1 Q Who were the craft that did the drain system?

2 A Phillips Getschow would be installing the pipe.

3 Q And would it be the same craft that would perform
4 safety-related installations?

5 A Yes, sir.

6 Q And those craft would be trained to adherence to
7 standards and requirements for safety-related work that they
8 performed?

9 A What crafts?

10 Q The crafts that did the piping installation, the
11 drain piping installation.

12 A Well, it was nonsafety-related work, so at that
13 time, I don't -- if I remember, I don't think -- that was one
14 of the problems. The training wasn't adequate for
15 nonsafety-related work.

16 Q Right. I'm not being clear in my question. To the
17 extent that they performed safety-related work, those same
18 craft would be familiar with the requirements for performing
19 that safety-related work?

20 A Yes, sir.

21 Q And they'd be familiar, for example, with the
22 requirements of Phillips Getschow and Edison's quality

1 assurance program?

2 A For safety-related work, yes.

3 Q For safety-related work.

4 A Well, basically they'd be knowledgeable in their own
5 program, not necessarily Commonwealth Edison's, but in
6 Phillips Getschow's approved QA manual and program.

7 Q Right. At that time, do you know whether or not
8 Sargent & Lundy and/or Commonwealth Edison reviewed the
9 requirements, specifications or procedures for the
10 nonsafety-related pipe work?

11 A Way back in the time frame?

12 Q Yes.

13 A I don't know. That was before I was on-site.

14 Q Did you review Commonwealth Edison Company's failure
15 to have previously identified this problem?

16 A They didn't -- I mean, we identified it and they
17 didn't. That's about all I can say about it. I don't know
18 what you would want me to review.

19 Q Do you know why they didn't identify the problem
20 before you did?

21 A No, I don't.

22 Q Did they ever explain why they didn't identify the

1 problem before you did?

2 A Well, again, we do a pretty detailed walkdown of the
3 plant. And I mean, these beams were up in, what I would call,
4 the rafters. You had to do a lot of crawling and looking.
5 And you know, it was not in a -- you know, you just wouldn't
6 see them by walking around on the floor of the -- whatever,
7 you know, the basic floor, whatever floor it was. We got up
8 and climbed ladders and crawled under pipes and noticed them
9 that way.

10 Q Help me understand where they would be. Tell me
11 where the improper modifications typically occurred.

12 A They would be in the auxiliary building where we
13 saw some. The auxiliary building, I believe, Unit 1. And I
14 think we saw some in the fuel building area. And that's the
15 area between the two containments. I believe that's where
16 they were located.

17 Q Now you said they were up in the rafters. What does
18 that mean?

19 A In other words, let's say your main floor is 406,
20 and the next floor level is 434. These would maybe be at 428,
21 429, 432, just in the ceiling below the next floor level. So
22 you'd have to get up the ladders, climb among the pipes and

1 the scaffolds, and get up there and look up high, you know.
2 And there may be HVAC work there. There may be electrical
3 work there.

4 Q Okay. So these are relatively inaccessible is your
5 point, to someone walking on the floor, in any event?

6 A I would say they would be inaccessible to one
7 walking on the floor. They wouldn't be inaccessible to one
8 walking in those areas.

9 Q All right. Were these vertical beams or horizontal?

10 A These were horizontal.

11 Q Were there any drawings that reflected the as-built
12 condition of the beam modifications before you identified the
13 problem?

14 A No. We checked the drawings to see if that hole was
15 supposed to be there, and we determined that hole was not
16 supposed to be in the beam. And there were no as-built
17 drawings of the drain system, to my knowledge.

18 Q Did the as-built drawings of the -- were there any
19 as-built drawings that included the drain system as designed
20 or installed, before the problem was identified by NRC?

21 A Not to my knowledge.

22 Q So a drawing you reviewed showed the beam but didn't

1 show any --

2 A Piping penetration.

3 Q Didn't show any piping at all. Drain piping, for
4 example.

5 A There was no drain piping shown that was supposed to
6 pass through the beam.

7 Q I guess what I'm focusing on, did it show the drain
8 pipe in question running above the beam or below the beam? Or
9 did it just not show the drain pipe at all?

10 A It wouldn't show it.

11 Q Did not show it at all?

12 A Basically, it was a structural drawing. . .
13 structural drawings, where there was a penetration would
14 identify that hole or that penetration that needed to be
15 made. And by getting the location in the building and
16 exactly what that beam was and where it was and going to the
17 drawing, there was no hole on that drawing. Or in other
18 cases, where there were supposed to be holes, they were shown
19 on the drawing.

20 Q Okay. So there was no drawing that showed both the
21 structural member and the drain pipe together, correct?
22 Before the problem was identified.

1 A Again, for those where there were supposed to be
2 holes in the beams, the structural drawing would show the hole
3 in the beam that the piping would penetrate.

4 Q Other than those, there were not drawings depicting
5 both the drain line and the beam.

6 A Right.

7 Q Was there any drawing at all reflecting where the
8 drain line was supposed to go?

9 A Not to my remembrance.

10 Q What specification --

11 A There would be a general nonsafety-related Class D
12 drawing where the pipe was supposed to go. We were basically
13 concerned with looking at the safety-related beam drawing,
14 rather than the nonsafety-related piping drawing.

15 Now, I'm sure there was a general S&L arrangement
16 drawing that showed where the piping was supposed to go. That
17 was not our concern. Our concern, as the NRC is concerned
18 with safety-related applications.

19 Q Right. That's what I'm focusing. You had a
20 drawing, nonsafety-related although it may have been, that
21 was produced by Sargent & Lundy that showed where the lines
22 were supposed to run, correct?

1 A Right.

2 Q That show where they're supposed to run in relation
3 to structure?

4 A I don't remember focusing on that aspect. I just
5 focused that the hole was not supposed to be in the beam.

6 Q So you don't know whether there was a drawing which
7 showed a pipe which supposed to be six inches above or below a
8 beam?

9 A I don't remember.

10 Q Okay.

11 A You know, our basic concern was whether the hole was
12 supposed to be in the beam and, you know, whether that was
13 structurally adequate.

14 Q Right. What I'm focusing on, Mr. Schulz, I'm trying
15 to understand why the problem wasn't identified earlier by the
16 licensee. And what I'm trying to understand is what was
17 available to the licensee that would have permitted the
18 problem to be identified. That's why I asked you about the
19 drawings and specifications.

20 A Well, the main reason it wouldn't be identified,
21 because QC inspection work wasn't done on Class -- isn't done
22 on Class D piping runs. And at the time they installed the

1 beam, of course, the structural contractor wouldn't have
2 picked it up because the beam was fine. He was done with it,
3 it was acceptable.

4 Q Right. What other nonsafety, safety, potential
5 interferences exist in the facility of similar sorts? Do you
6 have anything else in mind that --

7 A We have an item that's still open on clearances that
8 we have a concern about. And that's still open, it's being
9 looked at. And that's the only one I can think of.

10 Q Clearances of what?

11 A For instance, if you install -- turn it the other
12 way -- a safety-related pipe and you have thermal movement of
13 the pipe. And later after you install that pipe you install a
14 beam or HVAC duct, electrical conduit within an eighth of an
15 inch of that pipe, will that be picked up. And that's the
16 open item we have. I think it's an unresolved item on
17 clearances.

18 Q Okay.

19 A I think we even have a couple violations on it.

20 Q Okay. Is that an item you identified yourself?

21 A It's identified in report 83-09 by Isa T. Yin.
22 It's identified, I believe, in 84-09 by myself and

1 Mr. McGregor. I don't know about Yin's item, but I think our
2 84-09 item is still open.

3 Q Do you know whether when licensee evaluated the
4 items of noncompliance, or the nonconformances regarding those
5 items reflected in 85-15-01, 85-16-01, whether they in their
6 review for significance they identified potential generic
7 implications of interferences between safety and
8 nonsafety-related installations?

9 A I believe they're addressing that, interferences,
10 with regard to 83-09 and 84-09. I believe they're addressing
11 the beam issue with regard to this item.

12 Q Well, I understand that. But when they identified
13 the beam item, or you identified the beam item, do you know
14 whether they evaluated that -- the generic implication of that
15 item for other interferences, safety and nonsafety?

16 A I don't know. They reviewed it for possible holes
17 in other beams in other systems, I remember reviewing.

18 Q If the root cause of this problem, the beam
19 modification problem, was the failure to provide adequate
20 guidance, training, instruction to craft performing nonsafety
21 installations who made the beam modification, and an NCR was
22 originated for this problem or part of this problem. There's

1 one, for example, referred to as NCR 740 in your inspection
2 report.

3 Do you know whether as part of the disposition of
4 that NCR there was an evaluation of the generic implications
5 of that problem?

6 A I don't know.

7 Q Have you reviewed that NCR's disposition?

8 A 740?

9 Q Yes. You have?

10 A Yes, I have. I think it states right in the report,
11 that the nonconformance has been appropriately closed.

12 Q Right. And do you know what generic evaluation was
13 made in dispositioning that NCR?

14 A No. Again, as I stated, with regard to the
15 interferences, I believe that was going to be addressed in
16 83-09 and 84-09.

17 Q Do you agree that there are generic implications
18 that are reflected in the cause of the beam modification
19 problem that relate to potential interferences between safety
20 and nonsafety installations?

21 A I believe that the holes in the beams was isolated
22 to the drain system, as I closed in my report. I also believe

1 that there are potential concerns with potential problems with
2 clearances in the plant. And I've expressed that concern to
3 my management, as had Mr. McGregor. Now, potential clearance
4 problems.

5 When you say generic I would just say, with regard
6 to clearance, yes, I have a concern with regard to
7 clearances. Based not on this, but based on my inspections in
8 the plant, that I believe there are clearance problems that
9 will need to be resolved.

10 MR. BERRY: Off the record.

11 [Off the record.]

12 BY MR. GUILD:

13 Q Mr. Schulz, did you have something?

14 A Yes, I was just going to say, this thing we talked
15 about with the clearance issue and the walk thickness issue we
16 talked about earlier, myself and my management have talked
17 about this also, and the NRC has not closed these issues. And
18 we're going to look into them and follow them up to our
19 satisfaction that, you know, there's no safety concern. And
20 either what corrective action is necessary, we'll get it
21 done. Or if none is necessary, then it'll be acceptable as
22 is.

1 But what I'm saying is, these issues are open, and
2 they haven't been closed by NRC, and we will follow them to
3 their, you know, satisfactory conclusion is all I'm saying.

4 Q The clearance issue that you're referring to,
5 there's been discussion, Mr. Gallo did a deposition of some
6 NRC people on the electrical clearance issue. Is there a
7 distinct issue?

8 A That's different. That's what I would call a
9 separation issue.

10 Q All right.

11 A That's a different issue than the clearance issue.

12 Q And who is reviewing the clearance issue, the
13 non-electrical clearance issue?

14 A Let's refer to that as separation, electrical
15 separation criteria. This is a clearance issue where we're
16 talking about items in contact with each other or in, you
17 know, close to each other.

18 I don't know if that's been assigned, but I believe
19 DRS is looking into it. Now what individual, I couldn't tell
20 you. But it would be Division of Reactor Safety, which is
21 basically our engineering division.

22 Q At the region?

1 A Yes, sir.

2 Q Has that matter been referred to NRR headquarters,
3 do you know?

4 A Not the clearance issue.

5 Q Let's turn to the next item, that's 85-15-07 and
6 16-06.

7 A That's not mine -- Mr. Kropp's.

8 Q That has to do with the midway coding repairs?

9 A Right. That's totally his issue. I think there's
10 another inspector involved in that. I think Mr. Gardner's
11 involved in that also, but it isn't -- I didn't get involved
12 in it.

13 Q Has Mr. Gardner, to your knowledge, performed any
14 inspection activity at the site on that issue?

15 A On the coding issue?

16 Q Yes.

17 A Yes, I believe he has.

18 Q Is it historical work or is it work on closing this
19 item, do you know?

20 A I believe it was on closing this issue. I believe
21 this was -- I believe NRR was involved in the coding issue.
22 Now whether it was this exact issue on the repairs, I don't

1 know. But I believe NRR was involved in the coding issue.

2 Q Mr. Gardner, you think, has been on site doing some
3 work since he identified this issue?

4 A Yes, sir.

5 Q Or since the issue was identified?

6 A Yes. I think Mr. Kropp identified it, but I think
7 Gardner's been working on it also.

8 Q Okay. How about on page 5, the next issue,
9 83-09-08(a), the audit issue. That's yours, isn't it?

10 A Yes, sir.

11 Q In your inspection report on that issue, Mr. Schulz,
12 you state -- well, first of all, was anyone else involved in
13 this issue besides yourself?

14 A No, I don't believe so.

15 Q Again, your inspection report states, "A
16 comprehensive review was accomplished by the licensee and
17 piping contractor with regard to past auditing activities."
18 You state further, "The inspector examined this review," et
19 cetera.

20 Can you describe the review that you examined,
21 please?

22 A Basically, this issue originally, when I identified

1 it, the licensee came back and said, we're implementing an
2 audit schedule for all the implementing procedures now. We've
3 done it, and you can close this item. And from an NRC point
4 of view I said, well, that's good, I'm glad that you're
5 instituting a program for the future, but what about the
6 past. And I said, I think you'd better review that for what
7 effect on past activities.

8 And based on that then, they went back and did a
9 very comprehensive review on past auditing activities by
10 analyzing all the audits they did, all the surveillances and
11 audits Getschow did to their QA manual and came up with,
12 based on the combination of licensee audits and Getschow
13 audits and surveillances, if they adequately covered the
14 program for past activities. And based on my review of those
15 audits, those surveillances and that review, I felt they did.

16 Now that satisfied our concern for past auditing
17 activities. That doesn't mean, unless it was established by a
18 procedure, that would eliminate a violation. In other words,
19 that the licensee could do half, the contractor could do
20 half. And that was, you know, if that was established
21 originally in the procedure you could do that, but each
22 contractor, basically, is responsible to audit what he's

1 doing.

2 So the original violation was, you didn't cover it,
3 you know, per manual that says you'll cover all the
4 implementing -- that you'll cover the entire QA program in the
5 original manual. So they were cited for not covering it. Now
6 the point comes, okay, although we didn't cover it -- what I'm
7 talking about, the piping contractor -- did we, as a site,
8 assure that past activities were adequate.

9 And based on their review of retrofit programs,
10 Getschow audits, Getschow surveillances, and the licensee
11 surveillances and audits, it was their opinion that they did.
12 And my review substantiated that it did.

13 Q And what was the review itself? What was the
14 product of the review that you analyzed or that you evaluated?

15 A For instance, let's say an area was design -- design
16 changes, which I believe is Criteria III of the 10 CFR 50,
17 Appendix B. How did you know that you met the requirements
18 for design changes? Well, you knew it by looking at the
19 Getschow audits and surveillances, and by looking at the CECO
20 audits that you covered.

21 Q Okay. Did they perform any analysis of the scope
22 and effectiveness of the audits that were performed of those

1 procedures?

2 A Yes, they did.

3 Q And did you review that?

4 A Yes.

5 Q And what was the analysis of the effectiveness and
6 scope of those procedures that you -- or effectiveness and
7 scope of those audits that you reviewed?

8 A Between the CECOs audits and the Getschow audits and
9 the surveillances, and the retrofits programs -- and when we
10 talked about the retrofit programs, we're talking about items
11 that we identified also that caused them into a retrofit
12 program.

13 Okay, based on their audits, their surveillances,
14 and the comprehensive look at the NRC looks at, the retrofit
15 programs built in, we felt that -- they felt and I felt that
16 all areas were covered. In other words, we have, I don't
17 know, how many corrective action programs on the site. Those
18 were taken into consideration.

19 Q Did you review any evaluation of the effectiveness
20 of those audits that were performed? In other words, let me
21 just see if I can give you an example.

22 An audit was performed by Edison that, in

1 retrospect, you conclude covered a particular Phillips
2 Getschow procedure, even though Phillips Getschow did not do
3 an audit themselves of that procedure. That's one of the
4 facets of your review, correct?

5 A Yes.

6 Q It covered it. Now, was there a review done of the
7 effectiveness of that audit? Did the audit otherwise, on that
8 subject, effectively identify quality assurance program
9 implementation in that area?

10 A Let me answer that as best I can from where you're
11 coming from. Evidently, in my opinion, the Edison audits in
12 the past in certain areas were not as good as they could have
13 been or we wouldn't have the violations that we have
14 identified at the site, like in 83-09.

15 But based on what we identified and the retrofit
16 programs that were established, what the piping contractor has
17 identified since they transferred, what I would call the
18 experienced personnel to the site, which we have talked about
19 before -- based on what they identified and corrected, based
20 on what the NRC identified and corrected, based on the
21 licensee audits and surveillances, that site has been, in my
22 opinion, so thoroughly looked at that past problems, whatever

1 they were, have been identified and corrected. Because of the
2 extensiveness of our review, the new management personnel, and
3 the audits and surveillances, a combination. So I felt pretty
4 good about it.

5 Q Now let's take one step at a time. And I appreciate
6 your opinion.

7 A It's a broad answer, but that's the best way I can
8 answer the question.

9 Q Well, let's focus on this particular aspect of that
10 answer, and that is, past audits. Now, I hope you followed my
11 -- I hope my example was accurate, and if it wasn't, tell me.
12 But I'll try to restate it in a paraphrase.

13 In this review you identified that an Edison audit
14 covered a Getschow procedure, even where Getschow itself
15 historically had not audited that procedure, correct?

16 A Right.

17 Q Now for purposes of closing this item of
18 noncompliance, Mr. Schulz, 83-09-08(a), did you review the
19 effectiveness of that particular audit, that Edison audit of
20 the activities of Phillips Getschow?

21 A I guess how I have to answer that, if I looked at
22 each and every Edison audit that covered a Getschow procedure,

1 I would say no. I mean, that would be impossible. It would
2 take me so many hours. I mean, you know, I'd be doing that
3 inspection forever.

4 I looked at a sample of their audits. I've looked
5 at a lot of their audits since I've been on the site. And the
6 bottom line of my conclusion is, in the past if we went back
7 to the '81-'82 time frame there's no doubt I have to say I
8 believe their audits could have been more thorough.

9 And that's the best way I can answer it.

10 Q Let me take that as an example, as you just gave it
11 yourself. If I took an item of noncompliance in 83-09, in the
12 inspection report 83-09, and we tracked behind that for Edison
13 audits of Phillips Getschow procedures that were involved in
14 the areas where a noncompliance was identified in 83-09, do I
15 understand you correctly that you're not saying that the
16 Edison audit that should have identified that noncompliance
17 before you did, that was an effective audit? You're not
18 saying that, are you?

19 A Let me word it in my words.

20 Q Fine.

21 A I mean, there were portions of their audits that
22 were effective, yes. There were also, based on the violations

1 we found, portions of their audits that weren't effective to
2 the extent we thought they should be.

3 But in answering your overall -- yes, I would agree
4 with that -- but answering your overall question, I believe,
5 based on their audits and surveillances -- you know, we're not
6 saying all their audits were bad. Many of their audits were
7 very good, and they identified problems. But some of their
8 audits were not as good and should have identified problems
9 that we identified.

10 But based on all the retrofit programs that have
11 been done on that site, based on all our looks that we've
12 looked at, based on all the contractor looks and all the
13 audits and surveillance programs, I believe that that site has
14 probably been looked at more than any other -- and I don't
15 even know if I should say that -- but my opinion is, more than
16 any other licensed site in the region. And based on that, I
17 feel past problems in relation to this item have been
18 identified and corrected.

19 And that's the best way I can identify it. I'm not
20 saying they didn't have holes in their audit program. They
21 did, or we wouldn't have the number of violations. But, I
22 believe that site -- you know, you don't look at one aspect.

1 You look at all the retrofit programs. And I believe that
2 site has had an extremely comprehensive look at it.

3 Q Right.

4 A Okay? I mean, that's the best way I can answer it.

5 Q Okay. And again, the only way I know how to
6 approach to ask you these questions is to take it one step at
7 a time. I appreciate your overall opinion.

8 But working on this item of noncompliance that you
9 close out on page 5 of this inspection report, you don't speak
10 to or identify any inadequacies in auditing. But
11 notwithstanding that omission, you're not saying that there
12 haven't been inadequate audits?

13 A No, I couldn't make that statement. I think any
14 site where you have the findings that we had -- I mean, we
15 feel that Edison should have picked up a lot of those problems
16 and they didn't.

17 Q All right. And that is the significance of having
18 identified this item of noncompliance in the first place, is
19 it not? And that is, that you, the NRC, cited Edison for a
20 violation of Criterion XVIII, the audit requirement in
21 inspection report 83-09 because their audits were not adequate
22 to pick up the serious problems that were otherwise identified

1 in that report?

2 A The item was actually cited for not auditing
3 implementing procedures. I mean, that was really the item.
4 The item was not that they didn't pick up problems, but the
5 item was that they didn't audit the implementing procedures.
6 It's evident from the violations in 83-09 that there were
7 problems that, in my opinion, they should have picked up.

8 But, you know, I guess I'm sort of a hard-liner in
9 the industry by this means. Any utility, you know, with --
10 and I take a very strong view -- but any utility with the
11 number of people they have, and we still find problems at all
12 utilities, but I believe they should pick them up first.

13 And that's -- you know, not to get off -- but that's
14 the reason I'm looking forward to the job I'm going to. I
15 believe I can find them -- if there are any problems, I
16 believe I can find them first. And that's just my theory as
17 inspecting, you know.

18 Q That's the way the system ought to work, right?

19 A That's how it should work, yes, sir.

20 Q Okay. I took a deposition last Friday of Mr. Thomas
21 Quaka of Commonwealth Edison Company. Do you know Mr. Quaka?

22 A Yes, I do.

1 Q And Mr. Quaka, as part of documents that he
2 identified as responsive to a document request similar to that
3 made of you, respecting this item of noncompliance, 14(b) of
4 the contention, identified a document that's been marked as
5 Exhibit 3 to his deposition. And he identified this as the
6 comprehensive review -- your term -- that you report in the
7 inspection report on item 83-09-08(a).

8 And I'm going to show you that document and ask if
9 you can identify it.

10 [Counsel handing document to witness.]

11 A Yes, I remember looking at this as part of the
12 review on this item.

13 Q Is that the comprehensive review that the licensee
14 made available to you?

15 A Well, that's just their matrix, you know, the work
16 they did do. I believe there are other documents on this item
17 that would be in the close-out folder. This is the overall
18 cross-reference matrix that they did.

19 Q Now does that matrix reflect an evaluation of the
20 effectiveness of the audits that are referenced on that
21 document?

22 A Well, the effectiveness of the audits, no. It just

1 -- you'd have to look into the audit.

2 Q All right. I'm sorry, did you complete your answer?

3 A No, I'm saying that's a tremendous task. You're
4 talking about the effectiveness of audit, you'd have to look
5 at each and every audit against the procedures and see how
6 that cross-references.

7 Q And you didn't make such a review of effectiveness
8 for purposes of closing this item?

9 A We wouldn't look at every audit. We have looked at,
10 you know, looked at selected audits as they apply to
11 procedures. I can't tell you which ones we looked at, but we
12 do a sample. You know, that's just NRC. But we would take a
13 sample of these and look at how they're doing in their audits,
14 you know.

15 Q How about Edison? Did Edison make available to you
16 a review or analysis in a written form of the comprehensive --
17 of the effectiveness, excuse me -- the effectiveness of those
18 audits that are listed in that?

19 A I believe there was some printout sheets on, you
20 know, their analysis of this, yes, other than just the matrix.

21 Q Okay, and what --

22 A Something like this [indicating].

1 Q When you say "this" you're referring to your Exhibit
2 1, right?

3 A Right, something on that basis.

4 Q Can you describe those in some more detail?

5 A No, to be honestly with you, I don't remember the
6 real details of it.

7 Q Now I examined Mr. Quaka on this subject. Mr. Quaka
8 provided me with documentation that he represented as being
9 the documentation on this item. And I'll represent to you
10 that the only documentation he -- aside from the audits
11 themselves, audit reports themselves -- the only documentation
12 that he made available to me was the matrix that you have in
13 front of you.

14 A They would an analysis of this item. At least, that
15 I remember, there was some type of analysis.

16 Q You recall there being a narrative analysis?

17 A Right. Now, I can't tell you if it's one page, two
18 pages or four pages, but I believe there was an analysis of
19 it.

20 Q Right.

21 A See, because this is -- again, this was something
22 that originally this wasn't going to be done. And this is

1 where I, myself said, you've got to go back and look at the
2 past stuff. You just can't go forward. And that's documented
3 in one of the reports, I think. You know, I don't know what
4 report it is. We probably have a record of it.

5 Q All right. One of your reports you documented that
6 you instructed them to go back and look at the past history?

7 A Yes, sir.

8 Q All right.

9 MR. GUILD: Mr. Gallo, I've kind of run into another
10 juncture here -- a problem. I represented to you that the
11 document package that Mr. Quaka made available to me contained
12 no such narrative analysis that Mr. Schulz recalls, contained
13 only the matrix that's been described.

14 And so far, Mr. Miller directed our attention to the
15 company's updated responses to interrogatories, and there they
16 identified only a document that was represented to me to be
17 the matrix, which is Exhibit 3 to Mr. Quaka's deposition. And
18 I'd ask, if there is any additional analysis in the form of a
19 narrative or other documentation, was made available to
20 Mr. Schulz in closing this item, that it be made available to
21 us so we can examine from it.

22 MR. GALLO: Well, I'll take Mr. Schulz's testimony

1 and check it with Mr. Quaka to see if this narrative
2 evaluation exists.

3 MR. GUILD: Thank you.

4 MR. GALLO: Off the record.

5 [Discussion off the record.]

6 BY MR. GUILD:

7 Q Let's move on. Mr. Schulz, again on page 5 of that
8 same inspection report, item 83-09-08(c), is that your item?

9 A Yes, sir.

10 Q Now this item reflects a difference of opinion
11 between the Staff and licensee about the meaning of the reg
12 guide with respect to auditing coverage, does it not?

13 A Yes, I believe so.

14 Q Now as I understand from Mr. Quaka, the company held
15 the point of view that Reg Guide 1.144 in both its revs called
16 for auditing aspects of the QA program -- this is not a direct
17 quote -- but as appropriate. And that Staff's view was that
18 all currently utilized procedures should be implemented within
19 the annual auditing requirement. Is that a paraphrase of the
20 difference of opinion?

21 A Well, where I disagreed with, I think the response
22 to the contention was that, if I remember, they said the basis

1 of the violation was the reg guide. And the basis of the
2 violation, I believe, as stated in the violation, was 10 CFR
3 50, Appendix B, Criterion XVIII, which says all aspects of the
4 quality assurance program have to be audited.

5 So our difference of opinion as to what the basis of
6 the violation was. The basis of the violation was not the reg
7 guide at the time of the violation. The basis of the
8 violation was 10 CRF, Appendix B, Criterion XVIII.

9 Q All right. Now was there a difference of opinion
10 between the NRC and the licensee about the interpretation of
11 the reg guide?

12 A Again that was not -- you know, when they made the
13 statement the basis was the reg guide, that was never our
14 point of view. So that was news to us. It was news to me.
15 The basis of the contention was 10 CFR. So, to me that was
16 not a correct statement, because that to me was not the basis.

17 Q When you're speaking about the company's response to
18 the contention, can you tell me what you're referring to?

19 A Well, there was -- what do they call it --
20 interrogatory. And the interrogatory said the basis of the
21 violation was the reg guide. And that's where I remember
22 reading this was in their answer to the interrogatory. And

1 the basis was not the reg guide. The basis was 10 CFR 50,
2 Appendix B, Criterion XVIII.

3 Q All right. Was this your item of noncompliance?
4 Did you identify this item?

5 A Yes, sir.

6 Q Do you recall the company's response to the item of
7 noncompliance in July of 1984?

8 A I think basically they said at the time they
9 formulated the inspection plan that was not their
10 interpretation, from what I remember. But having reviewed --
11 rereviewed that, although they felt they were right at the
12 time for the way they were doing the auditing process -- and
13 this is in relation to both items, the Getschow item and this
14 one -- they relooked at it and agreed with our basis for
15 saying that the implementing procedures have to be audited.
16 They changed their mind.

17 Q At the time of the item of noncompliance or
18 thereafter in discussing this noncompliance with the licensee,
19 before you saw their answer to our interrogatories in the
20 licensing case, had they ever expressed to you their view of a
21 difference of opinion about interpretation of the reg guide
22 was the basis for the --

1 A I don't remember the reg guide being brought up.

2 Q And did you participate in the enforcement
3 conferences on 83-09?

4 A Yes, sir.

5 Q And would you have heard it then if they'd made that
6 -- stated that position?

7 A All I can say is, I do not remember the reg guide
8 being brought up, prior to that -- what I just read in the
9 interrogatory. Now I could have missed something, but I don't
10 remember the reg guide being brought up, other than the
11 interrogatory.

12 Q And do you recall the reg guide difference,
13 interpretation difference, being cited by Edison in its
14 response to 83-09?

15 A It could have been, but I don't remember the reg
16 guide being mentioned. I just remember there being a
17 difference in interpretation.

18 [Pause.]

19 As a point also, don't forget, I was in a different
20 division. In other words, I was basically -- DRS was
21 responsible for answering the 83-09 response. I was in
22 Division of Reactor Programs. That doesn't mean I wouldn't --

1 I was asked to look at it, and give my response and I did.
2 And you know, I could have missed something. I don't know.

3 Q Okay. Mr. Schulz, would you agree that the
4 requirements of Appendix B, Criterion XVIII require that the
5 audits be sufficient to determine the effectiveness of the
6 licensee's QA program?

7 A Yes, sir.

8 Q Therefore, the scope and the timing and the subject
9 matter of audits should be such as to meet that effectiveness
10 requirement?

11 A Yes.

12 Q Do you know whether or not the licensee, whether
13 Commonwealth Edison acknowledges that its audit program in the
14 past was ineffective in any respects?

15 MR. BERRY: Effective?

16 BY MR. GUILD:

17 Q Ineffective in any respects.

18 A I don't know if I'd use that word. I guess, I think
19 Edison, if I had to use Edison words, I would think they felt
20 the audit program could be improved in certain areas. And I
21 guess, you know, you'd have to ask Edison, but I mean, that
22 would be my comment. I believe they felt, at least in

1 selected areas that the audit program could be improved.

2 Q Do you agree with Edison's position expressed in the
3 affidavit of Mr. Thomas E. Quaka of December 20th, 1985 that
4 Comstock QA program was being effectively audited up until the
5 time of the 83-09 inspection?

6 MR. GALLO: Objection. It seems to me there's a
7 lack of confidence here, or at least a lack of foundation.
8 There's no indication that the witness knows about Comstock.
9 His inspection report covers Getschow and Pullman.

10 BY MR. GUILD:

11 Q Would you answer the question?

12 A To be honest with you, that's what was going to be
13 my answer. I didn't look into the Comstock audit program,
14 Mr. van Dell did. So that was going to be my answer. I can't
15 comment on that.

16 Q All right. Do you agree with Mr. Quaka's testimony
17 in the same document that up until the time of the 83-09
18 inspection, the Phillips Getschow QA program was being
19 effectively audited?

20 A I'd like to read it because I don't remember.

21 Q Sure.

22 A You know, I don't know how he said it or what the

1 context was.

2 Q I'm going to show you -- you're welcome to read all
3 or any part of it if you'd like to. This is Commonwealth
4 Edison Company's motion for summary disposition of subpart
5 14(b) of intervenor's quality assurance contention. It's
6 Mr. Quaka's affidavit on that subject. And it's an affidavit
7 of 12 pages.

8 I apologize for my hand markings, but what I'm
9 looking at is, after explaining the differences of opinion and
10 the reviews conducted by Edison, at page 8 the question is
11 asked of Mr. Quaka, "Mr. Quaka, has site quality assurance
12 evaluated the impact of the failure of Phillips Getschow
13 Company and L.K. Comstock and Pullman to annually schedule
14 and/or audit all elements of the quality assurance programs,
15 including active implementing procedures during the time prior
16 to the time of the NRC Staff's inspection." And the answer
17 begins at page 9. It says, "Yes, it has," and it goes on.

18 And in part, I want to direct your attention to
19 Mr. Quaka's expressed opinion that the program was effectively
20 being audited, Comstock's, Phillips Getschow's, and
21 Pullman's. You're welcome to read any other part you want
22 you, but I submit that that's the material part of his

1 affidavit.

2 [Counsel handing document to witness.]

3 [Discussion off the record.]

4 THE WITNESS: Mr. Quaka answered it in regard to the
5 combination of licensee audits and Getschow audits. And I got
6 -- I'd have to answer that question in regard to my philosophy
7 as an inspector. Based on the fact that I believe any, I
8 would say, Level IV violation and above -- this is my personal
9 philosophy -- any Level IV violation and above should be
10 identified by the contractor or the licensee. And that's my
11 personal philosophy.

12 I would say the audits did not meet those goals.
13 And, you know, it's a very subjective -- that's a very
14 subjective question. But that's my general philosophy.

15 BY MR. GUILD:

16 Q Had you seen the document I showed you before? Have
17 you reviewed the company's motion for summary disposition and
18 supporting materials before now, Mr. Schulz?

19 A Yes, I did.

20 Q And how did you come to do that?

21 A I provided summary disposition on this item myself.

22 Q You worked with Staff on summary disposition

1 responses on this item?

2 A Yes. One thing I do want to clarify, so there
3 doesn't appear to be a conflict on the audit item that I
4 closed. The audit item that I closed is not only based on the
5 licensee audits and the contractor audits, but it's based on
6 all the retrofit programs also that are involved, which gets
7 into our identification.

8 So based on their audits -- the licensee audits, the
9 contractor audits and their surveillances, and the retrofit
10 programs, that's why the item was closed. I don't want to
11 appear there's a contradiction there. You understand what I'm
12 saying?

13 Q You're saying that you have enhanced confidence
14 because there's retrofit programs in addition to the audit?

15 A Yes. And that's mentioned in the closure of the
16 item.

17 Q Right. Let me just turn to that related point. How
18 have you been involved in summary disposition on this item,
19 Mr. Schulz? What's your work been?

20 A On this audit item?

21 Q Yes.

22 A Well, basically when I close an item, I believe that

1 item has been satisfactorily resolved or I won't close it, as
2 you've seen from my reports where I leave numerous items open,
3 even though other people may think they're closed. So when I
4 close an item, I believe that item can be, basically, summary
5 disposed as being adequately fixed and corrected for, you
6 know, repetitiveness and so on.

7 Q So what did you do on this item regarding summary
8 disposition?

9 A Basically I supported what I said in the report. I
10 believe there can be -- summary disposition can be
11 accomplished based on the fact that the NRC has looked at this
12 item and is satisfied that it is adequate.

13 Q Have you submitted any materials to support a Staff
14 position for summary disposition on this item?

15 A Yes.

16 Q And what were those materials?

17 A Well, just my affidavit of the reasons that that
18 item was closed, and the reason the NRC is confident that that
19 item does not have any adverse effect on the safety of the
20 plant.

21 Q And what does your affidavit say?

22 A I don't remember the exact words. Just basically

1 supporting what I said in the closing of the report. You
2 know, you'll be seeing the affidavit. I can't quote the
3 affidavit, you know.

4 MR. BERRY: Obviously, Mr. Schulz is one of the
5 individuals that the Staff has consulted with in preparing its
6 responses to the motions for summary disposition. As you
7 know, that response is due to be filed February 18th, and to
8 the extent that Mr. Schulz or any other Staff member provides
9 assistance to the Staff in the formulating of the Staff's
10 response, then that will be reflected in that filing.

11 Mr. Schulz, I think has indicated that he has
12 provided some input in this particular issue. This would be a
13 14(b)(1) issue. And I would not object to you asking him what
14 his position was. But, as far as the position of the Staff,
15 you know, that's going to be reflected in its response.

16 I think he's answered that his position is basically
17 what's reflected in the inspection report.

18 BY MR. GUILD:

19 Q What other items of the contention did you provide
20 affidavits for on summary disposition, Mr. Schulz?

21 A I don't remember off the top of my head. I think
22 there was four or five, six items.

1 Q Any ones we've spoken of this morning so far?

2 MR. BERRY: I think I may be of some help here. We
3 had a list somewhere.

4 MR. GUILD: All right.

5 THE WITNESS: I think the beam issue was in there,
6 the holes in the beams. My stand as an inspector would be,
7 any item that I closed, that I felt would be closed from my
8 perspective -- maybe not from the NRC Staff position -- would
9 be available for summary disposition, or I wouldn't close it.

10 MR. GUILD: Okay.

11 [Discussion off the record.]

12 BY MR. GUILD:

13 Q Let's see if we can refresh your recollection,
14 Mr. Schulz. Staff counsel has been of some help off the
15 record.

16 I've got a list of the items that Edison sought
17 summary disposition for. And the ones that I've seen your
18 name associated with. You were to close out items 6(f), (g),
19 and (i) of the contention. They are --

20 A If you can give me a list that says the issues I can
21 probably recall my memory.

22 Q 6(f), (g), and (i) are -- we're looking at Edison's

1 schedule, the description of the items.

2 A I believe I supported that one [indicating].

3 Q Okay, summary disposition of 6(f). And that's the
4 subject of Part 21 report on -- is that minimum wall?

5 A Yes, both 6(f), (g), and (i), I supported for
6 summary disposition.

7 Q And (g) is unapproved bidder for the pipe cleaning?

8 A Right.

9 Q And (i) is incorrect whip restraint plate, right?

10 A Yes. The originating name is in there, it should be
11 Schulz.

12 Q It says McGregor, it should be Schulz on this
13 schedule?

14 A Yes, it should be Schulz.

15 Q All right. And you also supported summary
16 disposition on 14(b)(1) and (3)?

17 A (1) and (3), yes.

18 Q Okay, now back to your inspection report of December
19 5 on this item, 83-09-08(c), regarding Pullman. Was the
20 review by the licensee that you evaluated of similar scope and
21 subject as the review performed by licensee of the Phillips
22 Getschow audit history?

1 A It was the same type of review. But the Pullman
2 finding was very limited -- the finding was limited. In other
3 words, the finding was limited to just four implementing
4 procedure.

5 Q The NRC's finding?

6 A Yes. Where the Getschow finding was -- basically,
7 we cited them for not adequately auditing implementing
8 procedures across the board. So the scope of the finding was
9 much larger for Getschow than it was for Pullman.

10 Q Okay.

11 A I was more concerned with the Getschow finding than
12 I was with the Pullman finding.

13 Q Okay. Was the evaluation -- was there an evaluation
14 made of the coverage of the procedures that Pullman had not
15 audited by other devices such as Edison audits and
16 surveillances?

17 A Again, the same type of review that went into the
18 Getschow -- the combination of audits and the S&L review went
19 into the Pullman.

20 Q Right.

21 A I mean, it was just less procedures, you know. It
22 was a much easier review, I would say, compared to the other

1 one, you know, from a man-hour point of view by Edison. The
2 man-hours were -- I'm just guessing -- were 10 times in the
3 Getschow than they were in the Pullman effort.

4 Q By Edison?

5 A Yes.

6 Q Okay. And the evaluation as summarized on page 6 of
7 your inspection report, how those procedures were covered by a
8 combination of reviews other than Pullman audits, correct?

9 A Right, other than Pullman -- Pittsburgh Testing
10 Laboratory, S&L reviews. A big thing was like all these
11 50-55(e) reports. Basically, the whole HVAC installations
12 had been reexamined, reinspected, you know, based on problems
13 in the past. So that area, from an installation point of
14 view, had really been covered, you know, based on the
15 50-55(e)s and, you know, our finding, if you remember on the
16 HVAC in-process controls and so on. That had been hit pretty
17 heavy.

18 From an inspector's point of view, the Pullman audit
19 finding didn't bother me much, you know.

20 Q Okay. The paragraph at the top of page 6 there,
21 "Evaluations by the licensee and Pullman concluded that either
22 of the procedures were adequately implemented." Now when you

1 use the word procedure there, are you speaking of audit
2 procedures?

3 A I'm talking about these implementing procedures.

4 Q The actual work procedures by Pullman?

5 A Right, 3(1)(f), 5(1)(f), 9(3)(f) and 10(2)(f).

6 Q Okay. Did you make any evaluation of the
7 effectiveness of Pullman audits of those procedures? Or of
8 its QA program, let me state it that was.

9 Let me try again. Aside from the evaluation that
10 you reviewed and summarized in your inspection report here,
11 did you make any evaluation of the effectiveness of Pullman's
12 audits of its QA program up to the point of inspection report
13 83-09?

14 A I guess the best way for me to answer that is, I
15 believe the Pullman audits were effective to the extent of
16 what they were auditing. By that I mean, there was a
17 different interpretation on what was needed as far as
18 in-process inspections, and so on.

19 So they were, basically, they were meeting their --
20 their audits were stating that they were meeting their
21 program. The NRC problem with HVAC was, we did not feel that
22 the in-process inspections, the QC inspections were adequate.

1 And that was one of our concerns with the Edison
2 original audit -- Edison audit program which has been
3 corrected. You just can't audit to the procedure. You have
4 to audit and determine if the procedure meets the reg guides
5 and the standards first. You follow me?

6 And that -- I believe the Pullman audits were
7 effective for what they were looking at.

8 Q All right. Well, I'm using effectiveness in the
9 fashion that it's used in 10 CFR Appendix B, Criterion XVIII.
10 And that is, as a measure of the audit obligation under that
11 criterion, those audits must be sufficient to effective -- to
12 ensure the effectiveness of the QA program. And in that
13 regard, were the Pullman audits, pre-83-09, effective to
14 assure the -- sufficient to assure the effectiveness of the QA
15 program?

16 A We're going back in a long time frame, and you know,
17 for me to give a real specific answer, I'd have a hard time.
18 All I can say is, generally, I felt the Pullman audits were
19 effective to what they were auditing, just like I said.

20 I think there was a difference of interpretation of
21 what was needed in HVAC because, I guess, basically, industry
22 views on what was needed had changed. And if there was a

1 hole, that's where it was.

2 I don't remember seeing a hole in the effectiveness
3 of the audits. And it was a ways back, so that's as honest as
4 I can answer it.

5 Q Okay. To the extent that there were deficiencies in
6 the HVAC QA program that were not identified by Pullman, isn't
7 that a measure of the ineffectiveness of their audits?

8 A I have to answer that -- and I think you'll find my
9 answer acceptable -- but Commonwealth Edison had identified
10 themselves numerous problems in the HVAC area, and documented
11 those in reinspections in 50-55(e)s, which I think -- I mean,
12 that was a very good point from the licensee's point. They'd
13 identify problems.

14 Where I felt the hole was, again, was although they
15 were going back and reinspecting and reinstalling items, they
16 were not going back to the extent, what possibly could be the
17 root cause of these, let's say, welding problems, or
18 configuration problems in their HVAC work. That there was not
19 enough QC involvement.

20 So although they were going back and fixing it,
21 which was great, to me the problem in HVAC was the fact that
22 QC was not involved to the extent they should have been. And

1 that necessitated all these relooks and reinstallations and
2 reinspections. So there's where we had a difference of
3 opinion.

4 Q Right. And did the Pullman audits identify that
5 hole, that lack of adequate QC involvement?

6 A No, because again, as Edison approved the program,
7 that program they had was -- the program that they had in HVAC
8 was deemed to be acceptable. So they were auditing to the
9 program, and their audits were effective in the fact that they
10 said they were meeting the program.

11 The NRC problems in 83-09, we did not feel that the
12 program was adequate, as far as QC involvement. You
13 understand?

14 Q Yes, thank you.

15 Was Edison's evaluation of the Pullman audit history
16 contained in a document, Mr. Schulz?

17 A Yes, I believe there's a document similar to
18 [indicating] --

19 Q Similar to your Exhibit 1?

20 A Right.

21 Q A narrative analysis of the company response?

22 A Yes, sir.

1 MR. GUILD: Mr. Gallo, to the extent that there's
2 one of those narrative analysis underlying the Pullman audit
3 item, we'd ask that that be made available to us. I can't
4 represent that I've asked Mr. Quaka that question because we
5 didn't talk about HVAC. So if we may have made available.

6 MR. GALLO: I'll check into it.

7 MR. GUILD: Thank you.

8 BY MR. GUILD:

9 Q All right, we'll take a break in just a minute here,
10 but let me ask you. I think in the same inspection report of
11 December 5th we've been talking about 52 and 50, did you
12 identify -- are you responsible for any of the unresolved
13 items that are enclosed on page 6 and following?

14 A Yes. But I don't believe any of those are
15 contention items.

16 Q All right. How about the open items that appear on
17 page 8? Are you responsible for those?

18 A Yes.

19 Q And the 55(e) item, page 8 and following?

20 A Yes.

21 Q And page 9?

22 A Yes.

1 Q I direct your attention to 84-09-09, page 7, with
2 respect to Comstock training craft supervision and craft staff
3 personnel. What did you review in closing that item?

4 A It's not a contention item.

5 MR. BERRY: Objection, relevance.

6 BY MR. GUILD:

7 Q I'd ask you to answer it.

8 MR. BERRY: It's not a contention item.

9 THE WITNESS: Are we opening discovery to all items
10 that are not contention items?

11 MR. GUILD: No, but I'd ask you to answer the
12 question just the same on this matter.

13 THE WITNESS: Do you want me to answer the question?

14 MR. BERRY: If you remember.

15 THE WITNESS: That's up to you, Mr. Berry.

16 MR. BERRY: Go ahead and answer the question.

17 THE WITNESS: All right, go ahead again.

18 BY MR. GUILD:

19 Q 84-09-09, training of Comstock supervision craft.
20 What did you review in closing that item?

21 A What it says in the item, the training records for
22 each one.

1 Q You reviewed the --

2 A The work construction.

3 Q -- procedure?

4 A Sure.

5 Q And the training records?

6 A Yes, sir.

7 Q By training records, you reviewed attendance lists,
8 training sessions?

9 A You bet. Lesson plans, you know, I'd imagine.

10 Q Did you make any other evaluation of the
11 effectiveness of the training of the Comstock craft in closing
12 this item?

13 A No, I did not.

14 Q You didn't administer any examinations yourself to
15 craftsmen?

16 A No, no.

17 Q Interview any craftsmen?

18 A Other than I normally would do on my normal
19 inspection activities. We're always talking to craftsmen.

20 Q So you reviewed the documentation of their training
21 program on this item?

22 A Yes, sir.

1 Q Okay, I think that's all the items that are in this
2 inspection report that I wanted to ask you about, Mr. Schulz.

3 MR. GUILD: Why don't we take a break and then come
4 back?

5 [Recess.]

6 BY MR. GUILD:

7 Q Mr. Schulz, you made available to me a document that
8 is a portion, I believe of the draft inspection report that's
9 to be published soon on an item that you closed?

10 A I don't know if this is the draft. This very
11 possibly -- I think it's been sent out, so this is probably
12 the -- we haven't got it, but it's in the mail. So this
13 probably is not the draft.

14 MR. BERRY: At this point there is some uncertainty
15 as to whether this is the final version of the official
16 inspection report that's been sent out to all the parties, or
17 is a draft. In any event, I guess, Mr. Schulz probably --

18 THE WITNESS: In any event, I wrote it.

19 MR. BERRY: It appears to reflect Mr. Schulz's work
20 product.

21 BY MR. GUILD:

22 Q All right. And what's the number of this

1 inspection, Mr. Schulz?

2 A I believe it's 85-058 and 85-054. That would be 58
3 for Unit 1 and 54 for Unit 2.

4 Q All right. And on page -- what's numbered five of
5 that document -- let's have that marked as Exhibit 2, please.

6 [The document referred to as
7 Schulz Deposition Exhibit No. 2
8 was marked for identification.]

9 [Counsel handing document to witness.]

10 BY MR. GUILD:

11 Q At the bottom of the page marked five there is an
12 item 85-07-08. Did you identify this item, in the first
13 place, Mr. Schulz?

14 A Yes, sir, I did.

15 Q Now on the second page of the document, page 6,
16 there's referenced a supplemental response from the licensee.
17 What did that response supplement?

18 A Basically, when they answered this violation they
19 stated in their own procedure, in the CECO procedure that a
20 checklist was a part of that procedure. But that ISI
21 checklist was the Getschow checklist, and in my view did not
22 mandate that Getschow use that checklist. And I believe that

1 was needed.

2 So I asked the licensee to commit, in a letter to
3 the NRC, that that checklist would be used by Getschow
4 in producing the drawing. And that letter to the NRC which
5 stated it would be used becomes a requirement then.

6 So now it was -- from my perspective it was a legal
7 requirement that Getschow use that ISI checklist in producing
8 the drawing.

9 Q Okay. Who prepares the ICI checklist that's
10 referenced on your inspection report?

11 A The ICI checklist would be followed by the Getschow
12 personnel who make the ISI drawings. So the checklist is
13 produced originally by Getschow, and then it's followed.

14 Q And who produces the preservice inspection drawing?

15 A Getschow.

16 Q And what change then did the licensee commitment,
17 that you've identified as the supplemental response of January
18 24th, '86, what change did that make?

19 A Well, the ISI checklist they were using was not a
20 requirement that that had to be used. And I felt that was a
21 necessary requirement. That they had to follow what the
22 checklist was actually a procedure for making the drawing.

1 And so that response made that checklist a mandatory
2 requirement that it be used.

3 And additionally, the supplemental response did
4 state that examination crews -- Edison actually -- Edison
5 examination crews were and had been walking down the drawings
6 to determine that the drawings were accurate with regard to
7 identification and location of welds.

8 Q Of welds?

9 A Right. That was my basic concern was that all welds
10 were identified on the drawings.

11 Q Who does the walkdown?

12 A The walkdown referred to in this inspection report
13 was done by Commonwealth Edison.

14 Q All right. The walkdown was done from a drawing,
15 but the drawing was not required to be based on the checklist,
16 even though, in fact, it may have been based on the checklist?

17 A Yes, sir.

18 Q And therefore, there was no assurance that the
19 drawing actually included all welds. And therefore, there's
20 no assurance that the walkdown would have included all
21 required welds.

22 A No, basically, the reason I wanted to have a

1 checklist was to make sure, yes -- the first part of the
2 question was, yes, that all welds were included based on
3 producing the drawing. The walkdown should identify all the
4 welds, because you're looking for the welds. And if they're
5 not on the drawing, then that would be solely noted by the
6 walkdown crews.

7 But you don't go by the end -- you go by, you know,
8 each step should be right. So I wanted to make sure that
9 drawing was correct, even before you go to the walkdowns.
10 Then the walkdowns was just the added measure.

11 Q Okay. Well, the walkdown has to have some reference
12 as the reference source to compare the as-built condition to.
13 And that source is the drawing, right?

14 A Yes, sir.

15 Q And you wanted to assure that the drawing reflected
16 all welds that were specified by applicable requirements?

17 A Right.

18 Q So you'd have something that the walkdown was
19 checking against that would be accurate?

20 A Well, there always was a drawing. I mean, the
21 drawing was being made with the welds on it. I wanted to make
22 sure the drawing -- let's say, there were supposed to be 20

1 welds in the drawing. I wanted to make sure when they
2 produced the drawing that all 20 were there and not 19, as an
3 example.

4 It's not that there was never a drawing produced, or
5 there weren't welds there. I mean, the drawing was always
6 there and the welds were always there. But I wanted to be
7 absolutely sure from the drawing point of view that all 20
8 welds were there and not 19, before it even went to the
9 walkdown.

10 Q All right. Does the drawing specify not only the
11 existence of the weld, but the weld type and acceptance
12 criteria?

13 A No, this drawing was basically for the location of
14 the weld, and whether the weld was there, I mean. And then
15 the in-service inspection -- when you say type of weld, it
16 would identify that it was a six-inch pipe weld or four-inch
17 pipe weld, that type of thing. And from that, being a
18 knowledgeable inspector, you'd know if it was a socket weld or
19 a butt weld.

20 Q Right.

21 A But basically it would list the size of the pipe,
22 the pipe run, and where the weld was.

1 Q Okay. What's the purpose of that walkdown
2 inspection as it relates to welds?

3 A When you have your in-service inspection testing,
4 there's an interval when you go back and examine these welds.
5 And some welds may be non-destructively examined, some would
6 be visually looked at, depending on the weld, the system, the
7 importance to safety.

8 So you want to make sure you don't miss one of those
9 welds in the drawing, so when it comes every two years or six
10 years or whatever your interval is to inspect that weld, that
11 you don't miss it.

12 Q What's the purpose for looking at the weld after
13 in-service testing?

14 A For in-service testing?

15 Q After in-service testing.

16 A Well, what we call in-service inspection is after
17 the weld's been in service, after it's been, you know, in an
18 operating system. You look at a weld to make sure there's no
19 cracks in it. You know, stresses haven't caused any problems
20 with it. And you do that, as I say, the code, that Section 11
21 of the ASME code was intervals for certain types of welds.
22 Like if they're on the -- you know --

1 Q Right. Is this for a preoperational walkdown or an
2 in-service walkdown?

3 A Actually they do, I believe, in-service inspections
4 preoperational and after the plant's operational.

5 Q So this walkdown, in part, was to identify any
6 possible weld defects after preoperational testing, as well as
7 later in the plant's life at an in-service inspection?

8 A Correct.

9 Q For example, once the system was -- once the line,
10 for example, was pressurized and had fluids flowing through it
11 at operational temperatures and pressures, a preoperational
12 in-service walkdown would examine welds on that line for
13 potential defects?

14 A Right, but I -- let me clarify that. When you do
15 your in-service inspection requirements, many times these
16 welds are inspected at shutdown. In other words, your concern
17 is, there may not be pressure on that line at that time.

18 Q At the time of the in-service inspection?

19 A Right.

20 Q Right.

21 A But if there was any adverse effects on the weld,
22 from it being in the operating condition, you'd be able to see

1 that.

2 Q Right. And my point is -- the point of the question
3 is, some of that in-service inspection is done after
4 preoperational testing but before actual critical operation of
5 the plant?

6 A I believe so, but I'd have to get into Section 11.
7 That's not my area of expertise. We have people that just
8 handle Section 11 work.

9 Q What's Section 11?

10 A Section 11 is in-service inspection. Section 11 of
11 the ASME code. And I'd have to review the time frames, so I
12 couldn't give you a real authoritative answer on that.

13 Q Well, do you know whether there is a walkdown of
14 these piping systems for weld defects before actual
15 criticality, but after a system has been pressurized and
16 operated at operating temperatures?

17 A My concern here was not the actual in-service
18 inspection. I mean, I wasn't addressing for the in-service
19 inspection walkdown, I was addressing that all the welds were
20 identified on the drawings, so at a later time when they did
21 an in-service inspection, they didn't miss any.

22 You know, you're getting into particular questions

1 on the actual in-service inspection, and again, I don't have
2 the expertise to answer that.

3 Q All right.

4 A I know where to go to it, and I could get it
5 quickly, but I don't -- you know, I can't quote it to you.

6 Q Page 6, last paragraph of your finding. "The
7 licensee will continue to review the drawings for conformance
8 with preservice conditions, including the fact that
9 examination crews walked down the drawings while performing
10 the baseline volumetric in-service examinations."

11 I don't understand exactly, Mr. Schulz, the point of
12 that statement. Why do you link continuing to review the
13 drawings with the fact of examination?

14 A What they're saying is, there is an inspection
15 that's done prior to criticality on the welds. Okay, they're
16 saying this examination that's done prior to criticality will
17 identify this walkdown, if any of the drawings possibly could
18 have missed a weld. So that's the point of that.

19 In other words, if they did happen to miss one,
20 we'll pick it up on this. And that was what I would call the
21 added assurance.

22 But back to the original finding. From this point

1 on I didn't want any -- you know, to me that's just the added
2 point. I wanted that -- the purpose of the violation is, I
3 wanted the actual ISI drawing to be correct before it went out
4 there.

5 Q Right. Your violation addressed the historic
6 drawing that a walkdown worked from. And your so-called added
7 assurance was that if any future discrepancies or changes were
8 identified in a walkdown, they would be noted on the drawing?

9 A Yes, sir.

10 Q All right. Now what was the nature of the
11 checklist?

12 A The checklist basically -- see, when you make a
13 drawing, you produce a drawing, there are welds that Getschow
14 makes, so there's documents -- you know, your as-built
15 drawings, you look for those. There are also drawings that
16 the fabricator makes, so you look for -- make sure those welds
17 are picked out. And that would be on the checklist, look for
18 fabricator code data reports. There are also repair and
19 rework orders, field change orders that might change a weld or
20 add a weld.

21 So an engineer that's producing an ISI drawing
22 should look at the original as-built, should look at the

1 fabricator's code data reports, which list the welds, should
2 look at any rework, repair drawings that might change a weld.
3 And by combining all these, you come up with an accurate
4 as-built -- actual, what I would call final as-built drawing,
5 as you might -- actually as it occurs in the field.

6 This checklist states, you've got to go to the code
7 data reports, you've got to go to the repair rework orders,
8 you've got to go to the Getschow-produced welds. And then,
9 from these documents, you'll make your drawing.

10 Now their point always was that they were doing
11 that, and they were following the checklist, it just wasn't a
12 requirement that they follow the checklist.

13 Q Okay. The checklist then specified the sources from
14 which a drawing was produced to include all welds that the
15 as-built system would include?

16 A Yes, sir.

17 Q To the extent that a checklist was not followed, a
18 weld that was to be included in the as-built condition, or was
19 included in the as-built condition might not accurately be
20 reflected on the isometric drawing?

21 A Well, that was the -- that's what would be the
22 worst-case scenario, yes.

1 Q Mr. Schulz, have you done any more inspection work
2 on the Comstock Level I issue since November 1st when you had
3 your first deposition session?

4 A No, I have not.

5 Q That issue is raised in, among other places,
6 contention subitem 3(c). Have you had any involvement in the
7 NRC's Staff response to summary disposition motions by
8 Commonwealth Edison on that issue?

9 A I've not been involved in the summary disposition on
10 that issue, no.

11 Q Do you know who is doing work for the Staff on the
12 Level I, Comstock Level I issue?

13 A I would guess it'd be Mr. Gardner, but I couldn't
14 say that for a fact.

15 MR. BERRY: Is this 3(c)?

16 MR. GUILD: Yes.

17 MR. BERRY: I believe that would be Mr. Jacobsen.

18 BY MR. GUILD:

19 Q Mr. Schulz, you identified an item that's item 6(f)
20 of a contention in inspection report -- it's item 84-21-03.
21 It's a Part 21 violation on piping minimum wall?

22 A Right. I identified that.

1 Q And you -- did you close that item?

2 A Yes, I did.

3 Q And do you know which inspection report you closed
4 that in?

5 A I don't, but Mr. Berry, I believe, does.

6 MR. BERRY: 6(f)?

7 MR. GUILD: Yes.

8 MR. BERRY: It should be 85-07.

9 BY MR. GUILD:

10 Q Did you determine the cause of that item of
11 noncompliance, Mr. Schulz?

12 A I heard it, let me just think about it for a
13 minute. I believe it was a misinterpretation, in my opinion,
14 by the piping contractor on what was reportable to Edison and
15 what wasn't. I think they believed the issue was adequately
16 resolved.

17 And I think they looked at it more from their point
18 of view. In other words, the Braidwood site rather than
19 potential -- you know, have maybe potential generic
20 implications to other sites. And that's what a 21 basically
21 is. The purpose is not just for that site, to see if it could
22 affect other sites.

1 And I think they looked at it just from the
2 Braidwood perspective and the safety concern there, because
3 they had removed a section of pipe that was below minimum wall
4 and scrapped it. So there was no safety concern for
5 Braidwood. So to me, that was the root cause. That would
6 be my --

7 Q All right. How did you come to identify that item
8 of noncompliance?

9 A Let's say an anonymous tip.

10 Q And what did the anonymous tip say to you?

11 A Basically, that this -- the person felt it should
12 have been a Part 21 and it wasn't, and if I had the
13 opportunity, to look into it.

14 Q And the person who provided you the tip gave you
15 reason to believe they had knowledge of the existence of the
16 minimum wall violation?

17 A Well, the person that gave me the tip felt -- I
18 mean, he gave me the tip from a safety concern, and he felt it
19 was a Part 21, where the company had analyzed it and felt it
20 wasn't. So it was a disagreement that he had with the
21 company, and he had a safety concern, so he just asked me to
22 look into it.

1 Q Was that documented as an allegation?

2 A I don't believe so. I guess, you know, there's a
3 fine line what's a tip and what's an allegation, if you know
4 what I mean.

5 Q Sure. Do you know whether or not your source
6 brought the concern to the attention of Getschow management or
7 licensee management?

8 A I don't know.

9 Q Did anything that Edison or Getschow said in
10 response to the item of noncompliance lead you to believe that
11 they were aware that someone had disputed or expressed concern
12 about the reportability?

13 A No.

14 Q Did you ask them whether anyone had ever expressed
15 concern about the reportability of the item?

16 A No.

17 Q How was the minimum wall thickness requirement
18 deficiency identified?

19 A Getschow identified it.

20 Q How did they do that?

21 A I believe it was -- I'd have to look, but I believe
22 it was a nonconformance report. And then they cut off the two

1 feet that was below minimum wall and scrapped it.

2 Q Do you know how physically they came to identify the
3 minimum wall violation?

4 A I think it was during receipt inspection, but I'm
5 not positive.

6 Q Okay. The piping was -- the deficiency in wall
7 thickness was found before the pipe was installed?

8 A Yes, sir. To my recollection it was found during
9 receipt inspection.

10 Q What was the cause of the minimum wall violation?
11 Was it a manufacturing defect?

12 A I don't know.

13 Q Did you examine the pipe yourself?

14 A No, I did not. The pipe -- I mean, I was involved
15 in it long after it had been scrapped and discarded.

16 Q As far as you know it was scrapped?

17 A Yes.

18 Q It's not available, not saved?

19 A [Shaking head negatively.]

20 Q You're aware that there's pipe with minimum wall
21 problems that's asserted to have been caused by the storage
22 condition of piping, been corroded by exposure to the

1 elements?

2 A I'm aware that some of the corroded pipe was below
3 the manufacturer's tolerances.

4 Q Right. This particular pipe -- what I'm trying to
5 understand is, was it a minimum wall specification deficiency
6 that occurred in storage, or was it a fabrication condition?

7 A My understanding of this, it was a manufacturer's
8 deficiency.

9 Q Do you know who the manufacturer was?

10 A I don't remember. It'd be documented in the
11 Getschow document, I'm sure.

12 Q Do you know whether there's ever been any evaluation
13 of whether the -- if it is -- assume it is a manufacturing
14 deficiency, whether the existence of the manufacturing
15 deficiency has any generic implication for the existence of
16 deficiencies in other pipe produced by the same manufacturer?

17 A I don't know, because the licensee themselves made
18 the determination that it wasn't a Part 21. But they notified
19 the supplier, so the next -- after they notified the supplier,
20 the next step in the chain would be the supplier to notify the
21 manufacturer. Then the manufacturer would have to determine
22 if that was just an isolated case or not.

1 My involvement -- I mean, I don't carry an item back
2 to the manufacturer, you know. It's outside my scope.

3 Q Right. Do you know whether or not Phillips Getschow
4 or Edison notified the supplier?

5 A Yes, they did.

6 Q How do you know that?

7 A I reviewed documentation on that, I believe. I
8 can't tell you for sure, I don't remember. But I remember
9 they notified the supplier, and my inspection report says they
10 notified the supplier. Whether it was a phone call or a
11 letter, I don't remember.

12 Q Do you believe that there was documentation of that
13 notification on the NCR or associated documents?

14 A I don't know.

15 Q But your information about notification of supplier
16 was based on a licensee-produced document reflecting such
17 notification?

18 A Yes. I don't -- to be honest with you, I don't
19 remember whether it was a phone call they made directly, and
20 who made it. I believe I remember talking to the individual
21 that made it, and whether there was a document also. I just
22 felt very assured in my mind that the supplier had been

1 notified.

2 Q Well, you don't recall having seen a letter that
3 went to the supplier, for example?

4 A I don't remember, to be honest with you.

5 Q Are you aware of whether the supplier made a Part 21
6 evaluation?

7 A No, I am not.

8 Q And are you aware of whether the supplier informed
9 the manufacturer of the existence of a minimum wall
10 specification defect?

11 A No. My involvement ended when Edison carried out
12 its responsibilities and notified the supplier.

13 Q Okay.

14 A Any supplier deficiencies or manufacturer
15 deficiencies are handled by our vendor programs branch, so
16 that was --

17 Q Have you informed the vendor programs branch of the
18 existence of a minimum wall problem?

19 A I haven't. If my management did, I don't know. I'm
20 not . you know, I'm responsible for the Braidwood site, and I
21 documented the existence of that condition in the report.

22 Q Is there a specific channel that you're aware of

1 where the left hand of the NRC that handles vendor compliance
2 would not if you'd identified a deficiency in a
3 vendor-supplied piece of material, such as this pipe?

4 A Normally, the region would notify the vendor
5 programs branch if there was a finding they want followed up
6 on.

7 Q Would you know of that if they had?

8 A Not necessarily.

9 Q You don't know in this case?

10 A I don't know. Two foot of a 10-foot pipe -- and
11 only two foot -- would not be a 21. Now if there was a lot of
12 pipe -- and that was the only piece that was received. Now if
13 there was 2,000 feet, then my involvement in that would take
14 on a different scale.

15 Q Right. Well, how much does it take violating a
16 minimum wall requirement in a piece of -- in a piping system
17 to cause a deficiency in the piping system, Mr. Schulz?

18 A If that --

19 MR. GALLO: Objection. He's not competent to answer
20 that question. He testified earlier that he was not an expert
21 in the area in ASME and piping systems, ovality, and minimum
22 wall thickness.

1 BY MR. GUILD:

2 Q Try to answer the question anyway?

3 A Well, I would say, any minimum wall problem in a
4 pipe, whether it's two foot or 20 foot would have the
5 potential to have impact on the system. I mean, that's
6 basic. You don't have to be an expert to answer that.

7 Q Six inches, for that matter?

8 A Six inches. You can't have a pipe failure at any
9 point in a critical safety system.

10 Q Pipe is only as strong as its weakest link -- chain
11 is only as its weakest --

12 A I don't want to get into that, but I would -- in my
13 opinion, and I don't consider it to be expert, if that two
14 foot section of pipe would have been installed, it would have
15 to be analyzed for its design significance, just like it would
16 in any plant.

17 Q All right. And what prevented that pipe from being
18 installed was the minimum wall defect was identified at some
19 point before installation, receipt inspection?

20 A Yes, sir.

21 Q And if a two-foot section of pipe from the same
22 manufacturer at another site -- or for that matter, at

1 Braidwood -- failed to be identified because of a failure of
2 the receipt inspection, or some other preinstallation
3 inspection, a pipe with minimum wall deficiencies might be
4 installed?

5 A Yes, but let me -- before I answer that let me
6 qualify. The amount that this pipe was under, the
7 manufacturer's minimum wall, I'd say it was extremely unlikely
8 that it was below design minimum wall, and would not have had
9 any effect anyway, from the amount that this was under, it
10 was so minor under. And from all the calculations that I've
11 seen, I would say, this pipe in itself had no design
12 significance on the Braidwood plant or any other plant.

13 Q Well, you don't talk about any of those evaluations
14 in your inspection report that I see?

15 A I think it gives the amount in one of the
16 inspections that it was under. In other words, I think S&L
17 has shown, you know, a 15 to 20 percent factor, and this was
18 maybe 12.70. You know, it could go to 12 and-a-half.

19 Q What are the numbers you're using? Percentage?

20 A Well, minimum wall can be 12 and-a-half percent
21 under nominal from a manufacturing tolerance. And it should
22 be shipped within that criteria.

1 But now when it gets on site, normally there's a
2 design margin built in by the design engineer that a pipe may
3 go to 20 or 25 percent below the nominal, instead of the 12
4 and-a-half percent. And this was so close to the 12
5 and-a-half percent, I would -- from what I've seen in the
6 industry at other plants, plus the calculations at Braidwood
7 -- I would be willing to say that I would probably go to a 99
8 percent probability that that pipe would not have an effect,
9 even if it was installed as it was.

10 Q This was a -- you believe it was in the order of 12
11 and-a-half percent?

12 A Well, 12 and-a-half percent is a manufacturer's
13 tolerance. And I believe it was within, maybe -- here, we've
14 got it right here. It's .629, and it was .620. So it's
15 9/1000ths of an inch under minimum wall, which I would be
16 willing to say that S&L probably could go at least down to a
17 half inch on that, just from what I've seen in the industry.

18 Q What's the nominal size of the pipe?

19 A It's eight-inch Schedule 120.

20 Q And what's the wall thickness on an eight-inch
21 Schedule 120?

22 A .629.

1 Q That's the nominal wall?

2 A No, the nominal is 7/8ths. What's 7/8ths come out
3 to?

4 Q I assume that can be calculated. .629 is the
5 design, or is the manufacturer's tolerance?

6 A Manufacturer's tolerance has to be .629 or above.

7 Q That reflects the 12 and-a-half percent below the
8 nominal, which is 7/8ths?

9 A Right.

10 Q Okay. And the pipe in question, the two-foot
11 section was .620?

12 A Right. The violation was that, not that this was a
13 21, but that they didn't report it to Edison to determine if
14 it was a 21.

15 Q Right. And what was their explanation for not
16 reporting it?

17 A Well, again, I think they looked at it from the
18 viewpoint that there's no safety concern for Braidwood, rather
19 than -- what a 21 is is basically for the industry in general,
20 you know.

21 Q And no safety significance for Braidwood because
22 they assumed that it would meet design requirements?

1 A No, there was no safety significance for Braidwood
2 because they had cut out the piece and scrapped. So they
3 didn't even have to -- they didn't even get to the point for
4 the design analysis.

5 Q I see.

6 MR. BERRY: I'm going to ask you, just to clarify
7 the record, a number of times in Mr. Schulz's last answer he
8 stated that, "it says here, and it says here, and it says
9 here." Just so the record is clear, he was referring to
10 inspection report 84-21/20, page 6.

11 MR. GUILD: Okay, thanks.

12 BY MR. GUILD:

13 Q You've closed an item which is identified as item
14 6(g) of the contention, Mr. Schulz. And it's item
15 noncompliance 84-17-01, the use by Edison of an unapproved
16 bidder that did not have an approved QA program. That was
17 the company that cleaned -- that pickled the corroded pipe,
18 correct?

19 A Right. I don't know if I'd call it pickled. It was
20 a cleaning process.

21 Q What's pickling? And why wouldn't you call it
22 pickling?

1 A I think pickling has to do with a certain chemical
2 process and certain degrees that are called out by Sargent &
3 Lundy how it's supposed to be pickled. And I don't think they
4 followed that pickling process that the Sargent & Lundy spec
5 called out, so I don't know if I want to call it pickling.

6 Q What is pickling? What does one do when one pickles
7 a pipe?

8 A I can't answer the exact -- I'd have to review the
9 --

10 Q Okay. What's it for? Why would you do that?

11 A Pickling the pipe, from what I understand of it, is
12 to clean it and also to coat it, to prevent it from
13 corroding. To me, from my understanding of it -- and I don't
14 -- again, I'm not an expert on pickling -- but it would be to
15 clean the pipe and also protect it from further corrosion.

16 Q And was this pipe -- was there a protective coating
17 added to this pipe? The pipe in question in the item of
18 noncompliance?

19 A Well, the pipe as comes from the supplier, that pipe
20 was not required to be pickled. I think S&L had a requirement
21 for pickling their fabricators pipe.

22 In other words, the main large bore piping that came

1 from Southwest Fabricators, if I remember, that required
2 pickling. Your normal pipe that came from a supplier, I don't
3 think requires that same pickling process. So this pipe was
4 manufacturer's pipe.

5 Q It was not pickled prior to receipt?

6 A Not to my knowledge, no.

7 Q Now was it pickled when it was sent to the vendor?

8 A It underwent a chemical cleaning process. I don't
9 like to use the word pickled because I don't know the exact
10 definition. I would say it was a chemical cleaning process.

11 Q Was there any anti-corrosive coating added to the
12 pipe that was sent out to be cleaned?

13 A I don't know that.

14 Q All right. How did Edison make the determination
15 that the cleaning of the corroded pipe was not a
16 safety-related procedure?

17 A I think you should ask Edison that. You know, I
18 read their statements on how they felt, but I think that's an
19 Edison --

20 Q What did you conclude? Did you review those
21 statements?

22 A Yes, I did.

1 Q And what did you conclude?

2 A Edison felt that it was a normal commercial
3 practice. Because it was a standard commercial practice, it
4 didn't require to be a safety-related vendor.

5 Q Normal practice to clean corroded piping?

6 A I believe they felt that was standard practice that
7 the commercial industry did, and therefore, it wasn't a
8 safety-related service. That was -- now, that's their --
9 that's what I read out of their interpretation. But I think
10 it would better to ask them.

11 Q Well, do you agree with that view?

12 A No.

13 Q What's your position on that subject?

14 A Well, that's the reason we wrote the violation.
15 Basically, it's a safety -- it's a service performed on a
16 safety-related pipe. It's a service performed on a
17 safety-related pipe, and it's a chemical cleaning process.
18 It was definitely a safety -- should have been a
19 safety-related vendor, and that's why the violation was
20 issued. If I didn't agree with that, I wouldn't have issued
21 the violation.

22 Q And do you know who at Edison made the determination

1 that it was a nonsafety-related process?

2 A No, I don't.

3 Q Did you look into that question?

4 A No, I did not.

5 Q Why not?

6 A My concern was that it didn't happen in the future,
7 and that that problem was corrected. I wasn't concerned with
8 who made the decision, because I think it was a verbal
9 decision. I didn't see anything written on it. And
10 conjecture of who made the final decision didn't have a safety
11 significance.

12 What had a safety significance was, is this problem
13 corrected and would it happen in the future?

14 Q Well, you also had to determine what the
15 significance of the problem was, correct?

16 A I had to determine what the significance of it was
17 in relation to that pipe, yes.

18 Q Well, you had to determine what the significance of
19 it was in relation to the -- in terms of the QA program at the
20 site, didn't you?

21 A My main concern was that pipe and whether it would
22 meet its intended safety function.

1 Q Well, did you review the root cause of the
2 deficiency to determine whether there were generic
3 implications of the deficiency for the licensee's QA program?

4 A We had reviewed the procurement program before, both
5 myself and Mr. Kropp, and this was the only purchase order we
6 had found that did that. So basically, I was concerned with
7 this problem.

8 Q With regard to this problem, did you review it for
9 generic implications for the licensee's QA program?

10 A I did not feel there were generic problems in this.

11 Q So you did review it for generic significance?

12 A Specifically, I can just say I was concerned with
13 this problem. I didn't, I guess, have a gut feeling that it
14 was a generic issue, that this was done a lot. I mean, we're
15 talking about a great deal of pipe that was sent out.

16 So my concern was with this large quantity of pipe.
17 And I didn't have a gut feeling that this was something they
18 did every day, sending out thousands of feet of pipe to be
19 cleaned. That was just --

20 Q Well, it was an important decision. It involved a
21 lot of pipe that ultimately was going to be installed in
22 safety systems in the plant, correct?

1 A Yes, sir.

2 Q All right. And somebody at Edison who was supposed
3 to be operating an acceptable quality assurance program made a
4 decision that was wrong. And that was, to send it out to an
5 unapproved vendor for a process that had significance for the
6 safety of that material, correct?

7 A Had potential significance.

8 Q Right.

9 A It's still being analyzed whether it had any
10 detrimental effect or not, you know. Yes, it was -- I mean,
11 that's why we cited them. It was wrong.

12 Q But my question is, in terms of understanding why
13 the problem happened to be able to evaluate its significance
14 and its implication for the program, did you find out who made
15 the decision and how the decision was made to erroneously
16 contract out for the pipe?

17 A No, that wasn't my concern. Again, that's as
18 honestly as I can tell you.

19 Q Fine.

20 [Pause.]

21 Q Did the Howard Company, the vendor that performed
22 the pipe cleaning have an acceptable QA program?

1 A There was not -- the vendor had never been looked at
2 at Edison for an acceptable QA program. It was a
3 nonsafety-related vendor.

4 Q All right. So they hadn't been approved?

5 A They had not been approved, no.

6 Q Okay. Did they have an acceptable QA program,
7 whether approved or not?

8 A I did not look into their program.

9 Q Did you determine whether or not they had adequate
10 controls on the chemical cleaning process that was employed?

11 A I wasn't there when they cleaned the pipe. There
12 was not independent quality control checks on the cleaning of
13 the pipe. There was a construction engineer check on the
14 cleaning of the pipe.

15 Q Construction engineer for Howard Company?

16 A No, from Edison.

17 Q From Edison. Was there present while the pipe was
18 cleaned?

19 A Not all of the pipe, but I think he examined some of
20 the pipe being cleaned. But you'd have to ask him. That was
21 my understanding in the issue.

22 Q Do you know whether or not the cleaning process had

1 any detrimental effect on the pipe?

2 A That item was assigned to Mr. Muffett, and he's
3 looking into that. As you remember, there was two violations
4 in this report, this one on the unapproved vendor, and the
5 other one actually on the control of the pipe.

6 So although this item was closed by me in this
7 report for placing it with an unapproved vendor, the item that
8 had the impact on whether the pipe was acceptable or wasn't
9 acceptable, and what effect the cleaning process had, was
10 still remaining open. I was not closing that aspect of the
11 item.

12 Q So in terms of whether the cleaning process employed
13 by the unapproved vendor had a deleterious effect on the pipe,
14 you reached no conclusion on that subject?

15 A No, I have not.

16 Q And that's Mr. Muffett's --

17 A Yes, sir. And that was the main issue, as far as I
18 was concerned, you know.

19 Q Did you review the cleaning process that was
20 actually employed by the vendor?

21 A The cleaning process as specified in the purchase
22 order. As I said, I wasn't there when they cleaned it.

1 Q Right.

2 A The stipulations on the procurement document -- or,
3 I don't even know if it was on the procurement document or on
4 a procedure on how it was to be done -- I reviewed. In other
5 words, the temperatures and so on.

6 Q You don't know whether they followed the
7 specifications on the procurement document, or whatever Edison
8 said they wanted done?

9 A I couldn't tell you that, because I didn't watch
10 them do it.

11 Q Did you find any documentation of what they did?

12 A No.

13 Q Did you look for documentation?

14 A There was no documentation that I remember on how
15 the job was performed.

16 Q Was it a Lundy specification, Sargent & Lundy, or
17 Edison -- the purchase order to Howard?

18 A The purchase order was issued by Commonwealth
19 Edison.

20 Q Okay. You supported summary disposition of this
21 item by affidavit, 6(g)?

22 A I believe so.

1 Q Is there anything material in your affidavit, or in
2 the statement that you are giving in support of summary
3 disposition that I haven't asked you about?

4 A Summary disposition basically reports -- follows
5 what the report says. I closed it based on adequate
6 provisions were taken to see that this problem didn't happen
7 again. And that was the basis for the closure.

8 Q 6(i) is item 84-09-05. It's failure to install the
9 correct whip restraint plates. And you closed that item?

10 A Yes, sir.

11 Q Now Edison's schedule reflects that Mr. McGregor
12 identified that item. Is that correct?

13 A No.

14 Q Did you identify it?

15 A Yes, sir.

16 Q How was that item of noncompliance caused? What
17 happened -- what caused that problem?

18 A Basically, if I remember, there was substitutions
19 being made of material that weren't called out by the drawings
20 or specifications without engineering approval ahead of time.

21 Q This was by Phillips Getschow people?

22 A Yes.

1 Q Of components that were supplied by Chicago Bridge &
2 Iron -- on components that were supplied by Chicago Bridge &
3 Iron?

4 A But I don't think all the plate was supplied by -- I
5 mean, a substitute plate wasn't all supplied by Chicago Bridge
6 & Iron.

7 Q Right. But they were -- these were --

8 A Attached or welded to Chicago Bridge & Iron whip
9 restraints.

10 Q And the materials for such attachments were
11 specified by Chicago Bridge & Iron?

12 A I don't know that, to be honest with you. I
13 remember what was required, and it wasn't what was required.
14 Whether that was a Chicago Bridge & Iron document or a
15 Getschow document, I don't remember.

16 Q All right. Or a Sargent & Lundy document?

17 A Or a Sargent & Lundy document. I just -- I do
18 remember that it wasn't the correct material.

19 Q And what was the cause of the use of the incorrect
20 material?

21 A Well, basically they were making -- maybe -- they
22 were making substitutions of material that wasn't a called out

1 specification, wasn't a required material spec.

2 Q That's what happened. But why did that happen?

3 A I would just guess that it was because the regular
4 material was not available, or it was but this was more easily
5 accessible. I don't know.

6 MR. BERRY: Mr. Schulz, you don't have to guess.

7 THE WITNESS: I don't know.

8 BY MR. GUILD:

9 Q Okay. Did you attempt to identify the cause of the
10 improper substitution?

11 A Well, the cause of it, they were making -- to me the
12 cause was they were making substitutions that weren't called
13 for. And that was -- I mean, the cause would be craft
14 knowledge and craft training.

15 I mean, if someone puts something in that he isn't
16 supposed to put in, that evidently is a lack of knowledge of
17 what he can substitute.

18 Q Well, how do you know that he wasn't fully aware
19 that he wasn't supposed to make the substitution and he did it
20 anyway?

21 A People don't -- I don't -- people don't deliberately
22 do something that they know is wrong.

1 Q Did you evaluate -- make a review to reach that
2 conclusion in this instance?

3 A No.

4 Q That's an assumption on your part?

5 A The material was wrong. You know, I didn't get into
6 that aspect. I guess, I don't assume that somebody did
7 something deliberately.

8 Q But you assume otherwise. You assume they didn't do
9 it deliberately?

10 A It's a mistake. Mistakes -- I mean, it's a huge
11 power plant. People make mistakes. If every mistake you
12 found you had to question each guy to see if he did it
13 deliberately, I mean, that'd be an impossible task.

14 Q Well, did you do it in this case?

15 A No.

16 Q And you don't know whether it was deliberate or
17 accidental?

18 A I can't imagine anybody doing it deliberately,
19 putting in the wrong material.

20 Q Well, you hypothesized the possibility that the
21 wrong material was used because it was easier to pick up a
22 piece that was accessible instead of one that was specified.

1 A The bottom line again, if every violation, every
2 unresolved item, every open item we had we found it was -- we
3 inspected it like an allegation to find out if it was
4 deliberate or not, we'd be -- we wouldn't get our normal
5 inspection activities done.

6 There's only so much time and you prioritize. And
7 unless you have a gut feeling that it's deliberate and there's
8 some reason for it, no, I wouldn't look into that. As I say,
9 you have to prioritize, go with a lot of gut feelings and your
10 nose, because we've got a lot of ground to cover.

11 Q Well, you hypothesized an explanation, Mr. Schulz,
12 that -- I didn't hypothesize it. I'm interested in why it
13 happened. And you hypothesized that one explanation is, that
14 was more convenient to use the improper material.

15 Now let's assume that that hypothesis is correct.
16 Might it also not be possible that that individual knows what
17 the required material is. Despite the fact he knows it, he
18 intentionally goes and gets the wrong material because it's
19 easier to get.

20 A I would say, from my experience, I would say that's
21 unlikely.

22 Q Well, why did you hypothesize that?

1 A What?

2 Q That --

3 A That he got -- that it just wasn't available.

4 Q Right.

5 A And maybe the -- my hypothesis would be, he felt
6 that this was as good enough -- as good a material as the
7 other material. I mean, steel plate is steel plate. And from
8 his point of view -- maybe from a fitter's point of view,
9 which is not a strong engineering point of view, this plate
10 would serve the same purpose.

11 And I wouldn't consider that deliberate. And I
12 haven't found that in all my inspections of the case and
13 working with the fitters out there, that anything was done
14 deliberately. And I talked to them continually.

15 Q So you advanced this hypothesis, but you don't
16 believe that's what happened?

17 A No.

18 MR. BERRY: Objection.

19 THE WITNESS: Let me explain. I advanced the
20 hypothesis that maybe this was easier to get. But he also
21 felt that this material was just as good. He didn't feel
22 there was anything wrong with taking this material or the

1 other material.

2 My hypothesis was not that he did it deliberately
3 knowing that it was incorrect material.

4 MR. BERRY: I'm going to object. All this is
5 collateral, because it's the product of asking the witness to
6 speculate in the first instance as to why something happened.
7 The witness indicated he didn't know and then you asked him to
8 hypothesize, and he gave you a possible reason out of a number
9 of reasons, hundreds of reasons.

10 And all of what we're talking about now are -- sure,
11 they're possible, probable, plausible.

12 MR. GUILD: My difficulty, counsel -- to cut this
13 short -- is that you've got a man here who's going to turn
14 into a pumpkin tomorrow. Now I don't mean that literally
15 obviously. You know, he's not going to be available as a
16 witness, and he's submitting affidavits in support of summary
17 disposition that I don't have.

18 Now, I'd like to have those affidavits right now,
19 and I'd like to have them in front of me, so that I don't have
20 to speculate about what Mr. Schulz might be saying a week from
21 now.

22 But frankly, if you're going to be as particular

1 about what is narrowly within your view of the scope of proper
2 examination of the witness, then perhaps I ought to just not
3 be so daggone accommodating and say, let's have the damn
4 affidavit in front of us so that we can see what he's going to
5 see. So I don't have to try to accommodate Mr. Schulz and get
6 him done today.

7 MR. BERRY: Mr. Guild, I think the record will
8 reflect that the counsel for the Staff has been more than
9 accommodating, has not objected to a number of objectionable
10 questions, and for precisely that reason.

11 Now the second thing about this, these affidavits,
12 this summary disposition response would not be do -- the
13 Staff's not scheduled, required to file it for another 10
14 days. Now we could -- it could sit on its rights, wait until
15 that time and produce the affidavits to you. But in that
16 time, this witness may well be gone. And at that point, that
17 may create some difficulties for all -- for you.

18 And as an attempt to alleviate that problem, we're
19 scheduling this deposition today.

20 MR. GUILD: Well, you never gave me --

21 MR. BERRY: I indicated to you --

22 MR. GUILD: I've had no prior notice whatsoever,

1 Mr. Berry, that you were going to submit affidavits from
2 Mr. Schulz in support of summary disposition. So I learned
3 that this morning that I have to defend against unknown future
4 sworn testimony by a witness who no longer is going to be in
5 the employ of the agency.

6 I'm doing the best I can to try to address these
7 subjects, but I really think that it's not the Staff's
8 position to be objecting about my efforts to try to cover this
9 man's tail and get him done with today.

10 MR. BERRY: I'm not objecting. All I'm doing is
11 pointing out to you that, one of the problems in this line of
12 questioning, you asked the witness why something happened, and
13 he says he doesn't know. And then you ask him to speculate
14 possible reasons. This is what you're going to get.

15 You know, you ask a witness what he knows, and he's
16 answered to the best of his ability.

17 MR. GUILD: All right. Well, let's just have the
18 record be clear. I'm not waiving any right that I have to
19 examine Mr. Schulz with respect to affidavits that I now hear
20 he's going to submit in support of summary disposition.

21 The Staff intends to rely on a witness in support of
22 summarily disposing of a contention who no longer is in the

1 employ of the agency, then I think that it's the agency's
2 responsibility to, you know, be as cooperative as they can.
3 Now, I don't hear you being that --

4 MR. GALLO: Wait a minute. I'd like to see what the
5 basis for that objection is. I mean, the Board will rule on
6 the motion on the basis of the papers submitted. Whether or
7 not the witness dies the day after the motion is filed by the
8 Staff, or goes off to another job is irrelevant.

9 MR. GUILD: It's not irrelevant at all, Mr. Gallo.

10 MR. GALLO: You don't have a shot at Mr. Schulz
11 again after those affidavits are filed unless the motion is
12 denied. And you have no right to see those affidavits ahead
13 of time.

14 MR. GUILD: No, sir, that's not right at all.
15 That's not right at all. If the NRC Staff is going to be
16 supporting the company's position on summary disposition, I
17 most certainly do have a right to respond to any additional
18 evidence that the NRC Staff deems is useful in supporting its
19 position on summary disposition.

20 MR. GALLO: I don't think you'll find 2.749 to hold
21 to that effect, nor does the schedule hold to that effect.

22 MR. GUILD: Well, the schedule may not hold to that

1 effect, but if you desire the support of the Staff on this, I
2 submit to you that it's an issue incumbent upon Edison to also
3 try to cooperate in seeing that the intervenors have a fair
4 opportunity of their rights to respond.

5 MR. GALLO: Well, your notion of fair opportunity is
6 whatever suits your purpose. It has nothing to do with
7 compliance with either the regulations of the NRC, nor of the
8 -- the situation you're in is, if you're going to blame
9 anybody, blame the Board.

10 The Board gratuitously extended the schedule for
11 submitted answers to motions for summary disposition from
12 January 31 to February 18. No party to this proceeding
13 requested that extension, that was gratuitously granted. The
14 Board's your culprit, not Mr. Schulz or the Staff.

15 MR. BERRY: The intervenor has the motion for
16 summary disposition, which is the prime moving paper in this
17 respect. You have the witness here, you can ask the witness
18 how he feels or what his feelings are or what his views are in
19 respect to that motion.

20 He's indicated to you that he supports the motion
21 based on his inspection report. The inspection report that's
22 been in your possession for some time. And you have had

1 knowledge that this witness here was involved in this
2 particular aspect since November 1st.

3 MR. GUILD: I am frankly outraged that you presented
4 a witness today, you know, claiming that you're extending a
5 courtesy to the intervenor, and you've got five or six
6 affidavits from him that you're going to submit in support of
7 summary disposition. You know he's not going to be available
8 as a witness as of the first part of next week, and you didn't
9 even have the courtesy to tell me, by the way, Bob Schulz is
10 an affiant. He's going to be submitting summary disposition
11 affidavits on the following subjects.

12 And you call that a fair shot and a fair opportunity
13 at deposing the man? I came in this morning with a limited
14 series of questions to ask him on a limited series of
15 subjects, only to learn that I now have to anticipate a week
16 in advance trying to cover ground that you're not being the
17 least bit helpful on trying to help me cover, Mr. Berry.

18 THE WITNESS: My affidavit has --

19 MR. BERRY: Mr. Schulz.

20 THE WITNESS: Wait a minute.

21 MR. BERRY: Mr. Schulz.

22 MR. GALLO: Just let counsel argue this one.

1 MR. GUILD: We don't need to argue about it
2 anymore. I think you stated your position abundantly clearly,
3 Mr. Berry. And that is, you don't intend to facilitate my
4 position on this subject. And that seems to suit applicant
5 just fine.

6 It doesn't suit me, and I don't think it comports
7 with the rules.

8 MR. BERRY: Staff has stated its position, and this
9 feigned indignation is going to advance this proceeding any.
10 You have the witness available here. The witness is available
11 for your examination.

12 MR. GUILD: To talk about what?

13 MR. BERRY: Whatever you want to talk to him about,
14 to complete your examination.

15 If you would look on page 15 of his deposition
16 you'll see the items that Mr. Schulz indicated to you that he
17 was involved in. You could have compared that any time to the
18 motion for -- applicant's motion for summary disposition and
19 some idea of who the Staff -- the knowledgeable person on the
20 Staff would be to address these motions for summary
21 disposition.

22 You have no right to have his affidavit before you.

1 You weren't entitled to that, in any respect. All you're
2 entitled to know is what his position vis-a-vis that
3 subcontention. And you have that, and you've had that for
4 some time. And you can do it now.

5 No, the Staff is not going to produce his
6 affidavit. I'm not going to represent to you that we will.
7 We won't. You'll get it when it's due, just like we'll get
8 your response when it's due.

9 MR. GUILD: Mr. Berry, you're aware of the rules of
10 the Commission on summary disposition explicitly call for an
11 opportunity of a party defending summary disposition to have
12 an opportunity to respond to an answer that supports the
13 moving party.

14 In your case, I am learning today, for the first
15 time, that you intend to support the applicant's motion for
16 summary disposition in specific respects through the testimony
17 of Mr. Schulz. Now you've set this up in a fashion to deprive
18 me of a fair opportunity to depose Mr. Schulz on those
19 affidavits, unless I go out and subpoena him on them.

20 MR. BERRY: That is up to you.

21 MR. GUILD: It is up to me. It is up to me. But
22 it's a position that you full well knew that you were putting

1 me in when you informed me of Mr. Schulz's departure from the
2 agency and gave me no notice whatsoever that you intend to
3 rely on his affidavit testimony in summary disposition.

4 MR. GALLO: You know, your reading of the
5 Commission's regulations on summary disposition is just not
6 correct. It says that, "Any party to a proceeding may move
7 for summary disposition. Any other party may serve an answer
8 supporting or opposing within 20 days after the service --"

9 MR. GUILD: Read on, Mr. Gallo.

10 MR. GALLO: "-- of a motion."

11 MR. GUILD: Read on. And as to matters -- as to
12 answers that support but add new facts, then what about them,
13 sir?

14 We're just going to go through this entire process
15 again, if necessary, in order to address --

16 THE WITNESS: Can I make one comment?

17 MR. BERRY: No.

18 THE WITNESS: Wait, I want to make a comment.

19 MR. BERRY: No.

20 MR. GALLO: I don't see -- I'd be glad to give you
21 this regulation. Point it out to me. I don't see any
22 qualification you're talking about. There it is [indicating].

1 MR. GUILD: Let's go off the record a second.

2 [Discussion off the record.]

3 BY MR. GUILD:

4 Q Mr. Schulz, item 6(i), the material substitution on
5 the whip restraint plates. Was there a procedure at the time
6 that called for the proper material to be employed?

7 A There was a specification called out what the
8 material was supposed to be, yes. And I believe there also
9 was an alternative spec, where you could put one or the other
10 one in, in certain cases. But the plate installed was not
11 either the spec or the alternative spec.

12 Q So there was a procedure that governed the use of
13 the material. And that procedure was violated in the
14 substitution that was made?

15 A Well, basically, there's usually drawings that call
16 out the specification. I don't know if I'd call it a
17 procedure.

18 Q Procedure called for using the drawing. There was a
19 procedural requirement --

20 A Yes, to follow the drawing. The drawing would call
21 out the plate material. And then there may be what they call
22 an ECN, an engineering change notice, that said, if you can't

1 get this, you can use this, you know.

2 Q And you recall there being one in this case?

3 A Yes, I believe there was substitute material in some
4 of these specs.

5 Q So they had procedures. They were supposed to train
6 the craft people to employ those procedures, correct?

7 A Right.

8 Q And they're supposed to have a quality control
9 verification that procedures have been followed, the correct
10 material had been used?

11 A Yes.

12 Q Notwithstanding those procedures, the training and
13 the quality control verification, the improper material was
14 substituted?

15 A I'd have to go back and look at the item. I don't
16 know if there was actual physical check of the correct
17 material at the time of the violation.

18 Q There might not have been a quality control
19 verification?

20 A Right, yes.

21 Q Does your inspection report reflect one way or the
22 other if there was?

1 A Let me reread it.

2 Q All right.

3 A No, it says -- the report says, "The NRC inspector
4 identified the quality control inspectors had not been
5 involved in verifying and documenting acceptable substitute
6 material installations." Well, that doesn't really say they
7 were in the initial one. And evidently, they -- my guess
8 would be, no, because if they weren't doing substitute, they
9 weren't verifying the correct material.

10 Now the corrective action on this involved checking
11 all whip restraint material to see that it was correct.

12 Q All right. Did the corrective action involve
13 checking any other material substitution?

14 A Just on the whip restraint.

15 Q Why just the whip restraint?

16 A That was the only place where the problem was
17 identified.

18 Q Did they look anywhere else?

19 A Well, we had the MTV program already for all the
20 pipe.

21 Q Right. This wasn't pipe. Did they look anywhere
22 else besides pipe?

1 A No, we just were concerned with this contractor.

2 Q Phillips Getschow?

3 A Right.

4 Q All right. Was Phillips Getschow doing anything
5 else besides pipe and the plates in question?

6 A Pipe and whip restraints and pipe supports. That
7 would be about it.

8 Q How about pipe support, material substitutions?

9 A Pipe support predominantly uses a 36 plate, which is
10 a low grade structural steel plate, while whip restraint
11 material uses more of the pressure vessel plate. What we call
12 higher grade plate. So we didn't have the same concern with
13 pipe supports as we would in these pressure whip restraint
14 material.

15 Q So the answer is that material substitutions were
16 not checked, except in the whip restraints?

17 A Yes, sir. Now in pipe supports, most of them are by
18 catalogue numbers, and they're specific parts ordered right
19 from the catalogue. You know, like Grinnell furnishes
20 material.

21 Q Have you ever reviewed the material substitution in
22 pipe supports?

1 A Sure, I've reviewed a lot of pipe supports. Looked
2 at quite a bit on the job. I've never found a problem with
3 material being incorrectly substituted.

4 Q Those were views documented in this inspection
5 report?

6 A You bet. Not in this one, but in numerous
7 inspection reports. We looked at quite a few pipe supports.

8 Q Okay. Can you give me a reference?

9 A I would say -- no. I would say you could probably
10 look at every other inspection report and find some type of
11 reference to pipe supports where we did inspections.

12 Q Do you know whether Edison or Phillips Getschow has
13 ever identified improper material substitutions in pipe
14 supports?

15 A I don't believe. Not to my knowledge.

16 Q What did Phillips Getschow or Commonwealth Edison
17 identify as the root cause of the material substitution
18 deficiency?

19 A I don't remember.

20 Q Did you review it?

21 A I'd have to look at -- if you'd give me the report
22 that I closed it out, it might could give me some indication.

1 Q Do you know what report that is?

2 A No, but my lawyer does.

3 MR. BERRY: That's 6(f)?

4 MR. GUILD: I'm sorry.

5 MR. BERRY: What's the subcontention item?

6 MR. GUILD: 6(i).

7 MR. BERRY: 85-15.

8 [Witness reviewing document.]

9 THE WITNESS: I don't have it referenced in.

10 Normally, it would be training, but I don't have it referenced
11 in the report. It says an audit was performed and they
12 noticed six others that had to be dispositioned. And the
13 plate that was incorrect was replaced, per the field change
14 order. What the -- it's not in here.

15 BY MR. GUILD:

16 Q And what's the report where you closed the item out,
17 Mr. Schulz?

18 A 85-015 and 016.

19 Q Thank you. So would the absence of a notation in
20 your inspection report as to root cause indicate that you did
21 not review the root cause?

22 A What I remember about this issue besides what's in

1 here is that from that point on QC had to verify -- quality
2 control had to verify that the material was correct.

3 Q Right.

4 A And besides verifying that it was correct, I believe
5 there was some additional training too.

6 Q Cause is what I'm focusing on.

7 A My basic concern was that it wouldn't happen again,
8 and the past problem was corrected.

9 Q All right. But you don't recall identifying the
10 root cause?

11 A No, I do not.

12 Q Or reviewing Edison or Getschow's identification of
13 root cause?

14 A No, I guess, again my main concern was that the
15 problem was corrected and it wouldn't happen again.

16 Q Mr. Schulz, have you done any inspection activity on
17 the MTV program?

18 A In the beginning.

19 Q And that's documented in inspection reports?

20 A Yes, sir, it is. Two or three of them, I believe.

21 Q Have you done any since November 1st?

22 A No.

1 Q And who's doing the MTV-related inspection activity?

2 A Mr. Muffett.

3 MR. GALLO: While we're pausing here, I just want
4 the record to show that my indignation was not feigned, as
5 suggested by Mr. Berry earlier.

6 MR. BERRY: I wasn't suggesting that yours was.

7 MR. GALLO: It's an irrelevant aside, but I just
8 thought --

9 MR. GUILD: Let me just tell you, my indignation is
10 about as genuine as it gets. You're not going to see it any
11 more genuine than that, Mr. Berry. And you know, I don't need
12 to play.

13 BY MR. GUILD:

14 Q Mr. Schulz, have you done any more inspection
15 activity on the subject of harassment or intimidation
16 allegations by Comstock inspectors?

17 A Since my last deposition?

18 Q Yes.

19 A No.

20 Q Okay. Have you become aware of any concerns or
21 allegations of harassment or intimidation by Comstock
22 inspectors that are not documented in your inspection reports?

1 A No.

2 Q Any since your last deposition?

3 A No.

4 Q Any Comstock inspectors come to you with harassment
5 complaints since then?

6 A No, not that I can recall.

7 MR. GUILD: That's all I have for the time being.

8 Thanks.

9 [Discussion off the record.]

10 MR. GALLO: Let's see if I can't ask my questions
11 quickly.

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EXAMINATION BY COUNSEL FOR THE APPLICANT

BY MR. GALLO:

Q Mr. Schulz, would you turn to what has been marked as Schulz Deposition Exhibit Number 1. Do you have that in front of you?

A I don't have it in front of me. Oh, this from today? Yes, sir.

Q Now I believe your counsel indicated that your marks in the margins were yours; is that true?

A Yes, sir.

Q On the first page under item number two, I see some words inserted. I believe the words are data packs?

A Data packs, right. I'm just substituting that for installation documents.

Q I see. So that's just your editorial change; is that correct?

A Right.

Q What is the significance of the stars in the margins, if that's indeed what they are?

A Those are just items that I felt were very applicable to the issue. That I wanted to look at and review before I -- or if I closed the item.

1 Q As I recall your testimony, this item is still open
2 in your judgment; is that correct?

3 A Yes, sir.

4 Q In the middle of page one there's a circle around
5 pipe supports and pipe support data packs. Do you see that
6 item?

7 A Yes.

8 Q And then there's some heavy ink on the right-hand
9 side. Is there any reason why that kind of notation was made
10 by you?

11 A There was a 20 figure there, and I don't -- whether
12 that was a 23, and I thought it was 20, or whether it was a
13 sample with 20 or what, I don't remember. But I just remember
14 it was a 20, and I don't even know what it was for after I
15 looked at it, so I crossed it out.

16 Q I s- You were asked questions earlier by
17 Mr. Guild about the steam generators bolts. And in particular
18 you said that one of the fitters had shown you a cap screw
19 that had damage to the head of the bolt. I guess you'd call
20 it the allen head; is that correct?

21 A Yes, where the allen head would go in to tighten the
22 bolt.

1 Q I believe you testified that you thought the damage
2 to that particular bolt was due to improper installation
3 techniques. Do you recall that testimony?

4 A Yes, sir.

5 Q Isn't it possible that that bolt might have been
6 damaged during removal?

7 A It's possible.

8 Q So it's one or the other?

9 A Yes, sir. I didn't -- when I clarified it to
10 installation, I just meant, you know, that it wasn't -- didn't
11 appear to be an error by the manufacturer of the bolt. It was
12 caused by work done on the bolt.

13 Q So it could have been damaged while it was being
14 installed, or it could have been damaged when it was
15 subsequently removed; is that correct?

16 A Yes, other than the fact, I think, there were other
17 bolts that were identified as being damaged during
18 installation, while they were still installed in the system.
19 So, based on that, I assumed it was done on installation.
20 That doesn't mean it couldn't happen during removal.

21 Q Now you're aware that some of the bolts, when there
22 were installed, were in a position that I'll called seized?

1 In other words, stuck in the holes they were in, and it took
2 quite a bit of force to withdraw them. Are you aware of that?

3 A I think remember reading something about that.

4 Q Do you know whether or not long bars, reinforcing
5 bars called cheater bars were used during the removal of these
6 seized bolts?

7 A I wasn't here then. I have no idea.

8 Q You also testified that the majority of the bolts
9 damaged -- and I'm talking about the steam generator bolts --
10 were damaged during the original installation. And in
11 response to a follow-up question by Mr. Guild, you testified
12 that that judgment was based on memory.

13 Can you tell me the basis for your memory?

14 A To clarify it, I couldn't tell you if they were
15 damaged during installation or during removal. I was -- my
16 effort in inspection was to see that the new bolts were
17 installed correctly, and it wasn't what was the cause of the
18 old bolts or how they were installed incorrectly. So any
19 testimony I made on that I couldn't justify from firsthand
20 experience.

21 Q Well, what about from what you might have learned
22 from other people?

1 A What I remember is the testimony that Mr. McGregor,
2 I think, felt that the bolts were installed improperly, and
3 there wasn't a procedure that was followed in the installation
4 of the bolts, and that caused the problem. That's all I
5 remember.

6 Q Just based on the McGregor testimony?

7 A That's all, yes, sir.

8 Q And the testimony you're referring to, is that his
9 deposition?

10 A Well, just from talking to Mr. McGregor.

11 Q All right. Let's talk a little bit about the cold
12 -- the bending of piping. I think you testified that there
13 was -- that Phillips Getschow had no procedure for setting
14 forth instructions for bending pipe; is that correct?

15 A They didn't have a qualified bending procedure.
16 They had a procedure for bending pipe that stated, as I told
17 Mr. Guild, what bend radii they should follow. But there
18 wasn't a qualified bending procedure that said you should use
19 this type of bender, and this is the exact process you should
20 go about in bending the pipe. Rather, from my memory, it was
21 just a procedure that stated, follow a certain bend radii.

22 Q Well, what does it take to get a qualified

1 procedure?

2 A Qualified procedure, there's from my knowledge two
3 ways to do it. You could qualify the bender and only use
4 those benders. And then in a certain time interval, go out
5 and see that that bender is still meeting the requirements.

6 Or you could measure each and every pipe that you
7 bent for ovality and wall thickness. And that would be
8 another way to go about it.

9 The first way, as far as qualifying the bender, or
10 qualifying a procedure on how you bent, would be -- and then
11 qualifying the people, the personnel, also would be another
12 way to handle it.

13 Q Now I know you explained it to Mr. Guild, but I must
14 confess it slipped my mind. Now is the bender a person that
15 does the pipe bending, or is it a company that does that?

16 A No, the bender is actually a machine. It's a
17 machine that the pipe fits in and it bends the pipe.

18 Q You're talking about, to be qualified this bending
19 machine would have to be calibrated so that it would bend in
20 the same way in each and every instance; is that correct?

21 A From my knowledge of how they did it, they would
22 qualify the bender. You would take -- let's say you have

1 various sizes of pipe. You have half-inch, three-quarter,
2 one-inch, up to basically two-inch pipe. And you would bend
3 each one of these pipes on this bender, each size on this
4 bender, measure it for ovality and wall thickness, each size
5 pipe. And you would determine then that the bender was
6 capable of producing acceptable bends.

7 Q Do you know whether or not this process was done to
8 the bender used by Phillips Getschow?

9 A In my knowledge, in my review, this was not done.

10 Q Do you know whether or not Phillips Getschow
11 qualified their people through a training process for bending?

12 A I do not believe there was a qualified training
13 program for bending either, as far as an actual qualification
14 process.

15 Q Now, help me picture the time frame we're talking
16 about. This was an 83-09 item of noncompliance; isn't that
17 correct?

18 A Yes, sir.

19 Q So the inspection for this -- your inspection for
20 this particular item was some time in 1983?

21 A Yes, it would be, more specifically in, I believe it
22 was June of '83.

1 Q June of '83. To your knowledge, did Getschow ever
2 come up with a qualified procedure for pipe bending subsequent
3 to June 1983?

4 A As far as qualifying the bender or the personnel, to
5 my knowledge, no.

6 Q Mr. Guild asked you a series of questions about the
7 item in your report on page 4. The report I'm referring to is
8 85-52. I don't know what the other number is.

9 A 50.

10 Q Yes, 50 and 52. And in particular, the unauthorized
11 holes that were cut through structural beams. You testified
12 that one of the factors you were relying on, that this problem
13 of cutting unauthorized holes in structural beams was --
14 strike that. Let me start again.

15 Your inspection report on page 4 indicates a
16 judgment that these unauthorized holes were only cut in beams
17 that were part of the -- what system was that?

18 A Drain piping system.

19 Q Yes, the drain piping system. And your basis for
20 that judgment was in part on the fact that the NRC inspectors,
21 I think to use your words, crawl all over the place, and you
22 would have seen structural beams with holes in them if they

1 had indeed existed in other systems in the plant, or other
2 locations in the plant.

3 Do you recall that testimony?

4 A That's my belief, yes, sir.

5 Q Now give me some idea of the number of inspectors
6 we're talking about who would crawl over the plant conducting
7 their inspections? There's obviously yourself. Can you
8 enumerate either who or the number of other inspectors there
9 might be?

10 A Mr. Kropp, Mr. Gardner, Mr. McGregor, Mr. Jacobsen,
11 other personnel from DRS -- Division of Reactor Safety.

12 Q Then I guess there'd be the CAT inspectors as well?

13 A The CAT inspections as well.

14 Q Turn to page 9 of this inspection report, to
15 the section entitled, plant tours. It starts out, "The
16 inspectors observe work activities in progress, completed work
17 in plant status during general inspections of the plant."

18 Were you one of the inspectors that conducted this
19 plant tour?

20 A Yes, that's a basic resident obligation. We not
21 only -- there's two ways we inspect basically. We'll look
22 into a specific item in a specific installation, and we'll do

1 general plant tours, where we'll just walk through, crawl
2 through the plant looking for anything that doesn't look
3 right. And we do that all the time.

4 Q Did you do that in connection with this particular
5 inspection, as indicated on page 9?

6 A In relation to this item?

7 Q No, just conducted a plant tour?

8 A Oh, sure. That's standard. We do that all the
9 time. Every inspection we do, we do plant tours.

10 Q About how much of your time is devoted to a plant
11 tour during the course of an inspection like this?

12 A That's hard to determine. I would say that 50
13 percent of our inspection time is plant tours. That would
14 vary from inspection month to inspection month, depending on
15 what we're involved in.

16 Q How about for this particular inspection that's
17 reported in 52/50?

18 A Basically, we have what we call 766 forms, which
19 document our inspections and the amount of time spent in each
20 area. And I don't have that here, but -- in other words, if
21 we went to the front of the report and gave our hours -- I
22 don't know how many inspection hours --

1 Q Well, it shows 186 --

2 A 186. I would say at least, conservatively, at least
3 half of that time is spent in plant tours.

4 Q And did Mr. Kropp also conduct a plant tour with
5 you?

6 A Sure, we all do that.

7 Q Do you do it together, or do you go in separate
8 parts of the plant?

9 A Sometimes we do it together. Sometimes we do it
10 separately.

11 Q Do you recall what you did on this occasion?

12 A Is this in relation to this plant tour or in
13 relation to the beam issue?

14 Q No, I'm talking about this particular plant tour.

15 A I don't remember. You have to understand, this
16 plant tour is not referring to one plant tour. We might have
17 done 20 plant tours during this inspection period.

18 Q I understand.

19 A So how many were done together and how many were
20 done separately, I don't know.

21 Q During the course of this tour, were you in areas of
22 the Braidwood plant where structural beams were observable?

1 A Sure. We're always in areas of the plant where
2 structural beams are observable.

3 Q Did you see any with holes cut through them and
4 pipes penetrating the structural beams?

5 A No. None other than the drain piping system, which
6 we identified in the report.

7 Q Earlier?

8 A Yes.

9 Q But you didn't find any in any other locations?

10 A No, we haven't.

11 Q On page 10 of the report there's an item five where
12 it's indicated that the inspector examined floor, recently
13 completed structural steel installation travelers?

14 A Yes, sir.

15 Q Were you the inspector?

16 A I don't remember, to be honest with you.

17 Q You don't remember.

18 A I don't remember.

19 Q Do you remember --

20 A It would have been myself or Mr. Kropp, and I --
21 since there's no issues identified in here, and we have done
22 it, I don't know if I did this one or he did. If there was an

1 issue, then I could remember who identified it. But since
2 it's an inspection with no unresolved, open, or violations I
3 -- it was something either one of us could have done or would
4 have done.

5 Q It says at the bottom that the documentation
6 reflected the actual installations. Do you see that?

7 A Yes.

8 Q Does that mean that there were no holes in these
9 particular -- in the structural beams covered by these floor
10 travelers?

11 A I would have to say that, yes.

12 Q Do you have the Quaka affidavit there that was
13 submitted in support of the applicant's motion for summary
14 disposition on subcontention 14(b)?

15 A No.

16 Q At the bottom of page 3 of that affidavit -- and
17 I'll show it to you -- there's a statement that says, "The NRC
18 Staff believes that in order to comply" -- this is Quaka
19 talking now -- "The NRC Staff believes that in order to comply
20 with Criterion XVIII, both the Braidwood contractors QA
21 manuals, and their active Braidwood site implementing
22 procedures should be scheduled and audited annually under this

1 guidance" -- referring to the Regulatory Guide 1.144.

2 My question is, as a present member of the
3 regulatory staff, do you agree with that statement at the
4 bottom of the page?

5 [Witness reviewing document.]

6 A I was not aware of the referencing of Reg Guide
7 1.144.

8 Q How about the next sentence? The next sentence
9 doesn't refer to the reg guide at all. It simply says, that
10 the Staff believes that in order to comply with Criterion
11 XVIII, et cetera.

12 A I believe that, yes.

13 Q Now, you seem rather strong in your testimony in
14 answer to a question from Mr. Guild, that the item of
15 noncompliance represented by subcontention 14(b) was based on
16 Criterion XVIII, and Criterion XVIII alone. And I'd like to
17 test that a little bit.

18 First of all, am I correct that you were the
19 inspector who identified this item of noncompliance; is that
20 correct?

21 A Yes, sir.

22 Q Now if I look at Criterion XVIII, and I guess you've

1 got it there. It's on page 478 of 10 CFR.

2 A Okay.

3 Q Criterion XVIII says, "A comprehensive system of
4 planned and periodic audits shall be carried out to verify
5 compliance with all aspects of the quality assurance program,
6 and to determine the effectiveness of the program." That was
7 the same sentence that Mr. Guild read to you.

8 What does the term, periodic mean as used in that
9 sentence, in your judgment?

10 A That would -- planned and periodic would be
11 dependent on the program committed to by Edison and the piping
12 contractor. So if the program committed to was yearly, that's
13 what I inspected to. And I believe the Edison -- going back
14 in time to '83 -- I believe the Edison commitment was yearly,
15 and so was the Getschow commitment.

16 Q And do you know the basis for that commitment?

17 A Of the yearly?

18 Q Yes.

19 A No, I don't.

20 Q Wasn't it the reg guide?

21 A That wasn't the basis of the violation, or what I
22 inspected to. I inspected to their commitment to carry out a

1 comprehensive program yearly in their manual, and didn't state
2 that the basis was the reg guide. Their manual said that they
3 would carry it out yearly. And I felt that, based on my
4 experience, yearly was the normal standard for a utility,
5 first of all, based on other plants I had been to. And it was
6 not a comprehensive system, if you did not do the implementing
7 procedures.

8 Q Do you know whether or not the regulatory guide that
9 I referred to implements Criterion XVIII?

10 A I'm not familiar with the reg guide.

11 Q You're not familiar with the reg guide?

12 A I'm not familiar with the reg guide.

13 Q Have you ever seen it?

14 A I probably have, but it didn't stick in my mind.
15 When we have a commitment -- a reg guide is a regulatory
16 guide. When we have a commitment in the manual that they
17 would do it yearly and have a comprehensive program, to me
18 that was the overriding issue. The manual commitment in that
19 took precedence.

20 Q Do you know whether or not the Braidwood FSAR
21 commits to the regulatory guide that we're talking about?

22 A I don't know. I could find out quick enough.

1 Again, we were doing a quality assurance -- this inspection
2 was a quality assurance inspection. And to me, the document,
3 the precedent document, the number one document was a QA
4 manual, and Getschow's QA manual. And that called out for a
5 yearly audit system.

6 Q Did you discuss this particular item of
7 noncompliance -- I'm referring to 14(b) -- with the Edison QA
8 personnel?

9 A All elements of an inspections, or all violations,
10 even unresolved items I discussed. It always has been my
11 policy to discuss those items with Edison. My policy always
12 has been as inspector, as soon as I identify that item, not
13 waiting until the exit, as soon as I identify that item that
14 is discussed with the licensee, so they can come back with any
15 feedback. And if I should happen to be missing something,
16 they can communicate that to me.

17 Q So I guess you did in this instance, with respect to
18 14(b). Did you talk to Mr. Quaka?

19 A Again, every item. Mr. Quaka wasn't there, I don't
20 believe, when I came up with that item.

21 Q Do you remember who you talked to?

22 A Mr. Summerfield was there. The item was presented

1 to Commonwealth Edison. Now whether it was Summerfield or
2 Casaro or who, at this point in time, I don't remember. All I
3 can tell you is, that's my policy as an inspector.

4 Q I understand. Have you ever subsequently discussed
5 this particular matter with Mr. Quaka?

6 A Not to my recollection.

7 Q How about Mr. Fitzpatrick?

8 A The only discussion I had with Mr. Fitzpatrick is
9 the improvement in the audit program, and his desire to
10 improve the audit program, and to make sure that we were happy
11 with the improvements in the audit program, which we have
12 been.

13 Q During your discussion with either Fitzpatrick or
14 perhaps Summerfield or Casaro, did the reg guide ever come up,
15 to the best of your knowledge and belief?

16 A Not to my recollection.

17 Q I've got a couple questions based on your last
18 deposition. I have a couple of questions on the MTV program.

19 Again, refresh my memory, was the 83-09 item of
20 noncompliance concerning material traceability of piping
21 systems, was that an item discovered by you as an inspector?

22 A Yes, sir.

1 Q I believe that the item of noncompliance as
2 reflected in 83-09 indicates a violation of Criterion X?

3 A Yes, sir.

4 Q I guess we'll have to refer to our book again.
5 Criterion X appears on page 477 of 10 CFR. Can you explain to
6 me what portion or section or sentence in Criterion X that you
7 believe was violated in this instance?

8 A Sure. Beginning, "A program for inspection
9 activities shall be established and executed by or for the
10 organization performing the activity to verify conformance
11 with the documented instructions, procedures and drawings for
12 accomplishing the activity."

13 And if you would cross-reference Criterion X over to
14 Criterion XVIII, it says, "Sufficient records shall be
15 maintained." And it says, it'll get into, "These records will
16 include the results of inspections." It says, "Operating logs
17 and results of reviews, inspections and tests."

18 So it basically said the inspections had to be done,
19 and the inspections had to be documented by Criterion XVIII.

20 Q Okay. Now what inspection, in your judgment, was
21 not being done?

22 A Well, the inspection that wasn't being documented as

1 being done -- which I'd like to clarify, because the six
2 inspectors I interviewed said they were doing it, but they
3 weren't documenting it. The inspection that wasn't documented
4 as being done was the inspection that said the correct
5 material was installed, as far as material heat number, and
6 schedule of the material.

7 Q This QC verification at the point of installation of
8 the piping system?

9 A Yes, sir.

10 Q Now if I understand the sentence you referred me to
11 in Criterion X, it says that, "The program for inspection
12 shall be established to verify conformance with documented
13 instructions, procedures, and drawings for accomplishing the
14 activity."

15 A Established and executed.

16 Q Yes. I didn't mean to -- I didn't leave that out
17 with any devious notion in mind, I just didn't think it was
18 important to the question I'm about to ask.

19 Focusing really on the latter part of the sentence.
20 And as I understand this sentence, an inspection is required
21 to verify conformance with documented instructions and
22 procedures, and drawings. Now what Phillips Getschow

1 procedure, instruction or drawing required QC verification at
2 the point of installation at the time of your inspection back
3 in June of '83?

4 A Basically, the drawing states, six-inch, Schedule 80
5 pipe, Class 2 or Class 3 or Class 1 is required to go into
6 that system; or four-inch, Schedule 40, SA106, Class 2, Class
7 3, Class 1 pipe has to be installed in that system. And
8 that's per the drawing. That's per the S&L design specs which
9 the drawing is made from. And in my opinion, that was not
10 being done.

11 Q Now what drawing are we talking about? What kind of
12 drawing are we talking about? Are we talking about an
13 as-built drawing?

14 A No, an as-built is -- I always consider an as-built
15 as, that's after the fact. I mean, an as-built is how you
16 install it. Before you install it, there's drawings that
17 state -- that show how the line is supposed to run, maybe not
18 necessarily in every case how it does run, but how it's
19 supposed to run, and the material requirements for those
20 drawings.

21 Now in the case -- and that's for small bore. In
22 the case of large bore, those material specs and class is

1 called out by what we call a data pack, which would be in
2 instruction that would cause the size, schedule and class. So
3 for small bore, it's drawings; for large bore, it's data
4 packs.

5 Now the large bore also has a reference to the
6 drawing. If you went to the S&L drawing, the large S&L
7 drawing, it would refer you to the design spec. And if you
8 refer to the design spec, the design spec would call out the
9 schedule of the pipe, the type and so on.

10 Q So let's get back to these drawings. It sounds to
11 me like you're referring to an installation drawing.

12 A Right, yes, sir.

13 Q And did the installation drawing require QC
14 verification at the point of installation?

15 A Installation drawing, what this code says, the
16 installation drawing says, whatever the drawing requires -- it
17 says, you've got to verify conformance with the drawing. If
18 the drawing calls out six-inch, Schedule 80, SA106 Grade B
19 pipe, Class 2, you have to verify conformance that you met
20 that drawing.

21 Q And wasn't that, in fact, done under the stores
22 request system as employed by Phillips Getschow, only in a

1 different manner?

2 A Well, that was the whole issue of the investigation
3 by the national board. I did not feel that the stores request
4 system was an inspection. The stores request system was a
5 document at point of release, not at point of installation.
6 So that was the whole crux system. Was the stores request at
7 point of release and not at point of installation considered
8 an inspection.

9 Q Yes, I understand that.

10 A And one also is a document review. The stores
11 request is a document review, where a field inspection is a
12 document and hardware review.

13 Q But we're not debating which is a better system.
14 We're debating whether or not we, indeed, have a violation of
15 Criterion X.

16 Do you know whether or not the Phillips Getschow QA
17 manual or QA procedures required, at the time of your
18 inspection, QC verification at the point of installation of
19 the piping system?

20 A I think, from my review of the Getschow procedures,
21 I think that the Getschow procedures were vague and
22 interpretable whether you verified at point of installation or

1 just went with the stores request system. That's the best I
2 can answer. I did not feel the procedures were clear cut on
3 how to do that.

4 Q Did you form an opinion one way or the other on
5 that?

6 A Again, it was an interpretable statement. The QC
7 inspection should verify conformance with the drawing. What
8 does that mean? Does that mean you verify at installation, or
9 is the stores request an acceptable system?

10 Q Well, did you ask Getschow what that meant?

11 A I believe Getschow from the beginning felt that the
12 stores request system met the code.

13 Q You mentioned these drawings the installation
14 drawings. Didn't these stores request system include a
15 mechanism whereby, during the process of developing the
16 as-built drawings they verified whether or not the right pipe
17 was installed?

18 A The basic review, from my understanding -- and
19 again, I wasn't assigned the close-out of this item.

20 Q I understand. We're talking about the system as it
21 existed at the time of your inspection.

22 A The system was that they would take the stores

1 request, after it came back in from the field, and they would
2 verify that that was the correct material that was supposed to
3 -- that the drawing called out. That was one aspect. So
4 there was a document review.

5 The inspectors that I interviewed also stated that
6 they did verify at point of installation the correct material
7 was installed, but they just didn't document it.

8 Q Weren't they doing that as a volunteer? Was there,
9 in fact, no requirement in the Getschow stores request system
10 to verify from a QC standpoint at point of installation?

11 A I think that was Getschow's management understanding
12 of the procedures. I think the procedures weren't clear on
13 it. But I believe a lot of the people came from the LaSalle
14 station and felt that was a better way to go.

15 So I think a lot of the people -- and I can't say if
16 all of them were -- but a lot of them were verifying at point
17 of installation, because they just felt that was a better way
18 to do it.

19 Q So you're agreeing with me that many of them were
20 doing it as a volunteer, as opposed to whether or not the
21 system required it?

22 A I would tend to agree with that, yes.

1 Q Now we're still talking about the stores request
2 system as of the time of your inspection. The pipe is now
3 installed, hopefully in accordance with the installation
4 drawings. Do you recall what the next step in the stores
5 request system is after that point in time?

6 A From what I recall, after it's installed, the stores
7 request system comes back the final package to the document
8 reviewers. And the document reviewers verify that the stores
9 request was correct in relation to the drawing requirements.

10 Q Isn't that done in connection with developing the
11 as-built drawings?

12 A I don't know. All I can answer is, from my
13 investigation they did verify the stores request against the
14 drawings.

15 Q Now you had indicated in your deposition elsewhere
16 that you had worked at LaSalle.

17 A Yes, sir.

18 Q Were you familiar with the material traceability
19 system that was employed at LaSalle by Morrison?

20 A Very much so. I worked with it for five years.

21 Q And when you looked at the Getschow stores request
22 system you said, this is a different system?

1 A Well, it was not only a different system for
2 LaSalle. I would say -- I've looked at a lot of plants, and
3 the plants I had been to, other than Zimmer, you verify at
4 point of installation. And to me, that was my understanding
5 of how it should have been done.

6 Since that time the national board has stated --
7 from my understanding of what I've heard because, again, I
8 haven't been assigned to it -- that the stores request system
9 was an acceptable system. At the time I wrote the violation,
10 I believed it should have been done at point of installation.
11 And to me, the stores request system was not an acceptable
12 system.

13 I think that's one reason the NRC decided not to
14 issue the violation and wait to see what the national board
15 ruling -- and they're the experts in the area -- would
16 determine if the stores request system was an acceptable
17 alternative or not. So the NRC decision was to wait for that
18 determination.

19 Q Well, do you consider yourself an expert on the ASME
20 code?

21 A I honestly don't like to consider myself an expert
22 in anything, based on the fact, I always consider an expert as

1 knowing the most. And there's always somebody that knows
2 more.

3 I believe I'm very familiar with the ASME code. I
4 work with it quite a bit. I've had a lot of experience in
5 it. And I felt I was qualified to make a determination on it.

6 Q So you consider yourself code-knowledgeable with
7 respect to this material traceability issue?

8 A Yes, sir.

9 Q What other plants besides LaSalle did you work on
10 with respect to -- strike that. Let me start again.

11 You testified that you're familiar with the material
12 traceability system used at LaSalle by Morrison?

13 A Right.

14 Q Are you familiar with other plants and the
15 mechanical contractor system for achieving material
16 traceability?

17 A Yes, sir.

18 Q Can you name another plant?

19 A Clinton; Nine Mile Point, which I was at for two
20 years.

21 Q Now at Clinton, did they use a traceability system
22 similar to the one that you're familiar with at LaSalle?

1 A Verifying at point of installation, yes.

2 Q Did they do that at Nine Mile Point, too?

3 A You bet.

4 Q So you became familiar with that system?

5 A Yes, sir.

6 Q And did you develop the judgment that that was the
7 best way to satisfy the requirements of Criterion X?

8 A No, that maybe reinforced my position, but my
9 position was on Criterion X and my knowledge of the code. It
10 was a combination of my experience, my knowledge of the code,
11 and my knowledge of Criterion X.

12 Q Let me ask you one last question on this. If the QA
13 manual and its implementing procedures did not require QA
14 verification at point of installation during the time of your
15 1983 inspection -- referring to the Getschow stores request
16 system -- and if the drawing itself did not specify QA
17 verification -- we're talking about the installation drawing.
18 If the installation drawings themselves did not specify QC
19 verification at the point of verification --

20 A Let me clarify that, the drawing would have to
21 specify the material or something would have to specify the
22 material.

1 Q Yes, it would specify the schedule of the pipe and
2 all that.

3 A Right. You're not saying that that wasn't there?

4 Q I'm not. All I'm saying is, that the drawing did
5 not indicate or require QC verification at point of
6 installation. Then where do we have a Criterion X violation,
7 since there's no document against which any inspection is
8 required for QC verification?

9 A If, and as I say, the procedure was vague -- if we
10 could determine there was no requirement to verify at point of
11 installation, and nothing required it, my opinion at that
12 point -- at that time and inspection, not considering what the
13 national board has said since, because they're the experts in
14 the area. At that time I probably would have cited
15 Commonwealth Edison for inadequate procedures.

16 But since the procedure was vague, I just cited them
17 for not having a documented inspection program.

18 Q Now if you had cited Commonwealth Edison for
19 inadequate procedures, what criterion would you have
20 identified?

21 A Well, I think inadequate procedures is Criterion V.
22 And I probably would have used some of the code references as

1 a back-up, the ASME code paragraphs, which has similar
2 statements and instructions and procedures in the ASME code.

3 Criterion V says, "Activities affecting quality
4 shall be prescribed by documented instructions, procedures and
5 drawings." And I believe, the installation of correct
6 material would have been an activity affecting quality.

7 So at that time, not knowing the board's result of
8 their review, I probably would have at that time issued this
9 against that.

10 And I may also say, at that time of the inspection,
11 before the board's review, Mr. Cordell Williams and Mr. Derwin
12 Hunter were also in agreement with me on this issue. It
13 wasn't an issue that I came up with myself. It was an issue
14 based on their agreement also.

15 Because after I identified this issue, both
16 Mr. Hunter and Mr. Williams were asked to accompany me to the
17 site to determine if this was an adequate and accurate
18 violation. And their summation, in accordance with mine, was
19 that this was not in accordance with Criterion X. And that's
20 how the report was issued.

21 Q Let's be absolutely clear on this. Now at the time
22 of your inspection back in '83, when you were looking at

1 material traceability for both large bore and small bore
2 piping systems installed by Getschow, it's my understanding of
3 your testimony that, among other things, you reviewed piping
4 installation drawings; is that correct?

5 A Yes, sir.

6 Q Do you remember whether or not those drawings
7 specified and required QC verification at the point of
8 installation?

9 A No, the drawing wouldn't say that. The drawing
10 would just say, six-inch, Schedule 80, SA106 pipe, Class 2.

11 Q All right.

12 A And as I read an inspection, it says, if the drawing
13 -- you have to verify conformance with that drawing. The
14 drawing called that out --

15 Q That's your interpretation of this sentence in
16 Criterion X, correct?

17 A You know, something that is important like that, I
18 didn't consider that an interpretation at the time. At that
19 time, I did not consider that an interpretation.

20 Q The question here is, under this sentence in
21 Criterion X, is that an inspection must be conducted with
22 respect to documented requirements. Now I'm not disagreeing

1 with you that it might be necessary to inspect, for purposes
2 of determining whether those installation drawings had been
3 properly implemented.

4 I'm only questioning whether, under Criterion X,
5 there was a requirement for QC verification at the point of
6 installation.

7 A The only thing I can say, in my opinion, and in
8 the people that approved the report when it went out, and the
9 people that verified it, yes, there was a requirement in
10 Criterion X to verify that.

11 Q Is your opinion based on your judgment that the
12 installation drawings had to be verified for proper
13 implementation by QC verification at the point of
14 installation, or on the basis of the vague QA manual and
15 implementing procedures that you referred to earlier?

16 A No, the interpretation was strictly against
17 Criterion X that says you have to verify conformance with the
18 drawing. And if the drawing called it out, or the data pack,
19 as we mentioned earlier, then that should be verified.

20 Q What if the verification occurred at a different
21 step of the process? A step different from verification at
22 the time of installation?

1 A Well, at that point in time -- again, at that point
2 in time, in June of '83, it was my opinion and the managers
3 that accompanied me to the site, that the stores request
4 system did not meet that requirement.

5 Now I'm not saying -- I can't say that we weren't
6 strongly influenced by what all of us had seen at other
7 sites. I'm sure we were.

8 Let me just go on. The bottom line of this issue
9 that I was most concerned about is, did -- the intent of
10 Criterion X and the intent of the code is to ensure that the
11 correct material was installed. Although, in my opinion, the
12 strict legal requirements were not met, the intent of X was
13 met by the fact that the pipe was tested and it met its
14 intended safety function.

15 So my concerns from a safety point of view for the
16 plant were negated. And that's as honestly as I can -- that's
17 a summation of the issue.

18 Q But isn't the objective of material traceability and
19 the assurance that the right material is installed, isn't that
20 provided for under Criterion VIII not X?

21 A No, I don't think so. That's control of purchased
22 material. That has to do with more, to me, receipt inspection

1 as it's received. Whereas, we go through here, you go through
2 -- Criterion VIII, I'm sorry.

3 Criterion VIII, identification and control of
4 materials. Yes, that's tied very closely to Criterion X.

5 Q Well, isn't that the main provision that deals with
6 material traceability?

7 A No, I don't think any of these criteria can isolate
8 by themselves. I think they're all interrelated.

9 Q Well, they may be interrelated in some way, but
10 doesn't this deal directly with the question of material
11 traceability?

12 A We're getting into a direct issue. If we want to go
13 through the merits of Criterion VIII it says, "as required
14 throughout fabrication, erection, installation and use of the
15 item." You know, so again, I would have the same concern
16 there, the stores request was at the point of release, and not
17 at the point of erection or installation. So we can go with
18 either criteria. And that's why I say they're tied together,
19 and I have the same concern.

20 Now, let me just -- the whole point though, if we go
21 to Criterion VII, is to prevent the use of incorrect or
22 defective material.

1 Q You just said VII. Did you mean --

2 A VIII, I'm sorry, VIII. Evidently, the corrective
3 action program, which I wasn't involved in, but the testing
4 proved that the correct materials were installed.

5 So the bottom line issue is, I don't have a safety
6 concern for the plant anymore. That doesn't mean that the
7 initial violation was still based really VIII and X, that I
8 had a problem with.

9 Q So really your concern was, as evidenced in 83-09,
10 was really based both on VIII and X?

11 A Yes, I could have gone with VIII, too. I could have
12 stayed at VIII and gotten into the installation aspect of it.
13 And that's why the corrective action program had to prove that
14 the correct material was installed. And the corrective action
15 program did prove that the correct material was installed, so
16 my concern was alleviated.

17 Q Well, now that the national board has determined
18 that the Getschow stores request system to be consistent with
19 the ASME code as that system existed in 1983, during the time
20 of your inspection, how does that change your judgment, if at
21 all?

22 A I guess I'd like to say, I consider myself a man of

1 integrity, so I'm going to answer this, I don't have a safety
2 concern with the plant, because I believe the material did
3 meet the code.

4 In my opinion, although it may not have the same
5 expertise as the national board, I still don't believe
6 that the stores request system meets the legal requirements of
7 the ASME boiler and pressure vessel code. And even though
8 they are expert -- more expert than I am and more educated --
9 I still have to hold that opinion, because if I didn't state
10 it, I'd be lying.

11 Q So you disagree with them; is that correct? You
12 disagree with the national board.

13 A I disagree that that meets the code. I agree that
14 there's not a safety concern.

15 Q I understand.

16 A So it wasn't an item worth pushing, from my point of
17 view. I believe the plant is safe for the public health and
18 safety, but again, I don't believe it meets the strict legal
19 requirements of the code.

20 MR. GALLO: As Martin Agronsky sometimes says,
21 that's the last word. I have no other questions.

22 MR. BERRY: I have a few questions for Mr. Schulz.

1 Let's take five minutes.

2 THE WITNESS: Let's not, because I want to get out
3 of here in about 20 minutes.

4 MR. BERRY: I said take five minutes.

5 [Recess.]

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EXAMINATION BY COUNSEL FOR THE STAFF

BY MR. BERRY:

Q Mr. Schulz, I'm going to ask you a few questions.

In the first part of your deposition back in November, Mr. Guild asked you some questions about an individual by the name of John Seeders. Do you recall that testimony?

A Yes, sir.

Q Did you identify that allegation or that issue?

A Mr. Seeders sent a letter to me, one to Edison and one to his lawyer, and that's how we discovered that original item.

Q Were you the one responsible for investigating and closing out that allegation?

A Yes, I was.

Q Did you close out that allegation?

A Yes, sir.

Q Do you recall where you closed that allegation out, the inspection report?

A Not off the top of my head. I'd have to go through my records.

Q Would it be inspection 84-32-31?

A I'd have to look at it. I believe so.

1 Q Let the record reflect that I'm showing the witness
2 inspection report 84-32-31.

3 [Counsel handing document to witness.]

4 A Yes, sir, that's where I closed it out.

5 Q And is the basis for your closure of this item
6 reflected in this inspection report?

7 A Yes, sir.

8 Q Mr. Schulz, you were also asked by Mr. Guild during
9 that same day in that same part of your deposition, whether
10 you advised Mr. Seeders of his rights and the protection under
11 10 CFR, Section 50.7. Do you recall that?

12 A I remember him asking me that question, yes.

13 Q I believe that you answered him that either you
14 didn't advise him or you didn't recall advising him.

15 A I don't recall if I advised him or not. But those
16 rights are posted on the site.

17 Q Are you familiar, Mr. Schulz, with Section 50.7 --
18 10 CFR, Section 50.7(e), that requires the licensee to post a
19 form NRC-3 entitled, "Notice to Employees" on its premises?

20 A Yes, I read that before.

21 Q That section requires that the notice to the
22 employees be posted at locations sufficient to permit

1 employees protected by the section to observe a copy on the
2 way or from their place of work. Are you aware whether such
3 signs exist at the Braidwood site?

4 A Yes, they exist.

5 Q Do you recall where they're posted?

6 A Not exactly, but I've seen them at various spots.

7 Q Well, are they posted in such a place that employees
8 can observe them on their way to or from their place of work?

9 A I believe they're posted adequately for employees to
10 look at them, yes.

11 Q Do you recall if these signs were posted at the time
12 that Mr. Seeders was -- strike that.

13 A I think Mr. Seeders --

14 Q Do you know if these signs were posted in August of
15 1984?

16 A I believe they were. I believe Mr. Seeders was
17 aware of this, of this protection. I think that's one reason
18 he issued the letter to myself.

19 Q Okay. You were also asked by Mr. Guild about a
20 meeting held on March 29th -- I think there were two meetings,
21 both held on March 29th, between yourself, Inspector McGregor,
22 and various QC inspectors. Do you recall that?

1 A Yes, sir.

2 Q Are you responsible for the close-out or the
3 investigation of the allegations raised in that?

4 A No, I was not.

5 Q Do you know who was?

6 A I believe Mr. Mendez and Mr. Neisler.

7 Q Could you tell us the extent of your involvement in
8 that episode? And what I'm referring to is the meetings held
9 between yourself and Mr. McGregor and the various QC
10 inspectors on March 29th, 1984.

11 A My involvement was listening to the six inspectors
12 in the morning -- I believe it was about 8:15 -- and the other
13 24 in the afternoon, which was about noon. And what the
14 inspectors stated and what they said is all documented, and I
15 think has been made available to all parties.

16 Q When you say that it was documented, do you recall
17 where it was documented?

18 A No, I don't.

19 Q Let me show you a document dated March 29th, 1985
20 from L. McGregor and R. Schulz. It's a memorandum intended
21 for R.F. Warnick and C. Wilde, concerning the subject, quality
22 control allegations from L.K. Comstock inspectors. And I ask

1 you if that refreshes your recollection as to where the matter
2 --

3 A Yes, this is basically everything the inspectors
4 stated to us, and it's all in the record here.

5 Q Now which inspectors were these?

6 A I believe this first one has to do with the six
7 quality control inspectors [indicating]. That would be
8 referring to the morning meeting.

9 Q Now on page 7 of that memorandum, March 29th, 1985
10 concerning the subject of quality control allegations from
11 L.K. Comstock inspectors, page 7 in the middle of the
12 paragraph, the sentence that starts with -- it reads, "It
13 appears at first glance, with the information we have
14 received, that a shutdown or some other aggressive action of
15 the electrical work may be necessary to establish the quality
16 of past work and the quality of the ongoing work."

17 Did you write that sentence?

18 A Mr. McGregor wrote it, but I concurred with it.

19 Q Could you clarify what you meant -- you and
20 Mr. McGregor meant by, "It appears that a shutdown or some
21 other aggressive action of the electrical work may be
22 necessary"? That sentence, could you clarify?

1 A Based on, what it says, at first glance -- based on
2 26 inspectors coming over and complaining of potential
3 intimidation and harassment, we felt at that point in time
4 that either a shutdown was necessary or inspectors should be
5 sent out right away to investigate the issue.

6 Q Mr. Schulz, you indicated that 26 inspectors --

7 A Twenty-four, I'm sorry.

8 Q This memorandum only speaks to six quality control
9 inspectors.

10 A Well, that was the six that came over in the
11 morning. And then 24 came over in the afternoon.

12 Q So was this memorandum written after -- or when was
13 this memorandum written in relation to --

14 A I imagine it was written probably even after the --
15 McGregor wrote it, so I don't know exactly when he wrote it.
16 Whether he wrote it the same day or the day after, I don't
17 know.

18 Q Was it written after the meeting with the 24
19 inspectors?

20 A I would guess so, but I can only conjecture because
21 I didn't write it.

22 Q Mr. Schulz, I'm going to show you another

1 memorandum. It's dated March 29th, 1985. It's a memorandum
2 for R. Warnick and C. Williams from L. McGregor and
3 R. Schulz. The subject is a telephone conference call with
4 Commonwealth Edison in regard to L.K. Comstock quality control
5 problems.

6 [Counsel handing document to witness.]

7 Q I ask if you can identify that.

8 A Again, I concurred in it, but Mr. -- I'm not saying
9 I disagree with it. Mr. McGregor wrote it, I concurred in it.

10 Q You are familiar with it?

11 A Yes.

12 Q Let me direct your attention to page 4 of that
13 memorandum -- strike that.

14 Could you tell me, just explain this memorandum,
15 reasons for it?

16 A Just to document what went on, what happened, and
17 the chronology of the events and CECO's corrective action.

18 Q As to --

19 A As to how they were going to handle this problem or
20 this perceived problem.

21 Q And that problem being?

22 A The morale and the attitude of the Comstock

1 inspectors.

2 Q Directing your attention to page 4 of that
3 memorandum, it states that, "Region III and the residents were
4 satisfied with CECo's comprehensive and extremely swift
5 corrective actions taken this afternoon. An agreement was
6 made to keep the NRC appraised of the meetings to take place
7 early next week and CECo's long range plans to address quality
8 assurance and quality control problems identified at
9 L.K. Comstock Company."

10 I would ask you, Mr. Schulz, if you could explain
11 what appears to be an inconsistency between what you and
12 Mr. McGregor wrote in the first memorandum stating, "that the
13 lack of action by CECo in this area needs to be addressed
14 along with CECo's management slowness or inability to take
15 corrective action. The resident inspectors apprised CECo
16 management last fall of the problems in L.K. Comstock quality
17 control department."

18 A Well, first of all, this memo had to do with --

19 Q When you say this memo --

20 A The March 29th when we stated that aggressive action
21 or shutdown should be initiated. This had to do with what we
22 perceived as a potential problem.

1 The first aspect is, since that time we have not
2 been able to identify any specifics that any quality was
3 sacrificed. So my view of a shutdown today would be different
4 than my feeling of a shutdown then.

5 Now I wouldn't -- if I could reflect back, since we
6 haven't been able to come up with any examples, I would say a
7 shutdown or aggressive action was not necessitated -- it was
8 not necessary. At that time, I felt it was because we didn't
9 really know if it was a real, a perceived problem, or an
10 actual problem.

11 Now this other memo dealt with CEC's corrective
12 action as a result of those 26. And we were satisfied with --
13 24, excuse me -- we were satisfied with their corrective
14 action to, if there was a problem to correct it for the
15 future. But that didn't mean, at that point in time, that
16 there wasn't a problem in the past.

17 So the first one where a strong corrective action
18 had to do with maybe current and past problems. And the
19 second one had to do with Edison's corrective action as far as
20 future problems. In other words, how they reacted to it was
21 great. That didn't mean the problem didn't exist, and we have
22 determined since that we haven't been able to find any

1 examples that are real quantity, quality problem did exist.

2 Q Thank you. Mr. Schulz, on page 15 of the transcript
3 of your deposition of November 1st, 1985 appears an insert.
4 It's a one-page document entitled, Identification. And on
5 that, on this page is a list of what appears to be subparts of
6 the intervenor's amended quality assurance contention for
7 which you have had some involvement in, either identification
8 or close-out or both.

9 Do you recall that?

10 A Yes, sir. That was a document I prepared that
11 identified -- described the items I identified and described
12 those items that I both identified and was responsible for
13 closing.

14 Q Mr. Schulz, I'm going to ask you a number of
15 questions regarding each of these subcontentions, and I'm
16 going to ask you where you identified that violation that
17 forms the part of the basis for the subcontention. And if you
18 closed it out, where you closed it out.

19 MR. BERRY: Off the record.

20 [Off the record.]

21 BY MR. BERRY:

22 Q Mr. Schulz, directing your attention to the insert

1 that appears after page 15 of your November 1, 1985
2 deposition. And that document indicates that you were
3 responsible for parts of subcontention 1 in part,
4 subcontention 2 in part, subcontention 3(b), subcontention
5 3(a), (b), and (c), subcontention 4(b), subcontention 6(b),
6 (c), (d), (e), (f), (g), and (i), subcontention 7(a),
7 subcontention 9(a), 9(c), 9(d), 9(e), subcontention 10(b),
8 subcontention 11(c) and (d) in part, subcontention 12(a) in
9 part, subcontention 12(b), subcontention 12(i), and
10 subcontention 14(b).

11 And it indicates also that you closed out
12 subcontention -- that you're responsible for closure of
13 subcontention 3(b). Have you closed that item?

14 A Yes, I have closed 3(b). And the report number is
15 85-52 and 50.

16 Q Have you closed out subcontention 6(b)?

17 A Yes, I have. 6(b)(2) I closed out, which is in
18 report 84-40 and 39. Is that right? Wait a minute. Yes, I
19 closed out 6(b)(2) and 6(b)(3). 6(b)(3) is closed out in
20 85-32 and 31. And I closed out 6(b)(4) in 85-32 and 31.
21 6(b)(1) I did not close out. That's still open. That's been
22 assigned to Mr. Kropp.

1 Let me make a correction. Can I make a correction?

2 Q Go ahead.

3 A I closed out -- let me correct -- I closed out

4 6(b)(3) in 85-52 and 50. I did not close out 6(b)(2). I

5 wasn't assigned that part of the item. It's not my report.

6 Q 6(e)? Did you close out 6(e)?

7 A 6(e) I closed out in 85-07.

8 Q 6(g)?

9 A 6(g) I closed out in 84-42 and 38.

10 Q 6(i)?

11 A 6(i) I closed out in 85-15 and 16.

12 Q And 14(b)(1)?

13 A 14(b)(1) I closed out in inspection report 85-52 and
14 50.

15 Q 14(b)(3)?

16 A I closed out that also in 85-52 and 50.

17 Q Mr. Schulz, do you recall being earlier asked by
18 Mr. Guild whether you were involved in preparation or you
19 participated in the summary disposition process? Do you
20 remember that?

21 A Yes, sir.

22 Q And I believe you answered that you had. And I

1 believe the item, the subcontentions were 6(f), 6(g), 6(i),
2 14(b)(1) and 14(b)(3). Do you recall that?

3 A Yes, sir.

4 Q Is that correct?

5 A Yes, sir.

6 Q Could you explain for us the extent of your
7 involvement or the basis of your involvement in that process?

8 A Summary dispositions -- those items I closed out
9 based on my closure reports. In other words, anything I feel
10 that I closed in the report, could be summary disposed. And
11 all the information for the summary disposition came from my
12 closure report, my NRC closure report. And there is no
13 additional information other than what's in the NRC closure
14 report.

15 Q You were asked by Mr. Guild whether your affidavit
16 regarding the summary disposition matters contained any
17 material fact, or any new matter different from the motion for
18 summary disposition itself. Do you recall that?

19 A Yes, sir.

20 Q Do you have an answer to that question?

21 A There's no new matter other than what is in my
22 inspection reports.

1 Q Your close-out of the other subcontention items for
2 which you were responsible, could you tell us where the basis
3 for the close-out of those were? Where we could find the
4 basis for those?

5 A The basis would all be in my closure reports.

6 Q Are any of those parts of the subcontention closed
7 out on the basis of any information or any facts that's not
8 reflected in that inspection report?

9 A No, not to my knowledge.

10 MR. BERRY: That's all.

11 THE WITNESS: Thank you.

12 [Discussion off the record.]

13 BY MR. BERRY;

14 Q Mr. Schulz, you indicated that you wanted to correct
15 a previous statement that you made in response to one of my
16 questions?

17 A Yes, sir.

18 Q What is the nature of the correction?

19 A Item 6(b)(2) and item 6(b)(5) were not assigned to
20 me, so I did not close those out.

21 Q Do you know who did?

22 A One of them was Mr. Pelke and one of them was

1 Mr. Muffett. I don't know which one was which.

2 Q Okay. Are there any other corrections you'd --

3 A No.

4 MR. BERRY: Thank you.

5 [Whereupon, at 4:44 p.m., the taking of the
6 deposition was concluded.]

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1 CERTIFICATE OF DEPONENT
2

3 I, JOHN SEEDERS, do hereby certify that I have read the
4 foregoing transcript of my deposition testimony,
5 and, with the exception of additions and corrections, if any,
6 hereto, find it to be a true and accurate transcription
7 thereof.
8

9 _____
10 JOHN SEEDERS
11

12 _____
13 DATE
14

14 ***

15 CERTIFICATE OF NOTARY PUBLIC

16 Sworn and subscribed to before me, this the _____
17 day of _____, 19____.
18

19
20 _____
21 NOTARY PUBLIC IN AND FOR

22 My commission expires:

1 CERTIFICATION OF NOTARY PUBLIC

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

14
15
16

17 PAMELA BRIGGLES

18 Notary Public in and for the
19 District of Columbia
20

21 My Commission expires May 14, 1990.
22

EVALUATION - Hardware Impact of ECNs and FCRs Not Being Stamped on Phillips
Getschow Company Controlled Drawings

(Ref. NRC Open Item 83-09-02A)

The purpose of this document is to review and assess the potential hardware impact of situations where unincorporated design changes (ECNs and FCRs) were not annotated on controlled copies of design drawings used by Phillips Getschow Company (PGCo). NRC inspections, CECO Quality Assurance audits and PGCo Quality Assurance audits have identified various circumstances where ECNs and FCRs have not been stamped on controlled copies of design drawings. In assessing the hardware impact of these situations where ECNs and FCRs have not been noted on controlled drawing copies, the following facts must be considered:

1. ~~PGCo does not perform installation activities directly from these stamped drawings.~~ The drawings identified as not having ECNs and FCRs properly annotated were found in the PGCo offices, PGCo document control stations in the plant or PGCo foremans' offices in the plant. Drawings at the above locations are not used for the installation activities but are used for reference. The actual activities are performed to the drawings and process documents in the production data packages assembled in accordance with the applicable PGCo procedure:

Large Bore Piping - PGCo Drawing (Ref. QCP-B21)

Small Bore Piping - PGCo Drawing (Ref. QCP-B28)

XX ~~Pipe Supports - Pipe Support Data Pack (Ref. QCP-B2)~~

~~Instrument Piping & Supports - PGCo Drawing (Ref. PGCP-30)~~

2. Review for impact of an ECN or FCR on installation activities is independent of the stamping of the ECN or FCR on controlled drawing copies. PGCo procedure PGCP 1.2 for component support related ECNs and FCRs and PGCo procedures PGCP 1.1 for all other ECNs and FCRs require an impact review of each ECN and FCR by the appropriate PGCo Engineering Group. If necessary, as a result of this PGCo Engineering review, the appropriate installation documents referenced in section 1 above will be recalled and revised as necessary and/or a Field Change Order issued in accordance with PGCo procedure PGCP 1.1. This document review and revision of installation documents is separate from the document control function of stamping controlled drawing copies with appropriate ECN and FCR numbers. Lack of annotation of ECN and FCR information on controlled drawing copies does not infer lack of proper PGCo Engineering review and revision by PGCo of appropriate PGCo installation documents and therefore has not impact on hardware installation.

Mike
Gotski

Schulz
Ex. #1

3. In general, the use of ECNs and FCRs are to resolve contractor identified field installation problems. In the vast majority of cases, design changes are made at the request of the installing contractor to resolve a field interference, provide component access or resolve some other field installation problem. Problems, conflicts and items requiring clarification identified by the contractors in the approved design documents are forwarded to S&L for resolution. When resolution requires a design change, an FCR, ECN or drawing revision is prepared and issued to the contractor. Hence, the contractor performing the installation work is constrained to performing the installation to the design change document such as an ECN, since the design change document was requested by the contractor to make the installation practical and/or possible. Because of this need for a design change in order to make a particular installation practical and/or possible, it is expected that the contractor will perform the particular installation to the requested design change even in the unlikely event that the design change was not annotated on the appropriate drawing as required by contractor procedures. There is no safety impact in this situation when contractor document control procedures may not have been completely implemented (eg. a requested design change not annotated on the appropriate drawing), since the personnel performing the work in the field are required to have the design change document in order to perform the installation.
4. The more critical installations are double checked against appropriate design criteria during the reconciliation process. PGCo as-built information for piping subsystems requiring formal analysis by Sargent and Lundy (S&L) is reviewed against the original design by S&L during the piping analysis reconciliation process as delineated in S&L procedure PI-BB-64. During this process, any differences between the PGCo as-construct information (installed condition) and the original design are reconciled. This provides a double check to insure that all necessary ECNs and FCRs are addressed and reconciled so that the final installed piping condition meets the appropriate design requirements. PGCo subsystem close out letters for subsystems requiring formal analysis are reviewed by S&L in accordance with S&L procedure PI-BB-63 to insure that the final installation has incorporated the necessary ECNs and FCRs. This reconciliation process for subsystems requiring formal analysis (which are the most critical systems in the plant) provides for an independent review of the computed installation to insure that all required ECN and FCR information has been reconciled.

The above facts demonstrate that, although the lack of proper annotation of unincorporated ECNs and FCRs on controlled drawings is a violation of PGCo document control procedures, this situation should not be expected to have any adverse impact on the actual hardware installation activities.

Evaluated By: M.A. Gushki

Date: 1/9/85

Reviewed By: [Signature]

Date: 1-10-86

Schulz
Ex. #2

Based on these overinspections of Napoleon's final inspections performed by other site organizations, there was no impact on work prior to the audit deficiency.

- (2) The licensee's review of the closing of audit deficiencies identified during their 1980 QA audits at Braidwood was expanded to audit deficiencies issued during their 1981 audits. This expanded review was to provide additional assurance that past work has been adequately addressed. This review determined that past work was addressed, did not require to be addressed because of the nature of the audit deficiency, or was in the process of being resolved. The inspector reviewed several of these audit deficiencies and concurred with the licensee's assessment.
- (3) The inspector verified that Q.P. 18-1 and Q.P. 18-52 were revised to required audit deficiencies to be closed only after corrective action has been determined to be implemented.
- (4) The inspector verified that the training outline of the licensee's auditor training course covered the proper evaluation and documentation of past work in the close out of audit items. In addition, the format for deficiency write-ups have been revised to address any impact on previous work. An inspection by regional personnel in September 1985 (456/85046; 457/85045) verified that this corrective action was effective. This item is considered to be closed.

(Open) Violation 456/84-44-04; 457/84-44-04: Fasteners utilized in Class 1E seismic cable tray hangers and battery racks did not always meet the requirements of ASTM A307 in regards to the manufacturer's identification marking. Some of the corrective action had been evaluated and verified for implementation during the inspection period documented in Inspection Report 456/85032; 457/85031. The inspector, assisted by a regional specialist, reviewed the test results for sixty (60) fasteners selected from various installations. The sixty fasteners tested were in addition to the sixty fasteners selected from storage which were previously tested. The disposition of the licensee's Nonconformance Report (NCR) 692, which identified this deficiency in the ASTM A307 fasteners, was reviewed by Sargent & Lundy and appropriate licensee personnel. The disposition was "use as is" based on the results of the product audit (testing of 120 fasteners). The inspector has determined that the corrective action and disposition documented on NCR 692 was adequate. The inspector reviewed NCR 783, which was issued December 2, 1985, that identified unmarked A307 bolting in vendor supplied equipment. This NCR does not yet have an approved disposition. The inspector will review the disposition once it is approved by the appropriate licensee personnel. This violation will remain open pending the adequate closure of NCR 783.

(Closed) 456/85007-08; 457/85007-08: The piping contractor did not have a procedure or documented instruction stipulating a systematic method for producing an accurate Inservice Inspection drawing.

The corrective action consisted of revising Commonwealth Edison Procedure PCD-25, "Distribution And Control Of Site Preservice Inspection Drawings." The change was included in Section 4.1 and stated, "The PSI Isometric's drawings shall include all the attributes detailed on the ISI checklist (Attachment B)."

A supplemental response from the licensee to the NRC was issued on January 24, 1986, and stated that the ISI checklist would be used by Phillips Getschow piping personnel and a letter from the Project Construction Superintendent to Phillips Getschow on January 26, 1986, notified the contractor of this requirement.

In addition the supplemental response stated that the licensee has and will continue to review the drawings for conformance with preservice conditions, including the fact that examination crews walkdown the drawings while performing the baseline volumetric and surface examinations. This item is considered to be closed.

(Open) 456/85015-06: The licensee's Quality Assurance Department inappropriately closed Nonconformance Report (NCR) 600 and as a result did not assure that conditions adverse to quality were corrected. Part of the licensee's corrective action and corrective action to preclude recurrence was evaluated and verified for implementation during the inspection period documented in Inspection Report Nos. 456/85032; 457/85031. The inspector evaluated and verified further licensee corrective action pertaining to this violation. This corrective action consisted of the licensee's QA department performing an independent review of ten NCRs closed during the same time frame as NCR 600 (September 1984). This review included verification that the corrective actions were complete and effective. The review also addressed proper identification, documentation, and disposition of the selected NCRs. The NCRs reviewed by the licensee were: NCRs 511, 366, 623, 570, 468, 437, 569, 332, 424, and 483. The inspector also reviewed the NCRs and their supporting documentation and determined that they were properly closed. The licensee's QA department identified clarifications which were required for some of these NCRs. These clarifications had no technical effect on the disposition of the NCR (typographical errors, blocks left blank instead marked "N/A," etc.). The inspector also selected five other closed NCRs to verify the effectiveness of licensee's review. These NCRs were:

<u>NCR</u>	<u>Issued</u>	<u>Closed</u>
521	6/84	9/84
591	1/84	8/84
648	8/84	12/84
726	2/85	8/85
743	5/85	10/85