SIMONS

[redacted]

UNITED STATES OF AMERICA

NUCLEAR REGULATORY COMMISSION

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In the Matter of:

COMANCHE PEAK (Units 1 & 2)

Docket Nos. 50-445
50-446

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INTERVIEW

OF

CORY ANDREW ALLEN

The Dallas Room
Marriott Hotel (Greenpoint)
244 North Gelt East Drive
Houston, Texas 77060

Monday, November 21, 1983

The interview commenced, pursuant to notice, at 1:08 p.m.

PARTIES PRESENT:

FRANK HAWKINS, Reactor Inspector
Region III
799 Roosevelt Road
Glen Ellyn, Illinois 60137

CLAUDE JOHNSON, Reactor Inspector
Region II
611 Ryan Plaza Drive
Suite 1000
Arlington, Texas 76001

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FOIA 86-A-219-Standt
(FOIA-84-779)

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C O N T E N T S

ALLEN INTERVIEW EXHIBIT NO.	MARKED FOR IDENTIFICATION AND SUBMITTED FOR THE RECORD
No. 1	4
No. 2	17
No. 3	22

P R O C E E D I N G S

MR. HAWKINS: All right, just before we got started I told Cory that we would provide him a copy of the transcript. Let me put his address into the record to make sure we have it. It is [redacted]

The next thing I would like to do is introduce everybody. My name is Frank Hawkins, I am a reactor inspector from the Region III Office in Chicago. To my left is Claude Johnson who is a reactor inspector from the Region IV Office in Dallas and, of course, Mr. Cory Allen whom we are here to interview.

Before we get started, let me go through the purpose of the interview, and that is to clearly define each technical concern you have. I want to understand exactly what your concern is in every area. We want to see everything from your perspective.

Now, to accomplish that, we are going to go through each concern with you. To refresh your memory, we will read it to you, in other words. Then we will discuss each one with you.

Whereupon,

CORY ANDREW ALLEN

having first been duly sworn by the Notary Public, was examined and testified as follows:

BY MR. HAWKINS:

XXX Q Do you have any opening remarks you would like to make?

A Not at this time.

Q All right, let's get started, Statement 1.

MR. HAWKINS: I guess before we get to that, let me enter as Exhibit 1 Mr. Allen's statement that was provided to us about what, two or three months ago, Claude?

MR. JOHNSON: I would say two or three months ago, approximately.

XXX (Whereupon, the document was marked for identification as Exhibit No. 1)

BY MR. HAWKINS:

Q All right, now to Statement 1. CCP-40, paragraph 4.3.1 states, "Imperial coatings may be applied in the following sequential order: 11S/1201/11S/1201 or 11S/1201/111201. Imperial letter dated May 8, 1978 in the second paragraph states that: Although the resultant systems 11S/1201/11S/1201 or 11S/1201/111201 have not been qualification tested, there is no reason to believe that they are not viable systems. This is proof that the method in which this concrete coating system is specified to be applied has not been qualify tested and is based on the manufacturer's opinion. The coating engineer accepted the manufacturer's opinion in lieu

of requiring verifiable proof by testing."

Now, Cory, the systems that you referred to, where would they be used?

A These concrete substraights through the reactor building.

Q So, it's all Service Level 1?

A Exactly.

Q And I guess I am having a little trouble understanding under what circumstances the new tech coatings will be applied in the sequence that you are referring to, and that CCP-40 refers to.

In other words, is it a repair or a standard application?

A Well, it really doesn't state whether or not it is a repair or not. My assumption is it would probably be in a repair situation. But that is not clear in the procedures.

Q Okay, so let me understand, then. Your concern is that the procedure of the specification that refers to the use of that coating does not specify or stipulate whether it is a repair or standard application.

A Right, that's my understanding.

Q But to your knowledge, which is it typically used as, a repair or standard application?

A I am not exactly sure. I think it is a repair system. That is what it looks like it probably is, but you

know, all I know, that is how it is specified in the procedure.

Q Okay. Now, let's assume that you are right and the intention is that it was to be used as a repair. The procedures, I guess, control the technique used and the transitions, all that sort of thing, for repairs.

A Right.

Q How big an area would you be referring to where that resulting system probably was used?

A I don't know. I don't think the procedure even specifies or limits the actual area in which that system is used.

Q Okay, but if it were repair, I guess that it would be limited in size or extent because it was a repair; right? In other words, an engine have that, according to spec -- or an engine happened, with, I should say. Do you recall that?

A I don't recall that. But let's take, for instance a repair area on steel. A repair area can be totally re-stripping entire piping. So, if it was a concrete substraight they might strip, you know, a fairly large area all the way down to, probably 11-S and then come back and apply 1201, 11S/1201 or whatever.

I don't think there is any stipulation as far as how large the area is.

Q Okay. How could they strip off the 1201 and leave a clean 11S to work with? Wouldn't they use a roto pean or something and go right down to repair a substraight, and then start over from the beginning again?

A Sure, they can do that. But I am sure they probably can strip it down just to 11S. They keep stripping to remove all the white top coat until they are down to 11S. They keep stripping until they remove all the white top coat until they are down to 11S.

Q Okay, and then they bring that back up to the proper thickness and then apply these other systems?

A In that sequence, yes. In that sequence.

Q Okay. Have you ever seen that sequence used in the field?

A No, I haven't because I am not a certified concrete inspector.

Q Okay, you are just a steel inspector.

A Exactly.

Q Who told you that this system is actually being used or has anybody told you that?

A Nobody has told me. I am just reading the Comanche Peak construction procedure, and there it is, written in their procedures. And that is what my question is about, why is it in their procedure?

Q Okay. So, your concern is based on your review of

the procedures and the specifications.

A Exactly, right.

Q You say in your statement that the coating systems have not been qualified. What is the basis for that conclusion?

A Well, based on the manufacturer's letter. It says, "Although the resultant systems have not been qualification tested, there is no reason to believe they are not viable systems." That is the manufacturer that is actually saying that.

Q To your knowledge, was the testing that was requested in the last paragraph in the May 1978 letter from Imperial Coatings ever performed?

A I have no knowledge one way or the other.

Q Do you know which one I am referring to, exactly? Let's see, it was Attachment 2 to Exhibit 1. It is the last paragraph here.

It says, "Test will be initiated to demonstrate the intercoat adhesion properties of these systems. It is also suggested that El Cometer adhesion test be conducted by QC at the job site to confirm the expected good adhesion between top coat and surface."

To your knowledge, was that ever done?

A No, I have no knowledge of whether it has been done or not. But again, the qualification testing I am talking

about -- and probably what you are referring to, repairability tests -- I am asking you to determine whether or not there has been ever any DBA test of the system as required by ANSI 101.2, Section 5, which is the section on repairability tests.

Q All right, sir. Your concern is for repairability.

That's the next question that I wanted to ask you was, would the testing that they specified in that last paragraph of the letter that we just read, would that testing have been sufficient to qualify the system, in your mind?

A Well, that's a difficult question to answer because I don't know exactly what testing they are actually doing. You have to evaluate what the test procedure was and how the test panels were prepared, et cetera, et cetera; and you have to know what the acceptance limits are.

So, I would have to review the actual test data myself, plus the test procedure, in order to be satisfied in my mind that it satisfied ANSI 101.2.

Q So, let me make sure I understand what you have told me. You want to know whether the systems, the two systems we referred to earlier, have been qualified in accordance with ANSI 101.2 and 101.2.

A Exactly.

Q That is the question. And when you referred to 101.3

you are talking about ir radiation DBA testing repairability?

A Exactly.

Q The whole smear.

A Yes, sir.

Q All right. One thing I am not clear on, if this were a repair system and it was limited in its use as far as extent, would not the testing for intercoat adhesion be enough to qualify the resulting repaired system, or the resulting system as a result of the repair?

A Are you saying just El Cometer adhesion pulls to determine?

Q Yes.

A I don't think so because you are still modifying the system and every time you modify the system you must go back and perform the testing all over to make sure that this modification does not compromise the integrity of the coatings. That is my understanding.

Q Okay. But by adding the extra two coats of 11 or 11S and 1201, wouldn't the likely result of that be a loss of adhesion between coats and not necessarily a result of blistering or something like that, that would come up as far as irradiation?

A Well, my feelings about that is that you are making educated guesses, you are making assumptions, and this all has to be proved. As a coatings engineer, I would never want

to make a judgment of that kind. You would have to go back and retest the system to make darned sure that it is actually going to work under the conditions of this project, under LOCA conditions.

Q All right. And that is your final line, basically.

A Yes, sir.

Q You are concerned that the resulting repair systems for concrete coatings, which are specified in the procedure, were not ever -- to your knowledge -- qualified in accordance with ANSI 101.2.

A Yes, sir.

Q All right.

MR. HAWKINS: Do you have any questions, Claude?

MR. JOHNSON: You may have covered it.

BY MR. JOHNSON:

Q I would just like to know, how do you know this? Are you assuming there had not been any test run, or is this hearsay, or what?

A Well, it is this Imperial letter. They state that they have not been qualify tested; that is their own quotes. That is right out of their letter to Comanche Peak.

With my experience previously at the South Texas Project, we used the identical Imperials coating system and we did not have -- I have questioned the Imperials lab for their test data and they never had any kind of repairability

test data such as this ever. It is my experience that this data does not exist.

Tape 2 fls

2-1

BY MR. JOHNSON:

Q So as far as you are concerned then, to your knowledge, you don't know whether these tests have been performed?

A To my knowledge, I do not know for a fact, but it is my feeling they aren't, and based on this letter, this quote, they actually are stating that qualification testing has not been performed. So what I am requesting is for the NRC or somebody to investigate this because I am not in a position to determine to go looking for the status. I think someone should to determine whether or not this data does exist.

MR. HAWKINS: All right. We understand your concern, and we will do that.

Now that we have got the ice broken a little bit, why don't we, before we go on to statement two, why don't you tell us a little bit about what your job is at the site and who you report to and what your basic responsibilities are.

THE WITNESS: I work for Ebasco Services, Incorporated. I report to Tom Brant, who is the QC's supervisor. I am a certified coatings inspector, certified to inspect the application of coatings onto steel substrates. My job is primarily inspection for hold points immediately prior to application of coatings at Comanche Peak, and that

2-2

is for all steel surfaces.

BY MR. HAWKINS:

Q That will be for all ---

A For liner plate, pipe hangers, conduit supports, et cetera.

Q Do you inspect just service level one areas?

A Exactly, only service level one.

Q Is QC at Comanche Peak involved at all in inspection of service level two?

A No.

Q You all are not involved in it?

A No.

MR. HAWKINS: All right. Let's move on to two. Claude, I think you were going to do that one.

BY MR. JOHNSON:

Q All right, statement two, if you will follow what you have got there. "There seems to be a discrepancy with the sequencing of coating systems at CPSES. Non-conformance report C83-01752 questions the legitimacy of applying carboline CZ-11 over carboline 305. Note that this deposition for this NCR suggests that the coating specification, AS-31, does not require a specific sequence of coatings for the system."

Could you explain the statement, Cory, "This NCR suggests that the coating specification AS-31 does not

2-3

require a specific sequence of coatings for the system"?

A Well, to explain that, if you look on Attachment 2, which is NCR C83-01752, reported by [redacted] the disposition, the second sentence says, and it is referring to AS-31, the specification, the disposition says "This table does not identify a full system sequencing or application parameters."

What we are talking about here is the coating specification, the Gibson-Hill coating specification that is the parent or mother document of all the QC procedures, the construction procedures. What the dispositon is saying is that it does not identify full system sequencing or application parameters.

In other words, what he is telling us is that they can apply any sequence of the coating systems they desire, like primer with a top coat, the primer, the top coat, whatever, that there apparently is no limit or restriction on what the sequence on the sequence of the coating system they may apply at this job site.

Q To your knowledge, is this just for repair?

A Well, this NCR deals with repair and there are several other examples that indicates this is for repair only.

Q I mean do you know of any other circumstances that this CZ-11 is applied over phenoline 305 besides repair?

2-4

A Well, it is not specified for the CZ-11 to be applied over 305, but it is done just whenever there is a violation of procedures by the crafts. But as far as being specified, no, this is the only instance where it is actually specified.

Q So to your knowledge right now the only instance is on the repair.

A Exactly.

Q So what your concern is that the procedure is not specifying whether it is for repair or not, am I correct?

A Well, I want to clear up that it is not really in the procedure itself. It is only through this NCR we are talking about and the QC inspectors use this NCR and the crafts use this NCR as well as the RFIC, which I would like to introduce into the record. It is how the craft used this to apply the CZ-11 over the 305 in the repair systems.

Q Okay. Over what size area does the application occur, to your knowledge?

A Well, the actual interface is usually around two inches, maximum, two inches or so around the interface of the repair area.

MR. HAWKINS: Why don't we make this "Request For Information or Clarification" Exhibit 2. It is dated January 7th, 1983.

2-5

INDEX.

(The document referred to was marked Exhibit No. 2 for identification and submitted for the record.)

THE WITNESS: I would like to point out that that document right there is an attachment to this NCR.

MR. HAWKINS: It is?

THE WITNESS: Yes. So it should have already been provided.

MR. HAWKINS: We will go ahead and make it Exhibit 2.

BY MR. JOHNSON.

Q How should a repair interface be properly effected as far as you are concerned?

A Well, how should it be -- I am sorry, I didn't understand your question.

Q In other words, how would you perform a repair area?

A Well, the way I would probably do it is I would mask off the 305 and spray the primer directly over the steel so that the zink is not actually going over or overlapping onto the 305 which is allowed by that RFIC in this NCR.

Q I mean saying being realistic on this on the small areas like that, to get a perfectly repairable surface

like that you would almost have to have say a perfect square around that particular area to get prime coat and then top coat applied. That is not practical construction practice, is it?

A Well, yes, it is because a lot of the repair areas are being performed with disk grinders and whatever, and they usually make a very circular or not straight surface, but it is a circular or curved in appearance, and when you are masking off with tape, it is my experience that you definitely can cover that area exactly with tape.

Q Let me ask you this then. You are saying mask off that particular area.

A Yes.

Q Now how are you going to remove that particular system? Are you going to sand blast it or are you going to use some type of power tool?

A They are going to use a power tool cleaning for repairability.

Q Can you get a power tool to actually get a perfect square like that?

A What do you mean a perfect square? Just because you are masking doesn't mean you have to have a perfect square. It can be any shape or whatever.

Q Then how are you going to prevent an overlap of these materials?

2-7

A That is what I am saying. You put tape over the 305 so the CZ-11 isn't applied over onto the 305 top coat. It is very simple to do with tape.

Q I guess what I am trying to ask here is to prepare this particular area ---

A Yes.

Q --- give me an example of what tool and what method would be used and then go on through the masking and taping. I would like to get a clear-cut idea.

A Say, for instance, you have a damaged area where the total system has been damaged like there is a cut or something, you would probably get a disk grind or grind it down and probably then you would get needle gun to roughen up the surface. You would use the disk grinder to remove all the coating and you would a needle gun to provide the roughened surface. You would mask around the 305 so all you have is bare steel. You would spray the CZ-11 or brush the CZ-11 onto that and then you would pull up the tape and sand it down so you have a smooth transition and there you are. That way you have never violated the coating system as it is intended to be applied and you have the correct sequence of coatings.

Q Are you satisfied with the provisions in Section 4.4.2.0 CCP30 for coatings and interfaces?

A Definitely not.

2-8

MR. HAWKINS: And you feel the method you just specified is the way to do it versus this?

THE WITNESS: No. I am just responding to his questions. I am not trying to say I am right or ---

MR. HAWKINS: No, don't misunderstand what I asked you. I want to know another way to do it and I want to get a feel for where you are coming from and want to understand what your approach would be if you were doing it or you were writing the procedure versus what is in there now.

THE WITNESS: All I am trying to state here is that the sequence, the actual coatings, I don't believe that is correct. May I introduce another document?

MR. HAWKINS: Sure.

THE WITNESS: Here is an RFIC I sent to the QE, Mike Foote.

MR. HAWKINS: This one is attached already to Exhibit 1. So I know it is there.

THE WITNESS: Okay. If you will notice what this is saying, this paragraph 44430 ---

MR. HAWKINS: Why don't we identify it. It is a Request for Information or Clarification dated October 20th, 1983.

THE WITNESS: And it is addressed to [redacted] who is the QE. The coding is QE.

2-9

MR. HAWKINS: From you?

THE WITNESS: Yes, from Cory Allen. I am introducing this to show the contradiction between the RFIC we just spoke of, which is attached to an NCR and this RFIC dated 10/20/83. What it is saying is that does this paragraph, paragraph 4430, does this paragraph allow CZ-11 or Carboline 191 to be applied over existing phenoline 305 top coat and left intact without sanding back to a mottled transition?

No. 2 of this RFIC says does this paragraph allow phenoline 305 applied over reactic 1201 or vice versa? The answer by [redacted] is yes, this transition interface shall be feathered back to assure a smooth final coating system.

Well, this paragraph 4430 is extremely confusing to the inspectors because we were using this to allow them to apply carboline 191 and CZ-11 over 305 without them sanding back. It is left intact and what you have is a sandwich effect. You have CZ-11, 305, the CZ-11, 305 system or you are allowed CZ-11, 305, carboline 191 and phenoline 305. You have about four or five different coating systems right in a row that are being applied.

This paragraph is so confusing and so ambiguous that we really don't know what to do, but what we are allowing them to do is apply the sandwich effect.

2-10

MR. HAWKINS: Okay. Why don't we go ahead and make that Exhibit 3 anyway, the October 20th, 1983 RFIC.

(The document referred to was marked Exhibit No. 3 for identification and submitted for the record.)

MR. HAWKINS: On here I want to make a little xxxxxxxxx sketch and I want you to explain something to me.

Here is the substrate, this is ideally, this is the primer and here is the top coat. CZ-11 here and phenoline 305 here.

Now draw for me exactly what happens during a repair and how that is sanded back. Now isn't this cleaned all the way in the center here, isn't this cleaned all the way down to the steel strate?

THE WITNESS: Exactly, bare steel, except that I think we should note that in the substrate itself profile you are going to have existing CZ-11.

MR. HAWKINS: That is the tight shadows and tightly adhered residue that is referred to in SP-10.

THE WITNESS: Yes and we will get into that a little bit later, but that is more or less addressed in SP-10. What happens is you will feather this back to give a tapered look right there.

MR. HAWKINS: And the width of that is what,

2-11

about an inch and a half according to procedure CCP-30?

THE WITNESS: Well, this distance, this interface distance should be within an inch and a half, correct.

But what will happen, and let's take, for instance, Carboline 191, they will apply the 191 over this distance. There is the one inch and a half. Then for the total system you will come back and apply phenoline 305 over this.

MR. HAWKINS: Well, draw it in here where it is really going to go.

(Witness complies and draws.)

THE WITNESS: That is the 191 which is the color red, and then you will come back over the entire repair area with 305. What this question is, I would like to point, that, No. 1, I am asking is should the 305 be brought back over to just this area only? But the answer is no, it is left intact to the one and a half inch boundary. Then you have 305 coming over this.

MR. HAWKINS: I have got you. So your concern is this inch and a half on either side that borders the actual repair area where you have got CZ-11 over 305 directly.

THE WITNESS: Yes. You have CZ-11, 305 and 191. So in this one and a half inch area you have four different coatings.

MR. HAWKINS: But I thought in natural practice that this feathered piece that is referred to here is

2-12

feathered back over the whole entire inch and a half, about like that, and that this surface in here is that mottled surface that is really a combination of both.

THE WITNESS: Yes.

MR. HAWKINS: And that basically they would come in and put their primer back in here like this and then make a cut here and here and then come in with their 305 on top of that. So in effect it is close to the right system if you are talking a lot less than an inch and a half on the corners where you actually have CZ-11 over 305.

THE WITNESS: A lot of times though that inch and a half is very, very difficult to distinguish exactly where you are starting and where you are ending because at this point the 305 has come all the way over the system and all you are seeing is red paint right there. So you don't know where the repair area starts and all you know is the ending right here.

MR. HAWKINS: Explain to me, draw a little picture here and tell me how you would do it to not have this problem that we have just referred to. Draw another one here.

(Witness complies and draws.)

MR. HAWKINS: Now don't be a purist on me here. We have got to do it the way we can really do it in the field.

(Laughter.)

THE WITNESS: Okay.

2-13

MR. JOHNSON: Now to my understanding, these are very small areas.

THE WITNESS: Yes, but when you do it 50 or 60 times a day, it turns out to be quite a few areas. It amounts to quite a bit.

MR. JOHNSON: It is a little difficult to draw, isn't it?

THE WITNESS: Yes, it is really is. I don't know if I have done it any better here, but the way it should be is say, for instance, you apply the 191 all the way up -- well, here is where the repair area cuts off. That is where it has been feathered off.

MR. HAWKINS: Yes.

THE WITNESS: You apply the 191 in this direction one and a half inches. So this should be sanded back. It should be sanded back to that point where the feathered edge is. So there is no longer any 191 over the top coat, the 305. It should be only over this feathered edge right here.

MR. HAWKINS: Okay. But you have still got in this area right here, you have still got the same problem, don't you? Do you have a primer over a top coat?

THE WITNESS: Yes, but we are just talking about the edge right here more or less.

MR. HAWKINS: But I mean right in through here

2-14

you have still got the same problem if I see what you have drawn correctly.

THE WITNESS: Yes, the same problem. But what they will do for CZ-11, and I haven't seen them do it for 191 because they haven't been required to do that, but they will actually do is they will come back and sand this totally out right here. So you will have bare steel in this area.

MR. HAWKINS: Well, this whole area through here is bare steel, right?

THE WITNESS: Yes.

MR. HAWKINS: Now I have got this face exposed. Let me understand this. Ideally I would have this face exposed, which is top coat, and I would have this face exposed, which is primer.

THE WITNESS: Yes.

MR. HAWKINS: This is feathered back, right, and you are going to have a little bit of a mottling right there at the interface between the two, right?

THE WITNESS: Yes.

MR. HAWKINS: Okay. Now how am I going to not -- I mean ideally we would want to fill in this area right here just like that perfectly with primer and then we would want to fill in this area, right, with top coat? Wouldn't that be ideally what you would want to do?

2-15

THE WITNESS: Yes, ideally, but that is not the case of what is happening. It is coming back over here because that is the edge of the repair area, right there.

MR. HAWKINS: Right.

THE WITNESS: So it is actually being extended out, the inch and a half.

MR. HAWKINS: So you have actually got primer in here like this.

THE WITNESS: Yes.

MR. HAWKINS: And you are saying this is the area you are concerned with, right?

THE WITNESS: No. It is back here because, remember, this is where your 305 top coat is stopping right here. Then we are going an inch and a half ---

MR. HAWKINS: Because of overspray basically?

THE WITNESS: No. It is the fact that you are not masking off. That is what I am saying, you are allowed --

MR. HAWKINS: Oh, if you masked off, but I thought the inch and a half was this inch and a half here.

THE WITNESS: No, because there is your primer and there is your 305. That is where your 305 stops right here. So it will come out exactly an inch and a half. It is not stopping right there at the edge of your 305. It is going beyond the edge of the 305, you know, where you feather

2-16

back or sand it back and the 305 stops and goes back an inch and a half. So it is not stopping here, but it is going back further.

MR. JOHNSON: I guess my problem is that it would occur to me that QC would even have a bigger problem on this of identifying which areas. You said inch and a half is difficult for QC to observe, but this method also seems like it would be a little complicated also.

THE WITNESS: What, the method I am saying to you?

MR. JOHNSON: Right.

THE WITNESS: No , not really because what I am saying, and which they have been doing with the CZ-11 more or less, is that when you do this, just looking at it from above, you have primer right here and then you will have a very small ring of exposed steel and then you will have 305. That is after the repair has been performed. They will have a repair area like that and bare steel with 305 going around it like that.

Then they will apply CZ-11 over this entire area like this and then they start sanding back. They keep sanding back until they find bare steel with CZ-11 in the middle of it. Then when they have gone past the 305 and hit bare steel, they know that the CZ-11 is not over the 305, they are on bare steel and they have gotten to the point

2-17

where there is no CZ-11 over 305.

MR. HAWKINS: All right. So I basically understand your concern to be, and I think we have about beat that one dead, your concern basically is that the method that they are using to effect repairs is not acceptable because of the resulting systems that would leave a primer over the top of a final finish coat in roughly an area of one and a half inches in width and varying circumferences.

THE WITNESS: Yes, but I would like to emphasize that the repair area as stated in that paragraph deals with an inch and a half. It seems very, very small, but when you consider all the hundreds of repair areas that just happen daily, it amounts to quite a lot of square footage of coatings.

Also, I am giving this example to use to complement the other examples I have. The very first example we have already discussed is more or less a repair area and a sequence of coatings is unverifiable. So this example, plus No. 2 and plus the other examples I am just trying to prove a point that repair areas, they are disregarding the sequence of coatings.

MR. HAWKINS: All right. I understand then. Do you have any further questions, Claude?

MR. JOHNSON: No.

MR. HAWKINS: All right. Let's move on to

1-18

statement 3 then, DCA No. 17,142, Revision 2, calls for Carboline 305 to be applied over another manufacturer's epoxy primer. I questioned Brown and Root coating engineer, [redacted] whether this was a qualified coating system. [redacted] explained that it was the contention of CPSES that because the primer was a qualified coating and the top coat was a qualified coating, then the two coatings together were considered a qualified system. I disagree with this assumption and believe that only through qualification testing can this system be considered as qualified.

Could you tell me again in your own words what [redacted] told you when you approached him with our concern regarding 305 being applied over another manufacturer's primer?

THE WITNESS: I asked him what was the primer on the manipulator crane and he told me he thought it was an ameron epoxy primer. He then said that is the contention of Comanche Peak and that since the primer is a qualified coating that the top coat we are applying is a qualified coating and the two coatings together is therefore considered qualified.

BY MR. JOHNSON:

Q Were the patch adhesion tests that were required in the disposition of DCA 17,142 performed?

A Yes. I performed them.

2-19

Q You performed them, okay.

In fact, I looked at some of them and I had a little question. But, first, let's get to the adhesion tests. How did they turn out?

A They were acceptable, I believe. The minimum requires 200 and they were reaching 400, 500 and 800. Those are good values of an epoxy system.

Q Now on each inspection report on Item 2 though you checked unsatisfactory on repair work complete and documented per QI/QP 11.4. Why is that? I couldn't understand that exactly.

A First off, my supervisor told me to check it Unsat. That is [redacted] Second of all, it says repair work completed and documented. At this point you are performing a patch test not of the total system, but of the primer only. So at that point in time the repair work could have not been completed.

Q Okay. So that was basically a method to get you back to it that it wasn't repaired in the exceptions log basically?

A Right. This is just documenting the patch test only, but not the repair work.

Q In your mind was something more than these adhesion tests required?

A In my mind I would think that you would have to

2-20

DBA qualification tests to qualify the entire system.

Q And we are back to that same question that I asked you before. What attributes would you be looking for when you modify a system in that way? Would you be looking for the irradiation testing, the DBA testing or would you just be looking for intercoat adhesion?

A YOu would be looking for the entire testing, that the panels had been irradiated and DBA tested.

Q Could you give me some kind of reason why you think that way?

A Well, you are making an assumption that this coating is going to survive DBA conditions without the testing. Here you have no idea what the compatibility problems are going to be under LOCA conditions.

Q Compatibility problems with regard to ---

A I don't know if anybody can answer that question.

Q So your concern then is more along the lines of say a chemical type of incompatibility between two manufacturers' coatings?

A Exactly, right. But whatever that compatibility problem , it is just theoretical and it is just a guess at most. You don't know what the problems are going to be until it is actually tested. You have to prove it is going to work.

Q I am still having a little trouble perceiving

2-21

exactly what your concern is other than they didn't do the testing in accordance with the N-101.2. In other words, I can't exactly understand why you feel that all that testing is necessarily isn't necessarily still required. The reason is is because I am looking at a finished system and understanding what irradiation tests will give you and what DBA test results will give you, and I am having a problem understanding why those tests would have to be performed again and why the adhesion test wouldn't be enough.

A I don't understand what you mean by the word "again." When were they performed?

Q Okay. You are saying that even the primer itself of the top coat itself were never irradiated?

A I am saying that the total system that they are using, the top coat on this primer, were never performed. You have Ameron's primer with Carboline's top coat and I would like to see some sort of evidence that it is going to pass a DBA test.

Q All right, and that is really the bottom line again.

A Exactly.

MR. HAWKINS: I understand that and I think we can look into that pretty easily.

end 1

MR. HAWKINS: Do you have any questions on that one, Claude?

MR. JOHNSON: Well, just back to, he said these tests were not performed.

BY MR. JOHNSON:

Q How do you know that for a fact?

A I asked [redacted]

Q And he said they had not been performed.

A He didn't say that. He told me their contention was that the primer was the qualified coating system. The top coat was a qualified coating system. It is their assumption or they believe that the coating system together is therefore qualified. He did not indicate they had test data.

Q Or he didn't indicate it to you.

A No. I am not in a position to ask for him to present the data to him. I am asking you to look into it.

MR. HAWKINS: We can do that.

THE WITNESS: All I have stated here is that I disagree with his assumption, and the NRC should look to see if he has the data.

BY MR. HAWKINS:

Q Okay, and you disagree with his statement to you that all that is required is patch adhesion tests. You think something more than that is required.

A Yes.

Q You think all the tests in accordance with ANSI 101.2.

A Sure, sure.

Q I understand that.

Let's move on to Number 4. You know, we will only have 11 to go after this one.

BY MR. JOHNSON:

Q Okay, No. 4 here is DCA 12,374, Revision 1. This DCA allows for Imperial 1201 to be applied over Carboline CZ-11. Notice the circled revision which states, "Although not required, a skim coat of Ntec 11S or 11 may be applied over the zinc primed insert to facilitate construction. This is a blatent example of the sequence of coating systems being distorted so as to facilitate construction without regard to verifying the coating system for its suitability to design conditions."

Could you explain for the record what is a Richmond Insert?

A Well, I am not a civil engineer. I believe it is the insert that goes into concrete structures where items are screwed into them or bolted into them. They have like a flange that protrudes out of the concrete substraight, and the flange is usually maybe about an inch and-a-half in radius, and within the insert you more or less screw a bolt into them.

Q Approximately what size area are we talking about here now?

A Maybe about four or five inches in diameter, something like that.

Q Okay. I guess then the understanding is -- at least my understanding is -- that the process of applying Imperial 1201 over CZ-11 on the inserts is your concern; is that correct?

A It deals with this entire example on the page, their sequence of coatings that I am asking whether or not they have been DBA qualified. Do they have data that supports allowing 1201 over CZ-11.

Q Okay. But you understand your statement that the application of skim coat of Nutec 11S or 11 is a blatant example of the sequence of coating systems being distorted so as to facilitate construction.

I mean, you made a pretty strong statement on this particular case.

A Do I understand in what way?

MR. HAWKINS: We don't understand.

BY MR. HAWKINS:

Q I guess when you said it is a "blatant" example of the sequence of coating being distorted you are basically saying, again, that that particular system applied in that way on the Richmond Inserts has not been qualified properly,

in your mind.

A Yes, that's right. They even come out and say that it may be applied over zinc primer, zinc primer insert to facilitate construction.

The way they have expressed this, "to facilitate construction" concerns me. Well, here again I just question whether or not this system has been qualified.

BY MR. JOHNSON:

Q Okay, one other thing. Do you know of any cases that there are some problems with this particular application? Has anything peeled, cracked, or anything as far as these inserts are concerned?

A Well, what has happened is, I don't have the NCR in front of me. But one of the after effects of allowing them to do this is that not only do they apply the 1201 over the Richmond Insert but they have managed to put duct tape over the insert itself if there is a hole in the insert. They put duct tape over the hole in the insert, and they come back and apply the 11S and 1201 directly over that.

So, when you look at that insert it is no longer there. I mean, there is no hole, there is nothing there. All it is, is a concrete wall with a white 1201 top coat on it. So, you can walk up there and tap it and you find a hollow sound where there is an insert.

Q So, you are saying they put masking tape over the

insert.

A Yes.

Q And then come in and put the 1201 over top of the masking tape.

A Well, either 1201 or probably 11S, then 1201. So, it's a rigid coating system but you have a hollow insert behind it.

So, that is just one of the small problems with this. This is an after effect of it. I am actually questioning whether or not this coating system or sequence has been DBA qualified.

BY MR. HAWKINS:

Q And that system is CZ-11 and 1201.

A Right.

MR. JOHNSON: Do you have any more questions on that?

MR. HAWKINS: No, I don't.

Why don't we do one more, Number 5, and then we take a fast break?

BY MR. HAWKINS:

Q I am reading from your statement again, "Construction Procedure CCP-30A allows for the application of Carboline 305 topcoat over Ameron D6 primer. I question whether CPSES actually has acceptable test data of panels of this system which have been radiated and DEA tested."

To just restate it again, your concern is the same

as you have expressed before, except in this instance it is 305 topcoat over D6 primer.

A Exactly. All these examples on this page more or less go back, relate to the same question I have. I am just trying to provide examples of a fallacy in the writing of these procedures.

This deals with the same thing and to my knowledge -- I have not seen this done since I have been on the job site, although they did have probably 400 or 500 gallons of D6 primer on the job site. So, it is something, I think, you should look into.

Q All right.

A And it is specified.

Q You did qualify, though, and say to your knowledge you did not know if it had been done.

I used to be a QC inspector a long, long time ago -- well, actually it is not that long ago. I was never in a position at that time to know whether some of these tests had been done.

Have you approached some of the engineers and asked them, say, "Hey, have you guys done these tests," or what do they tell you?

A The reason I have written this letter is because I am not allowed to do that.

Q You are not allowed to what?

A Ask those questions.

Q Would someone in your position routinely be in a position, though, to know about this sort of thing?

A I think at some job sites, in fact the last one I was at or worked for, yes. Inspectors were more than welcome to ask these questions and I provided them the answers. But at this site I am not allowed to. I have reasons to think they do not have test data for the system and that is why I am asking for somebody to look into this and pursue it.

MR. HAWKINS: All right, that's fair enough.

Why don't we take about a five-minute break and then come back and start with Item 6?

(Whereupon, at 2 o'clock p.m. a short recess was taken.)

MR. HAWKINS: I think we have got enough on that one to deal with it. I have got it back in the room and I don't have it here. That is what I am looking for.

MR. JOHNSON: That is all I have.

MR. HAWKINS: Do you want to move on to 7? That is related to 6. Let me continue reading from your statement.

This NCR reveals that cracking of tne concrete coating system directly over plastic rebar chairs, as observed by QC inspector and myself. This cracking over plastic rebar chairs has been observed in numerous locations throughout the reactor containment building, Unit 1. Note that the disposition states the cause as excessive stresses in the drying and curing of the coating. I believe the cracking results from stresses imparted on the coating which are greater than tensile strength of the coating. Repairing the cracks is not likely to remedy the situation which caused the cracks.

I am going to ask you some very remedial type questions.

By MR. HAWKINS:

Q Cracking and coatings are unacceptable; is that correct?

A That is correct.

Q Your site specifications and procedures require

4-2

that any observed cracking be repaired; is that correct?

A That is correct.

Q Are you aware of any instance when a deficient coating system, and I am referring to any deficiency, not only cracking, where the deficient system was observed and not repaired or not identified for repair?

A Sure. I have seen a lot of those cases. You know, I see cracks in the coatings everywhere, but wherein it is still in the construction process. So they may be repaired at a later date.

Q Okay. Is there a final inspection that is planned which will identify and correct those deficiencies later on? In other words, there is not a hole in the system, is there, to allow them to get through into final phase?

A That is my understanding, that they will have a final inspection on all surfaces.

Q Okay. There have been though to date in this NCR that you referred to as an example of it where cracking had occured and was subsequently repaired? Is that correct?

A Yes.

Q How have those repairs held up? Have they cracked again?

A I would think not, but it is hard for me to answer the question because I don't perform surveillance of repair areas. I am not a concrete coating inspector.

4-3

So all I am seeing are cracks in the coatings during my backfit inspections of concrete coatings. I have been performing backfit inspections but not actually in process ongoing inspections of the concrete coatings. So there is no way for me to really perform surveillance of that situation.

Q All right, but through your backfit inspections when you identify something that is cracked and therefore unacceptable or non-conforming, do you identify it on an inspection report?

A Yes.

Q And then that inspection report then has to be closed out and the repair has to be made because you have in effect marked it unsatisfactory, right, because it is cracked?

A No. We don't identify cracking on inspection reports for backfit inspections. We have three or four criteria and we are not identifying any visual defects whatsoever. All we are doing is determining the dry film thickness of the top coat with a clip gauge and performing an adhesion test with an elcometer.

Q So let me understand this. You are doing your backfit inspection and you have got a crack in the concre coating that is 3 feet wide and 100 feet deep and you say, well, it passed on elcometer and the other attributes

4-4

that I am supposed to be inspecting to. So therefore I am just not going to turn my head. Is that what you are saying? I know I have overstated the crack width.

A So I therefore Sat that area up.

Q You do?

A Exactly. I sure do.

Q You mark satisfactory?

A Yes, sir, I do. That is what we have been instructed to do. We are not to identify cracking or blistering or anything. It just goes unreported and they are supposed to catch it on the final walkdown.

Q All right. But at least one instance did occur where some cracking was observed and NCR C83-01982 is a testament to that at least.

A There have been quite a few more than just one instance. There have been bunches.

Q Okay, but there has at least been one?

A Yes, sir.

Q And that is the one you gave me here to look at?

A Right.

Q So some of the cracking has been identified before this final walkdown?

A Yes, sir.

Q Why was this done if the final walkdown is going to do it?

4-5

A Well, they are more or less in the repair process of repairing coatings or going back and doing all the concrete over. To what extent, I am not sure, but my understanding is that these areas have already been repaired. These areas that are addressed in this NCR, they have been repaired at this point.

Q Okay. Do you know how those repairs have held up? I asked you this earlier, but have you seen any of them?

A Yes, I have seen one area and there is no cracking at all. You know, they are good coatings, they are intact and no cracking has resulted from drying and curing of the concrete coating.

Q Or as a result of a rebar chair or something else being in there.

A Well, I would like to get back to what I am trying to say here in my statement.

Q All right.

A The disposition says that the cracking is due to excessive stresses in the coating during drying and curing. To go back to what you just said, I have not seen any cracking after the application of the coatings. In other words, there has been no cracking as a result of drying and curing that has resulted immediately after the application, you know, within a week or two weeks or whatever.

4-6

What I am saying is that repairing these cracks is not likely to remedy the condition if the cracks are resulting from stresses imparted on the coating material. In other words, there are residual stresses built up in the concrete coatings and the coating is losing adhesion to the substrate as a result of being over plastic rebar chairs and just repairing the area is not going to repair or remedy the condition.

Q Let me understand then. But wouldn't it crack again then if it were over this?

A Yes.

Q That is what I asked you. Have you seen them crack again?

A Yes, but what I am saying is that it is not going to occur in the next month or two months or three months. These coatings have been there for three or four or five years or so. So the cracking may result after this plant is already on line in 1987.

Q I see. You are saying it is a time dependent cracking then as a result of this.

A Exactly.

MR. HAWKINS: Do you have any questions, Claude?

MR. JOHNSON: I just want to make it clear in my mind that these rebar chairs from what I can gather, and expecially in the walls, there are quite a few of these things.

THE WITNESS: There are many of them.

BY MR. JOHNSON:

Q So what we are saying here then is ---

A You have like a matrix system like on ceilings and they will be every four or five inches apart. They would be just rows of them like that. You just determine how the spacers are and everything.

Q Have you done some type of analysis to determine or assume that this is due to stresses caused by these plastic caps?

A No, but what I have stated here, that is the result of cracking of almost any non-metallic material. Cracking results when the stresses are imparted on material that are stronger than the tensile strength of the material itself. That causes cracking and that is what is happening here in my opinion.

Q So that, in your opinion, this is what is causing the cracked surfaces?

A Exactly. And like I stated, if it was cracking as a result of stresses during the curing and drying of material, it would have shown up at least within a week or so, probably hours after it was drying or something, but there is no cracking there and I think it will happen in the distant future, like five or six years or something like that, or four years.

4-8

Q Well, let me ask you this. Since you are assuming and it is your belief that this is what is causing the stresses, with your background and all, what do you feel would remedy this case since you have quite a few rebar chairs out there? What do you feel could remedy this thing?

A Well, probably remove the plastic chairs or at least supply some sort of concrete grout over it or something just to give it a better substrate for the coating to adhere to than just raw plastic.

In item 6 what I am trying to say is that even when you have radiation, heat temperature and pressure, if it cracks it goes through the coating. When the radiation hits the plastic, the plastic is going to degrade and it is going to lose molecular weight and you are going to lose the substrate entirely and that coating is going to fall out.

Q Okay. One other thing and then I am through here. Is that the whole purpose of the coating system, to help eliminate some of the radiation from getting into the concrete?

A Yes.

BY MR. HAWKINS:

Q What size cracks are we talking about?

A Well, these cracks are generally larger than the hairline cracks I usually see in concrete. They are

usually measuring I would say maybe about a 32nd of an inch. They are pretty wide cracks.

Q How long?

A Well, like stated in the NCR, they are usually circular in appearance and actually go around the rebar itself. I mean it is very obvious it is the rebar chair. There is not a whole lot of doubt about it. They are circular in nature and are pretty large cracks.

Q The rebar chair itself is only the exposed plastic pieces, you know, no bigger than the end of this pen right here, about like that, right?

A It is maybe a little bit larger than that.

Q Just a little.

A Yes.

Q You are saying there is a crack around the outside of that?

A Yes.

Q What did you say, it is 3/8ths inch and ---

A 32nd.

Q 1/32nd?

A Yes.

Q How deep it is, all the way to the substrate?

A Yes.

MR. JOHNSON: Could I visualize this one more time here and then I will stop and I will get off of this

4-10

subject. A rebar chair, if I am not mistaken, it may be about that long or so, am I correct, or is it just running length-wise of the whole wall or slab?

THE WITNESS: Well, it is usually the ceilings that I have seen them in and it will be more or less just a matrix, you know, like 20, you know like five spaced three or four inches apart, and maybe about 10 or 20 rebar chairs long. So it is just a matrix going along ceilings.

BY MR. JOHNSON:

Q How many plastic caps would you say, because what I am looking at here is each plastic cap with these particular stresses around it that is showing completely, I mean is it evident and can you pinpoint some exact locations and show us these areas?

A Sure.

MR. HAWKINS: Are there some in the field now that we can see?

THE WITNESS: That is a good question. It depends on whether or not they have been repaired. I mean you can go up there and, yes, I can show you where they were. I can't show you the cracks because the cracks have been repaired, but I can show you where they are.

MR. HAWKINS: All right. Why don't we plan on doing that somehow. You want your confidentiality maintained; is that correct?

4-11

THE WITNESS: I would prefer it. Yes, I would prefer that.

MR. HAWKINS: All right. What we will try to do is get into the field with you and some other inspectors and we will ask these questions and maybe you can show us exactly where they are. Are you willing to do that?

THE WITNESS: Yes. The fellow that reported this NCR condition, he is a [redacted] I know of a couple locations, but he knows where more are.

MR. HAWKINS: Do you think he would be willing to show us?

THE WITNESS: Yes.

MR. HAWKINS: Very good. We will talk to him then.

Do you want to move on to No. 8?

MR. JOHNSON: Okay. The statement is a little lengthy and I am going to quote it right out of the text here. It deals with Attachment No. 9, page 6 of 13 of CCP-30, paragraph 4.1.3. It states:

. . ."shadows or tight residue of primer which may remain in the profile of the previously prepared substrate is acceptable. I question the integrity of an inorganic

zinc primer which has been applied over a steel substrate with metallic zink residue in the profile of the steel. Paint holds to the metal surface by two mechanisms: chemical attraction or adhesion and by mechanical anchoring. Inorganic zinc lacks the multiple functionality of reactive sites along a polymeric background such as an epoxy and therefore relies on mechanical anchoring into the profile of the steel. Accordingly, if the profile is already occupied with embedded metallic zink residue, then the fresh coat of zinc primer will not be capable of obtaining optimum anchoring into the profile. This allowance of tight residue of paint is a phrase taken from definitions in the SSPC standards. Although this may be suitable for chemical coatings, it is not for metallic coatings which need a clean substrate for anchoring and must have a clean substrate for its anodic properties. That is, when CZ-11 is applied over residual carboline 305 or 191 which remains in the steel substrate, not only are there problems with the adhesion, but because the metallic zink is now isolated from direct contact with the carbon steel substrate, then galvanic action fails to occur rending the metallic zink useless. This condition is allowed at CPSES and occurs frequently. It is used to great advantage by the construction company to reduce man-hours spent preparing steel.

There were a lot of words in there and I have

4-13

got a couple of questions I want to ask you on this.

BY MR. JOHNSON:

Q What quality of substrate preparation is being used at Comanche Peak as far as SP-10 or SP-5?

A Well, the cleanliness is an SP-10.

Q An SP-10?

A Yes.

Q That is near white?

A Yes, it is near white with the reservation or with the allowment that they allow zink residue in the profile of the steel which at that point no longer is an SP-10.

Q What do you think should be used, SP-10 or SP-5?

A I think it should be an SP-10.

Q Why?

A Well, I mean an SP-10 is definitely clean enough for the steel. What this paragraph is referring to there is allowing zink residue to remain in the profile of the steel substrate, and at that point it creates problems with the adhesion of the new coating to be applied as well as renders the new coating useless.

Q Have you read SP-10 here?

A The definition?

Q Yes.

4-14

A I have read it once or twice.

MR. HAWKINS: Your concern is then that zink is left in the shadows or actually it is zink primer and not mil scale oxides and that sort of thing? Is that basically your concern?

THE WITNESS: Right.

BY MR. JOHNSON:

Q Do you know which type of substrate preparation that the testing for coating systems qualification was performed on?

A It was qualified on SP-10.

Q Did you review the test results?

A For Carboline?

Q Yes.

A Yes, I probably did all the qualification testing for Bechtel Corporation.

Q So your biggest concern is just the residue of the primer then left in the profile is what you are saying?

A Yes, that is my concern for this example.

Q Okay, because as I read it, the near white blast cleaning, it specifies for the substrate except for very light shadows, very slight streaks or slight discolorations caused by rust, stain, mil scale or slight tight residues of paint or coating that may remain.

A Yes.

4-15

Q And you agree that SP-10 is sufficient. So I guess I am confused on why you are stating this now when SP-10 specifies this really.

A Well, first off, I think it might say only five percent of the paint, or five percent of every square inch is allowed. I think that might be in there.

MR. HAWKINS: Yes, it is.

THE WITNESS: You know, that is here nor there. I am not real concerned about that. It is like I am trying to say here, that this is good for a chemical type of coating, but this is not what the inorganic zink is. It is a metallic type of coating and metallic meaning it has a no adhesive type of properties, chemical adhesion.

The only way it attaches to the surface is by mechanical anchoring into the profile. If you have that profile already occupied by residual inorganic zink primer, then that coating is not going to adhere to the substrate.

BY MR. JOHNSON:

Q Are you disputing SP-10 here then? What are you saying?

A No. The SP-10 is specified in our procedure. Tha is good and there is no problem with that. I am disputing that in our procedure, paragraph 4.1.3 states that shadows or tight residue of primer which may remain in the profile of the previously prepared substrate is acceptable. And

4-16

when you look at steel that is prepared at Comanche Peak, there is quite a bit of inorganic zink primer that is still in the profile in the pits of the steel. And if your pits are still occupied, then how is that inorganic zink, the new coating going to attach to the substrate?

MR. HAWKINS: Quantitatively though it can't be more than five percent of the surface area in accordance with SP-10?

THE WITNESS: No.

MR. HAWKINS: I am wrong.

THE WITNESS: That is what the SP-10 says, yes, five percent, right, but we are not doing that. We are allowing a hundred percent.

MR. HAWKINS: Let me understand this. You are allowing zink primer tightly adhered to remain in a hundred percent of the surface area?

THE WITNESS: Well, that is just a figure of speech. The steel might look nice and the grading will be bare metal, except down in the actual pits of the steel you are going to have inorganic zink primer. When you look at it you will see a gray surface and you will see little gray dots on there, pinpoints of gray. That is where the pits are and that is where the inorganic zink primer is.

MR. HAWKINS: So you are saying they are not getting an SP-10?

4-17

THE WITNESS: No, they don't have to because they are allowed to have tight residue primer in the profile of the previously prepared substrate.

MR. HAWKINS: I see.

THE WITNESS: So they are saying SP-10, but they aren't actually getting it.

MR. JOHNSON: Well, wouldn't that be an NCR condition then or isn't this unsatisfactory?

THE WITNESS: It is not an NCR condition and it is not unsatisfactory because they are abiding by the procedure. That is the procedure. It says tight residue primer may remain in the profile. So what can I do about it?

MR. HAWKINS: But it doesn't follow. It says that you can allow it to remain in here, but you know they are committed to SP-10 and so you know it can only remain in five percent. I don't understand what the conflict is.

I am probably missing the point, but explain to me because the specifications in your procedures very clearly say you are going to do an SP-10 air white clean, right?

THE WITNESS: Yes, sir.

MR. HAWKINS: And your procedure says the same words right out of that SP-10 that shadows or tight residue of primer may remain in the profile.

4-18

THE WITNESS: Yes.

MR. HAWKINS: But SP-10 goes on further. That is not the only condition that it puts on the acceptability of the prepared substrate. It goes on further to say it can only be five percent of the area that those tight shadows are left.

THE WITNESS: I know, but it also has a disclaimer that says shadows or tight residue of primer which may remain in the profile is allowed.

If you will read our current procedure, which I have not attached, but it says exactly that, that we are not restricted or limited to the five percent. It can be 100 percent of the substrate.

MR. HAWKINS: What says that?

THE WITNESS: Our current procedure. I mean the procedure I have attached.

MR. HAWKINS: You mean the CCP-30?

THE WITNESS: Well, I have given you CCP-30, but I am referring to QI/QP 11.4-5. If we had a copy of that, that would make it even more clear.

MR. HAWKINS: They have instructed you to interpret that literally then and not what obviously should be implied from the SSPC?

THE WITNESS: Right.

MR. HAWKINS: I understand that and we have got

4-19

to look at that. I hadn't looked at that twist of it before.

Here is 11.4-5.

(The document is shown to the witness.)

MR. HAWKINS: Maybe you can show me exactly where your concern is.

(Pause while witness examines document.)

THE WITNESS: Okay. It says: In addition to the five percent of tight residue of paint or coating which is permissible, shadows or tightly adhering residues of CZ-11 may remain over a hundred percent basically is what it says.

MR. HAWKINS: All right. Just for the record, that is procedure No. QI/QP 11.4-5, Revision 27, the note on the bottom of page 7 of 27.

(Brief pause.)

MR. HAWKINS: All right, are you ready to move on?

MR. JOHNSON: Yes.

MR. HAWKINS: No. 9, and I am reading from Cory's statement, QI/QP 11.4-5, paragraph 3.2.4 states that: Only two overcoats shall be applied. I question the integrity of three coats of inorganic zink primer. This coating consists of approximately 85 percent metallic zink. It lacks chemical attraction or intercoat adhesion with itself.

4-20

For this reason I believe that the primer when applied with three coats will fail under LOCA conditions and should be verified for us by irradiation or DBA testing. This allowance of three coats is used to great advantage by the construction company because it allows the painter a second and third chance to obtain the required dry film thickness before it is rejected by QC inspection.

I am sorry, that was yours. You can ask the questions.

(Laughter.)

end 4

MR. JOHNSON: Okay.

BY MR. JOHNSON:

Q Well, I am really not sure of what you mean by regarding the three coats of inorganic zinc because if I am not mistaken here that procedure quotes two coats, not three.

A No. It says, "Only two over coats shall be applied. That means you have a primer and then two over coats of primer. So, that's three.

Q So, you are saying it's the primer?

A Yes, sir.

Q And then two over coats.

A Of primer.

Q Okay. When were the three used, and where?

A It has been used every day since I have been on site. I mean, it happens every day.

Q You said, "It is used to a great advantage of construction." How is the use of three coats of primer used to great advantage by the construction company?

A For example, the first time they apply it, they only obtain about half of a mil of dry fill, taking this first primer. With the second one, they might come up with one mill or so of thickness and the third one, you know, at that point you reject it or whatever.

In most instances you are only allowed to apply one coat for the reasons I have stated. Here, they are allowed to apply three different coats just so that they can

obtain the required thickness, the minimum required thickness.

Q In your own mind --

A In other words, if they didn't obtain the minimum applied thickness, they would have to remove the entire coating. They would have to go back down to bare substrate. That would be a lot of man hours preparing the steel over. Here, they just brush on another coat.

I am questioning whether or not they have ever qualified two or three coats of zinc primer.

Q So, you are saying DBA qualified again here, we are talking?

A Yes.

Q In your own mind, what is the role of a QC inspector

A To enforce procedures.

Q Okay. What is the relationship of a QC inspector to construction people?

A We are like the policemen on the job site to the crafts. We enforce procedures and we more or less perform surveillance, make sure they are doing the job in accordance with the procedures.

Q So, your biggest question here is whether or not the primer and these two over coats of top coat has been DBA tested.

A Yes, sir.

Q Have you had any of these systems fail so far? I

know you perform an adhesion test. Have you had any of these systems fail under this, that you know of?

A No, that's not my concern whether or not they are going to fail under ambient conditions after only six months or one year, the environmental conditions. If they fail, it is going to be twenty years from now under LOCA conditions, and that is what I am concerned about.

Q Okay. Your concern also, you do perform adhesion pole tests on these systems.

A Only on backfit inspection. We don't perform pole tests during on-going inspection or after application.

Q You don't perform anything then, is what you are telling me? I mean, what do you do?

A Well, during an inspection we just perform surveillance or monitor certain types of information before the application of coatings. For instance, we will gather information such as the batch numbers of the paint; we will determine whether or not the coating applicator is certified; we determine if the substrate is prepared correctly; we determine ambient conditions, the temperatures, the dew point, et cetera.

We make sure the area is acceptable. We make sure that the pot is clean.

MR. JOHNSON: Do you have any more questions, Frank, on that?

MR. HAWKINS: No, I don't have anything on that. Are you ready to move on to the next one? That is No. 10.

BY MR. HAWKINS:

Q QI-QP-11.4-5, paragraph 3.2.2.3 states that, "Surfaces that have been power tooled with 3M Clean-n-Strip, 80 grid or coarser flapper wheels, standing discs, roto peans or equivalent, provide acceptable surface profile.

"I question whether CPSES has test data of irradiated and DBA tested panels which have been prepared using the specified power tool methods. These methods do not necessarily provide a one mil profile depth, as documented on numerous inspection reports prior to the recent deletion of the requirement to determine profile depth during QC inspection.

"The above-mentioned methods provide a smoothing or polishing action rather than a penetrating action as obtained with sand blasting or with a needle gun. Also, the profile that is obtained occurs in a sparse pattern and not a densely packed pattern. It is interesting to note that not only do QC inspectors no longer determine the profile depth, but never observe what power tool methods are used because our only hold points are immediately prior to coating application."

Could you clarify to me when these power tool cleaning methods that you refer to are used?

A I am not sure I understand your question.

Q Let me give you an example. Are they used to prepare a piece of raw steel and bring it to SP-10, or are they used to take a piece of steel that has been shop blasted and primed, and remove the prime coat?

A Well, it's used for repair areas to remove the prime coat or damaged systems.

Q You are not using power tool methods to try to get an SP-10 on raw steel, right, that has never been sand blasted?

A No.

Q Okay. In your mind, what are the two attributes or what are the attributes -- not two, necessarily -- that you would be looking for after steel, the substrate, either power tooled or --

A Well, at this point all I am looking for is to see how clean the steel is.

Q Okay, you are not looking at profile depth at all.

A No. No.

Q And I guess your basic question is whether or not the minimum of one mil has been maintained because of the polishing effect of the power tool method.

A Exactly. Well, yes.

Q I am real surprised that you guys don't do profile depth.

A So am I because that is probably the most important

thing you can do for inorganic zinc primer. But that has been deleted from our procedure. My understanding is, in the past we used an El Cometer roughness gauge to determine the profile. Then because there were so many "unsat" reports they started using a dial depth gauge to determine profile which in my opinion is not the best method to determine profile.

Finally, there were so many "unsats" from using that, they just completely deleted the use of any instrumentation or any determining of profile.

I would like to put this --

Q Before we do that, let me make sure that I understand then. You don't determine profile depth when an area has been prepared by taking the primer off with a power tool.

A Right. With sand blasting, we do. But this is only for -- well, I shouldn't say that. .

Q Well, we are looking at this procedure.

A Yes, that's 11.4-1.

Q But this very clearly says, "For blasted surfaces" that you are going to do it.

A Okay.

Q But you are saying that --

A For power tool cleaning.

Q -- for power tool cleaning you never do it.

A Yes.

Q Is that not an inspection attribute on your inspection report?

A Yes, sir, and it is N/A. We just put N/A because we no longer do that any more.

Q Well, where was it deleted in here? Maybe that is what you are going to give me.

A There used to be in that paragraph 3.2.5-3, there used to be a requirement there in a previous revision that it was required to determine the profile. But they have added this new paragraph that says surfaces that have been power tooled with these tools have provided an acceptable surface profile.

So, we no longer have that requirement to determine the profile. That is what is going on.

Q Now, what did you want to introduce?

A Okay. I wanted to bring to your attention, go back to AS-31, the coating specification, paragraph 7.0-B-2. This involves fill touchup. It is talking about when sub- is exposed.

MR. HAWKINS: For the record, let me say we are looking at Specification AS-31, Revision 1, page 8. That is section -- what did you say - 7.0-B-2?

THE WITNESS: Right.

BY MR. HAWKINS:

Q What is your concern on that, now?

A What I am trying to point out, we are talking about the profile. I am saying in one instance that we are no longer required to determine the profile as fill. But also, what they are saying is that we have various tools here. They say the 3M cleaning strip, 80 grid or coarser flapper wheels, sanding disc, roto peans and equivalent provide acceptable surface profile.

There, in that paragraph, they say, "Yes, you can use roto peans, flapper wheels, whatever. But it also says that after disc grinding has been performed you come back with a needle gun to roughen the steel. That is a requirement in the coating specification.

That is not done any longer at Comanche Peak. There is no roughing of any profile. All they are doing is cleaning the steel, leaving the inorganic zinc in the profile, and no roughening of a substrate is being performed with a needle gun.

Q You are saying that the provisions in the specifications have not been properly translated into the procedures.

A Exactly.

Q You know, I am a little confused. Is the needle gun that you are referring to the needle gun that I am thinking of, with all the little -- it looks like a squid?

A Yes.

Q I'm rather unsure in my own mind whether I am comfortable with the use of a needle gun for that technique. How does that work, good, bad? Unless it were good, I would not put it in the spec.

A It works -- well, from my limited experience it works very well and it gives the profile. You know, once you have polished the surface with a grinding wheel you come back with the needle gun and it has a certain penetrating action and provides pits in the steel.

Q For some reason to me it seems like it wouldn't have that necessary penetrating action that you would get with an abrasive. But you say it does, and it has been checked. So, it does?

MR. HAWKINS: Do you have something on that, Claude? Go ahead.

MR. JOHNSON: Well, only on as far as I am looking at a field touch-up.

BY MR. JOHNSON:

Q The way I understand this particular thing, this particular seal is prepped and sand blasted in the shops; am I correct?

So, you have a required profile more than one mil anyway from that shop. So, when they shift down on repair, that profile is already established.

A Not if you come back and grind it down.

Q With what particular tool, are we talking?

A With a steel grinding disc. That is what they are using more than anything.

Q And what you are saying is, they are not roughening the surface back in.

A That's right, they are not roughening the surface at all. It was done in the past when we were checking the profile, when we were actually testing the profile with roughness gauges and whatever, and they were having to roughen the steel otherwise their inspection would never be passed. But they deleted that requirement.

So, you won't see a needle gun anywhere out there any longer.

BY MR. HAWKINS:

Q You said you were getting failures during inspection on that attribute.

A We did failures --

Q To your belief, is that why they deleted the requirement for it?

A Yes. That is my own opinion.

Q Well, that is what I asked you for.

A That is my opinion, that that was a direct result of taking that out of the specification, just so that they would have inspections passed because needle gun is time consuming.

Q Just for my own edification, could you go through some of the points for me -- I know we have been through some of them before -- are there four or five that you are responsible for during your inspections. You can't go beyond that without having a QC inspector there?

A There is only one hold point and that is immediately prior to coating application. It is not before steel preparation. It is only immediately prior to coating application, meaning that if you are going to do a primer repair inspection, the steel will already be prepared. You have bare steel there or maybe even two coats of inorganic zinc on the substraight.

At that point you go through your inspection routine, the different attributes you are looking at. But as far as hold points, there is only essentially one.

Q That was probably an unfair question because there is more than one condition, I guess. There is raw steel preparation, and then there is a repair or --

A Recoat.

Q There is recoat, yes, that is being referred to in the polishing action.

A Then you have your finished coat repair which is checking the inorganic zinc primer, or there might be a finished coat already over there which you are going to have to recoat to build up the thickness.

Q Yes.

A Then you have a hold point for the final inspection. When your finished coat is cured for 24 hours, then you are going back to buy off that item, the coatings on that item. This is, I believe, only one hold point, the way I said.

Q All right.

MR. HAWKINS: I don't have any further questions on that. Claude, what about you?

BY MR. JOHNSON:

Q Where do we sum this up, they are cleaning this particular thing with a grinder. In the procedure I noticed several power tool methods.

A Yes.

Q Where, in here, has the grinder come into effect, I guess in your concern? We got on that disc thing. You have actually witnessed them clean and prep the surface with this disc is what you are telling me?

A Yes. Well, if not, a hold point is not for me to witness them during it, but it is something you observe when you are walking throughout the plant. You are seeing painters preparing steel, grinding steel down with a disc.

Q And you are saying this eliminates the profile.

A Yes. Either that, or it was never there. What I am saying, as stated, many, many documented cases where we are checking the profile and the item did not have any

profile whatsoever. I mean, this is a very well-known fact. Either they removed the profile or it never existed at all.

Q You are saying you checked this before.

A Yes.

Q Can you specify any particular item?

A Yes, I personally have reports on the polar crane, you know, where I would check the areas that did not have a profile, pipe hangers.

BY MR. HAWKINS:

Q And what happened on the polar crane when you identified an area that didn't have a profile?

This is an area that was previously shop prepared, supposedly, and primed, and you all power-tooled it back down to steel.

A Yes.

Q Then what happened, you identified it how?

A I "unsated" the inspection, told the foreman. He disagreed with me completely but it was still "unsated." They went and got a needle gun and roughened up the steel. I checked it again later that day and passed it, said, "Yes, you got the profile."

Q Okay, but you had actually verified it and could show the guy, "Look, right here is the result, it doesn't pass. So, you are going to have to do something."

And this is back when it was a requirement. You

are saying that now it is not a requirement any longer for you to check that.

A Yes, sir.

MR. HAWKINS: All right, how about another five-minute break? We have been going for another hour.

(Whereupon, at 3:05 p.m. a short recess was taken.)

6-1

MR. HAWKINS: We are back on the record.

We got to statement 11 and I am going to read from Cory's statement that he provided us again. DCA No. 18,489 allows a primer thickness of .5 mils. I question if CPSES has test data of irradiated and DBA tested panels with only a primer thickness of .5 mils.

Could you go through exactly the five readings per hundred square foot, and the ones with the average of three? Could you do it that way and what the requirement was basically to be within and .5 was out of?

THE WITNESS: It has been a while, but the minimum thickness at that point in time, you were allowed a low reading of 1.5 mils and a high reading or a maximum reading of 5.5. What you do is you take five readings per 100 square feet and you report the low reading, you report the maximum reading and you report the average reading. And 1.5 mils was probably the low reading, the minimum or the low reading he was reporting.

(Witness looks at document.)

Yes, the minimum spot reading.

BY MR. HAWKINS:

Q And the limits those tests have to be in now are 1.5 to 7?

A I believe that is correct, yes.

Q The inspection report that was generated, which

6-4

has test data of irradiated and DBA tested panels demonstrating the suitability of this film thickness.

BY MR. JOHNSON:

Q Could you restate your concern in your own words so I can make sure I understand what you really mean?

A It goes back to I believe it is the very first concern we dealt with, this coating system of 11S/1201/11S/120. What it is is it is like four different coatings that make up the total system and if you go by the allowable range for each coating system and add them all up, you will come out with over a hundred mils. That is part of the problem of using this so-called strange sequencing of the coatings, is that when you start piling one coating on top of the other, you come up with just an enormous film range, and I just wanted to bring that out. That is another problem with it.

Q Okay. Show me where you have come up with your over 100 mils. Maybe I am looking at this wrong. We talking about 4.3.1.2, and if you come down here and you add these mils up, the maximum, and now tell me where we are getting the 100 mils in there.

A Say, for instance -- well, let's go back. Okay, add the maximum for 11S, and that is 35 mils.

Q Okay.

A Add the maximum for 1201, and that is 16. Add

6-5

the maximum for 11S again, and that is 35. Add the maximum again for 1201 and that is 16 mils.

MR. HAWKINS: You get the resulting system.

MR. JOHNSON: Oh, okay, you totalled the total system.

THE WITNESS: That would be 102 mils for that first system.

MR. HAWKINS: Yes.

THE WITNESS: I think when we origianlly did it we looked right straight at what the procedure CCP-40 specified and didn't take into account the resulting system because of a repair which we talked about earlier in statement 1.

BY MR. JOHNSON:

Q Okay. So which manufacturer's system is this then?

A Imperial's.

MR. JOHNSON: I guess I don't really have anything else on this.

MR. HAWKINS: It is pretty clear. It is part of that other issue in statement 1 and we will have to address it as part of that.

MR. JOHNSON: Okay. Now we will move on to statement 13. This is quoted again:

I have become concerned when coatings are applied

6-6

to areas such as the reactor core cavity where no organic material can survive the high neutron and gamma exposure. The coating engineer apparently has never evaluated areas for the expected radiation exposures.

BY MR. JOHNSON:

Q Could you restate our concern pertaining to NCR C-83-00461?

A Well, obviously you are holding the NCR. So that concern has been addressed. I brought up this NCR back in it looks like February of this year and it was my concern then that the coatings within that area, well, that no organic material in this certain area will survive the combined total integrated dosage for gamma and neutron radiation which is true. This is a fact.

This disposition, this is no longer a concern of mine. I was just pointing out that here is a situation that they have applied coatings where it was totally uncessary. But as long as we are into this, I would like to pursue this matter a little bit farther.

The disposition, the last sentence says "In case of a LOCA water will flow into and not out of the reactor core cavity." I have a problem with that and I would like to bring that to your attention to maybe investigate that response even further because I am not convinced that that is a sufficient answer to my NCR. Water will flow out

6-7

of that reactor core cavity, and that is part of the problem. That is why I am writing this NCR because water is definitely going to flow out of there and it is going to flow back -- when water flows in that building, it is going to first flow to the lowest elevation, and that is the reactor core cavity, and when it fills up it is going to come back out and go to the containment sumps. So I think that should be investigated further.

Q So you are really not satisfied with the resolution is what you are saying?

A No, sir, I am not.

Q To you what is an acceptable method?

A What would be an acceptable response?

Q What is acceptable to you?

A I honestly do not know what an acceptable response would be, except to somehow -- you know, I have given this a lot of thought and I don't know how to resolve this. If they cannot somehow mechanically trap the coatings, or at least include those coatings in the total allowable amount of coatings to have failed, in other words, the exempt coatings law, they should probably restrict the coatings from all items in the reactor core cavity.

Q To your knowledge, do you know that they haven't performed some type of analysis as far as flow paths and this type of thing and taken this into consideration?

6-8

A I am of the belief that they have not performed any flow paths. I do not know that for a fact, but from -- well, my understanding is that they have contacted other projects and from that regard it is more or less that they have assumed that the coatings will not reach the containment sumps.

MR. HAWKINS: Who would we talk to in that regard? I don't know the engineer. What is his name, [redacted]

THE WITNESS: Yes, that must be it.

MR. HAWKINS: Okay, I just wanted to make sure we have a name that we could go talk to.

THE WITNESS: Do you understand what I am saying in regards to this?

MR. HAWKINS: I understand exactly what you are saying.

THE WITNESS: Because somebody came and asked me about it the other day and I had just sort of let it slip, or just let it go by. I was told not to pursue this any further by [redacted] because I told him I was not satisfied with the disposition. But I think the answer is totally unacceptable to me.

MR. HAWKINS: Who signed off for you here on the front?

THE WITNESS: It looks like [redacted]

6-9

MR. HAWKINS: Well, if you are not satisfied with the disposition, why ---

THE WITNESS: I never signed it off on the bottom or anything. In fact, I think the response or the answer is an insult to the question because the reason I wrote it is because the water is going to flow out of that reactor core cavity and they should either accept the coatings or strip them.

MR. HAWKINS: All right.

BY MR. JOHNSON:

Q And again you state in here that a test program should be established to assure that all testing required demonstrates that the structure systems and components will perform satisfactorily in the service as identified.

A I am citing Appendix B of 10 CFR 50 there.

Q Okay. But you are still not sure that this hasn't been done already, right?

A Oh, I know it hasn't been done.

Q You have proof of this?

A I have contacted Oakridge National Labs and asked them about it and they said no. It is not so much it is impossible, but it would be just so completely time consuming that it would take years for them to perform this test because the certain type of apparatus for testing neutron exposure, it has never been done before.

6-10

Q So we are talking not only about Comanche Peak but we are talking about other sites?

A Yes, sir. You can talk to the South Texas Project.

Q Did you bring up this concern with South Texas?

A Yes, sir, I did. I sure did.

Q Just for my own general curiosity, what would you have done? Would you have done anything differently?

A Well, I lost one job over this. What I would probably do at Comanche Peak, I would probably exclude the coatings, you know, just exempt the coatings and put them on an exempt log. But in most cases it is my understanding that it is essentially impossible because there is so much square footage you would run over your allowed maximum square footage of coatings. It would put you so far over that you can't do it. So I think the answer would be to trap the coatings which I don't know how feasible that is, and there is always the alternative of stripping the coatings.

MR. JOHNSON: Do you have anything, Frank, that you want to add?

MR. HAWKINS: No, I sure don't. We are just looking at the resolution of that. I understand your concern. It is a good question.

Let's move on to No. 14 and I am quoting again

6-11

from Cory's statement.

I along with many of the other QC inspectors at Comanche Peak have a continuing concern regarding instructions from [redacted] the TUGCO QA manager, and [redacted] the non-ASME QA/QC supervisor, prohibiting certain QC group from writing NCR's. My group is prohibited from writing NCR's and if an inspector does write an NCR, his is sent straight to [redacted] or [redacted] office. I have been called to [redacted] office twice for writing NCR's and I have furnished the NRC with the names of other inspectors that were treated the same way.

My group is required to use "unsats" on inspection reports to report deficiencies rather than NCR's. I do not believe this is proper because NCR's are dispositioned by engineers, whereas IR's can be dispositioned by anyone. An inspection deficiency reported on an IR restricts what criteria the inspector is allowed to inspect. What coatings QC inspectors write "unsats" on IR's, Brown and Root craft superintendents regularly complained to the QC leads. I feel pressure from my superiors every time I write an "unsat" on an IR.

BY MR. HAWKINS:

Q You all don't write NCR's?

A I have written a couple in the last month or so, but this was because I was instructed to do that.

6-12

Q You can if you want to?

A No, sir, not if we want to. It is basically only when we are instructed to do so by our supervisor or lead man.

Q What if it is something outside of the procedural requirements that is not covered by them, would you write an NCR?

A No.

Q In other words, it is not an end process type control?

A No, sir. Such as the ones we have been discussing?

Q Right.

A No. That is the reason I brought this up in the form of a letter to the NRC. I can't write NCR's regarding these concerns.

Q The procedures say you can though.

A No, they don't.

Q They don't. Do they say you cannot?

A They say you cannot. They say the only time you can write an NCR -- if you look on Rev. 27, it says you will not write an NCR. Non-conforming conditions will be reported by the use of an NCR only in case of adhesion failures.

Q Okay. Could you give me an example of something

6-13

that you feel should have been an NCR which required an engineering review and all you did was identify it on an IR?

A Yes, sir. Probably around September of this year I started writing a notation on an inspection report indicating that all traceability of the coating material was lost due to the uncontrolled handling by the paint department. We had a situation where the paint would show up inside the reactor building, but painters would then go and pour the paint into a bucket and walk off until they were ready to paint. Therefore, you are losing all traceability and there is no ID or anything on that paint and the inspector was left to try to verify where the paint was coming from or, you know, what mix and how it was and all that.

I brought this up in two different meetings with my supervisors and lead men and told them about it and explained it to them, and they ignored it. So I proceeded to write this notation on every single inspection report for the last two or three months. We had a new supervisor hired on and he just happened to see one of my inspection reports and saw that notation and instructed me to immediately write up an NCR against this.

So I have since written the NCR. I have included about 12 different inspection reports noting "unsat" inspection. He told me to go back and "unsat" the inspection

6-14

reports. So I have got about at least a dozen inspection reports attached to the NCR.

The thing that I would like to bring out is that this not only deals with Cory Allen's inspection over the last couple of months, but every single inspection that has been performed in the last couple of months.

Q Do you have anything besides paint traceability?

A As far as the NCR?

Q

A Yes, there are a few things. Let me look at my list here.

(Brief pause.)

Okay, I think I have got it. This is an example of something I wouldn't be able to write an NCR on. But on our inspection form for primer repair, it says verify that the surface has been cleaned in accordance with paragraph 3.2.2. And if you go back to that paragraph and read what it says, it says to verify the blasted or power tool surface has been brushed or vacuumed. That has never been performed on power tool cleaned surfaces.

So what a lot of the inspectors are doing, probably about 35 or so, are checking that "sat." I am checking it "sat", too, but I am writing a notation on each inspection report that says surface was wiped with a cloth rag, meaning that we are not performing it like

6-15

the procedure requires. They aren't vacuuming or brushing the surface clean. They are just wiping it with a cloth, and that is a direct contradiction of what the procedure requires.

Q What procedure is that you are referring to?

A It is QI-QP-11.4-5.

Q Section?

A Paragraph 3.2.2.-D, "D" as in David.

Q And you feel that that is a non-conforming condition that requires engineering review?

A Yes, sir, I do, because, like I said earlier, my job is to enforce procedures. They are not doing it in accordance with our procedure, or at least we are not verifying that they are doing it in accordance with our procedure and that ---

Q You said they are not doing it, didn't you?

A Yes, sir, they are not doing it.

Q You are not verifying it, but they are not doing it.

A Yes, sir, and the reason I believe it requires an engineering disposition is because what they are doing is blowing it down with compressed air or they are wiping it with a cloth rag. What you are blowing it down with compressed air, you have got to make sure it is free of any oil or water or otherwise you are just recontaminating

6-16

the surface when they blow it down.

Second-off, if they are wiping it with a cloth, you can always leave traces of lint on the steel. So the reason that was put in there is that it has got to be either vacuumed or brushed for good reason because they want the surface recontaminated.

Q All right. Can you think of any other examples?

A Well, here is one. Something I have been seeing for quite a while is that the wiping immediately prior to repairing surfaces like coming back and power tool cleaning surfaces, they are wiping paint with foreign cleaning solutions. They are using a hospital disinfectant over the coating surfaces and these solutions carry a pretty high percentage of chlorides in them, two percent chlorides.

The cleaning solutions are not specified in the procedure anywhere. The only thing they are allowed to use is Phenoline 305 thinner. So they are using a cleaning solution that is not specified.

Q Who have you approached with that problem?

A I approached [redacted] with the problem.

Q What did he say?

A Well, I approached it to him in the sense that it shouldn't be allowed in the reactor building because it would probably cause stress corrosion cracking of stainless steel. He said there has never been any problem

6-17

or any requirement at Comanche Peak in regards to this and I should drop it.

Q So, in other words, you felt it should be an NCR condition?

A Yes, sir.

Q And they instructed you that you should drop it?

A Yes, sir.

Q Anything else?

A Well, there is another one that says in AS-31 7.2.B that when you roughen and taper or feather out surfaces it should be a minimum of two inches in all directions. That has never been done.

Q Isn't that what we talked about before though?

A Yes, but what I am saying is it is a minimum of two inches. They are saying a minimum of two inches.

Q Oh, and the procedure says an inch and a half maximum?

A Right.

Q So there is a conflict there?

A Yes. That is just a contradiction.

The other problem that I would like to point out is the fact that the new inspector trainees which are working at Comanche Peak, they have just been hired out of Brown and Root Construction. They still apparently remain on the construction department's payroll and I feel like

6-18

there is a conflict of interest.

Q All right. That is not an NCR?

A No, that is not an NCR.

Q You are just throwing that out for general discussion.

A Yes, sir, exactly.

Q All right. Well, let's stay on this NCR and IR and "sats" and all that stuff.

A Okay.

Q How does an IR unsatisfactory rating turn into an NCR or does it ever?

A Well, according to our procedure, the only time it becomes an NCR is when there is loss of adhesion of the coatings.

Q And that is it?

A Yes, sir.

Q You would write an IR "unsat" and an NCR both in that case?

A Yes, sir.

Q Do you know if they trend unsatisfactory IR's?

A I believe they do. I am not aware of what extent they do.

Q What did you mean when you said an inspection deficiency reported on an IR restricts what criteria the inspector is allowed to inspect? I don't understand that

6-19

maybe you could explain it to me.

A In regards to?

Q Well, it is a quote right out of your statement. It said "An inspection deficiency reported on an IR restricts what criteria the inspector is allowed to inspect."

Do you need to see it in context?

A Yes, sir.

(The document reference was shown to the witness.)

It only means that an inspection report form, you have so many attributes that you are actually doing the inspection for, and because you only have these attributes you cannot proceed further into finding or discovering something else.

Now I will give you an example. I don't know if I am explaining this right, but say, for instance, you find something that is very wrong. You cannot report it. It just goes unreported because it is not an attribute and you can't "sat" it out and you can't check the little block. It is just more or less goes unreported.

Q I am sorry, but I thought the basic philosophy behind all sites and all quality activities would be that anyone who finds an unsatisfactory condition could write an NCR on the thing and get it dispositioned.

A No, sir, that is not the way it works.

6-20

Q Well, I mean within reason of course, that it would go to a supervisor and he would say either you are crazy or, you know.

end 6

A No, sir.

That is not the way it works at Comanche Peak. I will give you an example which I thought was very significant.

About five or six months ago, I discovered -- one of our tests we do is perform an air acceptability test. We check the air as it comes out of a spray gun and make sure there is no water or contamination in the air which would prevent the actual curing of the coating.

I discovered one way or the other that the painters were putting a cigarette butt in the cheater valve of their spray guns. I found out this had been going on for quite a long time at Comanche Peak.

The reason they do this is because we do this air acceptability test and there was so much water that was going through the air lines that they would put this cigarette butt immediately prior to our inspection -- behind our back -- they would put the cigarette butt into the cheater valve.

When we would go to check the air, it would be okay. We would hold the gun up there against a pad of white paper and check for 30 seconds, walk away, "It's okay." After we would leave, they have to pull the butt back out because there is so much water that it saturated that filter, the spray gun would no longer work.

So, they pulled the cigarette filter out and would

keep on spraying.

Q Yes, but the basic philosophy behind QC inspection is that you can inspect those attributes at any time during the process. Why didn't you go back in later on and do it then?

A You mean go back and check the gun to see if the cigarette filter was in there; is that what you are saying?

Q Yes, if it's got one in there, identify it.

A Well, there is no question. I mean, I determined it was in there. It was well known.

Q And make them clean the lines out.

A Well, let me go further, the reason I didn't do this. Upon finding this, I talked to the general foreman. I questioned him about it. He said, "Yes, this is true." I said, "Okay," and I went and picked up the telephone and called my supervisor [redacted]

I brought him out to Elevation 905 in the reactor building with [redacted] I explained the entire situation to him. He said, "Cory, I see no problem with it. They have been doing it for years and there is nothing wrong with the paint, it is not falling off the wall. So, let's go ahead and let them do it."

So, that's all there was to it. They are allowed to do that. I feel like it's deception on their part to put the filter in there to pass the air acceptability test.

But when we leave they pull the filter out and water continues to flow through the lines and probably inhibits the curing of poxy coatings.

Q You said you felt pressure from from your supervisors when you write an "unsat." Who do you feel pressure from?

A [redacted]

Q But he is not there any more.

A Right.

Q Who else?

A Well, it would be -- I have not really been pressured in that regard in quite a while, primarily because I now work the night shift. But what would happen is, when I write an "unsat" report the foreman would talk to me about it; the general foreman would talk to me about it; the superintendent would talk to me about it. The superintendent would call [redacted] my boss. [redacted] would come and ask me about it and I would feel pressured because he is the man that reviews me. He can give me a raise or keep me from getting a raise.

You know, he is the man over me.

Q How is your new boss doing?

A I have shook his hand, you know, that's all I know about the man.

Q All right.

A I don't know him.

Q But all this pressure that you are referring to is from [redacted] and that is a past issue. It was something that was happening with him and since he is no longer there, it's not happening now.

A No, sir; that is not true because the attitude is still there. Just because the instrument in the form of [redacted] is gone does not mean the practices have ceased.

Q Give me a name, then, and tell me who is doing it to you now.

A Well, I provided you examples, this RFIC from [redacted] which is a direct contradiction to NCR which was written. He is providing a lot of verbal instructions -- it is not harassment or intimidation. It is just, they are providing us verbal instructions. No one will give us anything in writing for our protection, so we know clearly what we are supposed to be doing out there.

Q I guess most of the pressure, then, is implied or inferred, rather than direct.

A Yes, sir. Inspectors there have written numerous RFICs, trying to get some sort of written instructions, something in writing. They will not give us anything. I will give you an example.

Today is Monday, Friday, I received an RFIC back

that was responded to on October 17. I wrote it and submitted it on September 7. It came back well over two months later. It was a very, very important RFIC and for some reason it sat on [redacted] desk for over two months.

Q Is that not typical? Is that a long time for an RFIC?

A It is a very, very, very long time because what happened was, I was trying to write it so that I could "unsat" items which were being reworked by the crafts. Like welders, they are coming back and stripping coatings off pipe hangers. There should be some tracking of the coatings. These were already bought off coatings that were being stripped and they needed a tracking system to go back, identify coatings which were now being stripped so that you would negate or eliminate the final inspection reports where they were being bought off.

I was just trying to find some sort of tracking system for this. The RFIC came back well over two months later, and at this time a lot of these areas are now very, very hard to get to. You know, they are up in the dome. They have taken the catwalk off out of the dome now. So, it makes it very, very hard to get back into these areas to do inspection.

Q So I could get to that specific RFIC, could you give me more than just the subject? Do you have any idea of

what the number was?

A There is no number. There is only a date.

Q Just the date, I could get it from that. You gave us the dates already.

A Maybe not. I have the original copy of it. I could give you or mail you a copy of it to show that to you.

Q All right, would you mail me a copy?

A Yes, sir; I will.

Q Okay. Why don't you take down my address?

A Okay.

Q Frank Hawkins, 799 Roosevelt Road, Glen Ellyn, Illinois 60137.

A 60137?

Q Yes. Actually, put U.S. NRC and then put "Attention" me down the bottom.

A All right.

Q So, this pressure that you felt, did it stop you from doing your job?

A Well, that's kind of a loaded question on the fact that I felt like I wasn't doing my job the way I expected or I should think a QC inspector should work.

In actuality, it prevented me from doing my job in the sense that whenever you are at the point of writing an "unsat" or "sat" -- you know, in the coatings a lot of times it comes down to actually trying to make an interpre-

tation, in your mind what that procedure is saying. So, it's sort of like an "if" situation. You don't know -- you know, it's right on the very fine line -- whether or not you should accept or reject.

Because of this pressure usually you know you are going to get into all kinds of trouble if you are going to reject that item. So, in that sense I felt like it had quite a bit of effect on me. In my opinion, I think it is all calculated for this one purpose, to put a certain amount of pressure on the inspector so that he will be reluctant to write an "unsat" report.

Q So, you can't really give me any specific instance where this pressure that you felt inhibited you from doing your job.

A You mean samples or persons?

Q Did you ever write something "satisfactory" that should have been "unsatisfactory" because someone told you, "I'm going to break your legs if you don't?"

A No, of course not.

Q Or even a little less than that.

A Well, I have written a "sat" report which [redacted] tried to explain the intent of the procedure, which I disagreed with. It was the intent -- he was trying to explain but it was not actually in writing in the procedure. He more or less told me to "sat" it out because he was the

author of the document. He was the originator. But it wasn't writing.

So, I felt compelled to go ahead and "sat" it out, although I had reservations about it.

Q All right. Do you still have those reservations even though he was the one that wrote it and should surely know?

A Yes, sir; everybody has those reservations because it has not been changed, that procedure. It is just not clear what you are supposed to do. It's a lot of people making various assumptions.

Q Which procedure is that?

A It's this one, 11.4-5, which is the steel coatings procedure and deals with the final acceptance of coatings.

Q Could you give me some examples of areas that are gray in your opinion?

A I sure will. Do you have that Rev. 27?

Q Yes.

A Well, I would say Note 4 on page 5 of 27, that is one of the most gray areas I have ever seen.

Q Why is that gray?

A Because it's so confusing by trying to figure out exactly what you are supposed to do.

Q How do you do it?

A I don't know.

Q Well, you must do something. What do you do?

A How you are supposed to do it, I don't know. How I actually do it is by, you determine how much square footage you have. You determine how many readings you are supposed to take, and you take those readings. If it's unacceptable, you define the area that's unacceptable and you "unsat" it.

But this is giving you directions on how to isolate an unacceptable area. It tells you how to recalculate the average and to write those averages down. I don't know how to do it by the procedure. I am doing it my own way and as far as I know every other inspector is doing it his own way.

Very few people know how to implement that.

Q You are saying no one basically understands the intent of Note 4, then?

A Yes, sir.

Q Anything else?

A Well, this is back to 3.2.2-E, this note, plus No. 1 here. There are several contradictions in there, as we have already discussed, about five percent of every square inch. There are numerous contradictions in there.

Q All right. I am looking for new information that you have not given me already.

A Okay. One which draws a lot of confusion is

paragraph 3.7.5-B. It talks about, the last thing it says, "Pin holes, small discontinuities, may be repaired at the time of final inspection without a later reinspection of the repair."

The problem being is -- which I discussed with Harry Williams -- is that you still have a criteria, a continuity inspection criteria, on 3.6.4. You have an attachment on the back of this procedure which -- I think it's called a NACE Condition C, a liable force of discontinuity

You have a criteria for determining how many points discontinuity you are allowed within the area. But here you are more or less supposed to disregard this, this criteria, and use 3.7.5-B which says, "Small discontinuities can be repaired without a later reinspection of the repair."

So, on the one hand it should be "unsat" if you go beyond that criteria. But you are supposed to assume that it's automatically "sat" because they have put this into the procedure, allowing you to touch up discontinuities.

Q I see where the confusion could come up. Anything else?

A Yes. I would like to go to Construction Procedure CCP 30.

This paragraph 4.4.3 is extremely confusing. I am not exactly sure what this deals with. We have been talking, you know, this afternoon, concerning the coating interface as

repair areas. But what this actually deals with is not repair areas. This is talking about equipment where there is an interface between steel and concrete, like imbeds. That is what we are talking about here, where if you have imbed in concrete you can overlap the 305 and go still on to the 1201 on the concrete an inch and-a-half; that is what they are dealing with. At least that is what we think they are talking about.

Q Have you written an RFIC on this question?

A Yes, sir, that is what I showed you earlier.

Q Oh, we have looked at that already?

A Yes, sir.

Q Okay. I lost track, I am sorry. When I go back about three or four days from now and all this settles in, maybe I will be able to find that.

A Yes. But this doesn't really concern a repair area as far as CZ-11 or 305. This is talking about an interface between steel and concrete.

The reason, you know, it deals with steel and concrete is because if you go to CCP 40 which we found out, it says that all coating interfaces shall be inspected during the steel inspection. CCP 40 is the concrete procedure.

They are saying that whenever you come into an interface with steel on the concrete, you don't do an inspection at that point. You wait until you are actually performing an

inspection for steel. This is the paragraph you go to, and apparently this is saying that you are allowed to apply a finish coat for the steel over onto the finish coat for the concrete. That is our interpretation.

But if you read that, it doesn't necessarily say that.

Q Well, where is the section that discusses repair interfaces?

A This is it right here, we think.

Q But that is really the one, you said, applies -- does it apply to everything, maybe?

A Apparently so.

Q Okay, but already you told us that you are uncomfortable with that as applied to repair. You don't have any problem with it applied to concrete-steel interface, though; do you?

A Concrete-steel interfaces?

Q That is what you were talking about.

A Yes. Well, uncomfortable in the sense that we are instructed to allow to inter-plot 305 over the 1201. Again, it is a system that is not really qualified.

Actually, it's not so much 305, it is 191. The primer on the steel is applied -- 191 -- is applied onto the 1201 of the concrete. Then they come back and apply the 305 over the 191 which is over the 1201. So, it is kind of

confusing. But what you induct with on the concrete is Nutec 11S, Reactor 1201, Carboline 191 and Carboline 305.

Q Al right. I am still willing to listen. Do you have anything else?

A I think that's about it.

Q That's about it for right now?

A Yes.

Q Do you feel pressure from crafts to not write "unsats"?

A Sure.

Q How do they put pressure on you? You guys are not supposed to be related.

A Well, it's just the fact they argue with you.

Q Why do you even listen to it? I mean, why do you entertain their argument? I don't understand that.

A It's just sort of professional courtesy to give them the benefit of the doubt, to listen to their gripes. It's just part of the inspector's job. You just can't tell them to, you know, "Mind your own business" or something like that because what you are doing is saying their work is not satisfactory.

So, they have a certain amount of right to ask you what is wrong. But you know, sometimes they will tell you, "You are wrong. I think you are wrong" and they go running off to the general foreman. The general foreman comes and

argues with you about it.

Q So, as a rule there are a lot of checks and balances to the system.

A Right.

Q Are you comfortable with the system the way it is?

A As far as inspector, I don't mind the going back and forth and arguing about it, I don't consider that harassment, intimidation, as long as it's kept right there and doesn't get out of hand, and that is what happens at Comanche Peak, it sort of gets out of hand and you need some support from your supervisors to back you up and talk with the crafts people and say, "Hey, you need to tell your guys to hold it down because you are kind of interfering with their inspection."

Q And you are saying basically that you are not getting the support you feel you should get from your supervision, your quality supervision.

A Exactly. We have never, ever gotten any kind of support from them in that regard.

MR. HAWKINS: Claude, do you have any questions?

BY MR. JOHNSON:

Q I just want to go back. You were discussing something on curing. I guess I am curious, I can't pin-point exactly where you were at when you were talking about curing the nozzles on these hoses that the craft is using.

Is this part of the reinspection program, or is this a complete new application of the system?

A This is a new application of the coating system, if I understand what you are saying about checking the air?

Q Right, okay.

A Yes, it's just your regular, on-going inspection where, as part of your inspection attributes check the air to make sure it doesn't have any oil or grease, or water coming out of the air lines.

Q Okay. I guess also I am curious too, would you not necessarily see, as far as any contaminants, couldn't you see that? You do do tack tests to determine if it is dry, right, before you apply your primer?

BY MR. HAWKINS:

Q Do you use a blotter, is that what you are doing?

A Yes, just a blotter test on the air.

Q Is that what you are referring to?

A Yes, as far as air acceptability. But as far as tack test, determining whether or not you are receiving a full cure, no. That is my point, that you are not going to determine if it is uncured. The water is going to be in minute amounts, it's not like a gallon of water coming through the air hose.

But it will affect the curing of that coating to a certain degree. It is going to restrict -- you won't

receive an optimum level of molecular weight for that polymer. It will not react or polarize and achieve the molecular weight it should get.

So, it could be ten years; it could be twenty years, whatever. It is not going to have the optimum physical properties it should if a certain amount of water, even a limited amount of water, came through those air hoses.

That was what I was trying to point out to [redacted] that you will never gain the optimum physical properties if that is allowed to happen.

MR. JOHNSON: I don't have any more.

MR. HAWKINS: All right, let's move on to the last issue in Statement 15. In a letter here to [redacted] you state that, "Enclosed is another example of unvarifiable coating application methods similar to those already provided to you in my letter dated October 11, 1983.

"This request for informational clarification is answered by [redacted] the QE for coatings at CPSES. This RFIC instructs QC inspectors to allow painters to apply coatings without regard to the DBA qualified sequence of coatings for the system. This practice is widespread at CPSES as already shown in my previous letter."

This is the same issue we talked about earlier.

THE WITNESS: Yes, sir.

8-1

BY MR. HAWKINS:

Q Is there a conflict of the resolution of the information that was provided on this RFIC and the disposition of the NCR 83-01752?

A They are exactly the opposite.

Q Could you go through it one more time. You have been through it two or three already, but one more time.

A The NRC requires you to sand back the CZ-11 with a primer back off the 305 top coat. That allows the CZ-11 or primer 191 to say on the top coat and you just come back and spray another coat of 305 over that. So they are just directly the opposite.

MR. HAWKINS: All right, I understand.

Do you have anything on 15?

MR. JOHNSON: Not really. I mean it kind of covers everything.

MR. HAWKINS: All right. The last big question then is a simple one. Do you have anything that we are not aware of?

THE WITNESS: No, other than just maybe to go into the deal about the new inspectors still there on the payroll. You are aware of that. So that is it. That is all I have got.

MR. HAWKINS: You brought that up in No. 14.

All right, I can't think of anything else

8-2

we need to do besides thank you for coming.

Are there any closing remarks you would like to make?

THE WITNESS: Just that I appreciate your time and efforts into this.

I would like to emphasize that the purpose of my letter was to request an in-depth investigation. All I am trying to do is provide examples of problems with the procedures and specifications. I am not at liberty or do not have the access to go in and review their documentation and see what they have. Some of these concerns, a couple of them I am not real sure about. It is just coming from my previous experience. So it is something that I hope you will look into and find out whether it is right or wrong.

MR. HAWKINS: All right. Well, I assure you we will look into every one that you brought up and let you know what the results are.

MR. JOHNSON: Right.

THE WITNESS: Could I have a copy of this testimony as soon as possible?

MR. HAWKINS: Sure. We will get it in the mail to you by the end of next week.

THE WITNESS: Thank you.

MR. HAWKINS: Because Thanksgiving is coming

8-3

up, let's go off the record. That is not a reason for going off the record actually.

(Laughter.)

(Whereupon, at 4:10 p.m., the interview concluded.)

* * * * *

COMMONWEALTH OF VIRGINIA)
) ss.
COUNTY OF FAIRFAX)

I, MARIELUISE E. HANSEN, a Notary Public for the Commonwealth of Virginia-at-Large, do hereby certify that there came before me this date CORY ANDREW ALLEN, whose testimony appears in the foregoing pages.

Pursuant to stipulation of parties, the witness was sworn to by me to tell the truth in the foregoing proceeding to the best of his ability and belief.

I certify that I have no interest in the proceedings, financial or otherwise, and further that I am not a relative of nor employed by any of the parties.

WHEREUPON I have hereonto set my name this 21st day of November, 1983.

Marieluise Hansen

Notary Public in and for the
Commonwealth of Virginia-at-Large

My Commission expires November 26, 1984.

CERTIFICATE OF PROCEEDINGS

This is to certify that the attached proceedings before the NRC COMMISSION

In the matter of: Interview of CORY ANDREW ALLEN

Date of Proceeding: Marriott Hotel (Greenpoint) Houston, Texas

Place of Proceeding: Monday, November 21, 1983

were held as herein appears, and that this is the original transcript for the file of the Commission.

Mary C. Simons
Official Reporter - Typed

Mary C Simons
Official Reporter - Signature

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Marieluise E. Hansen
Official Reporter - Typed

Marieluise E Hansen
Official Reporter - Signature