

RESPONSE



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

DOCKETED  
USNRC

September 29, 1998

'98 SEP 29 P2:45

OFFICE OF THE  
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Washington, D. C. 20555

In the Matter of  
CONAM INSPECTION, INC.  
Itasca, Illinois (License No. 12-16559-01)  
(Order Imposing Civil Monetary Penalty)  
Docket No. 30-31373-CivP

Dear Administrative Judges:

Attached hereto is the deposition of William Chastain taken on May 12, 1998. It is Joint Exhibit number 41 and was received into evidence at page 1060 of the transcript. By copy of this letter we are providing the reporting firm with three copies for the record and the Commission's Secretary with two copies.

Sincerely,

*Charles A. Barth*  
Charles A. Barth  
Counsel for NRC Staff

Enclosure: As Stated

cc: See page 2

SECY-EHD-001

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cc w/enclosure:

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Panel, USNRC

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UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

- - - - -x  
In the Matter of: :  
DEPOSITION OF :  
WILLIAM CHASTAIN :  
(CLOSED) :  
- - - - -x

NRC Region III Office  
801 Warrenville Road, Suite 255  
Lisle, Illinois  
Tuesday, May 12, 1998

The above-entitled matter came on for deposition,  
pursuant to notice, at 10:30 a.m.

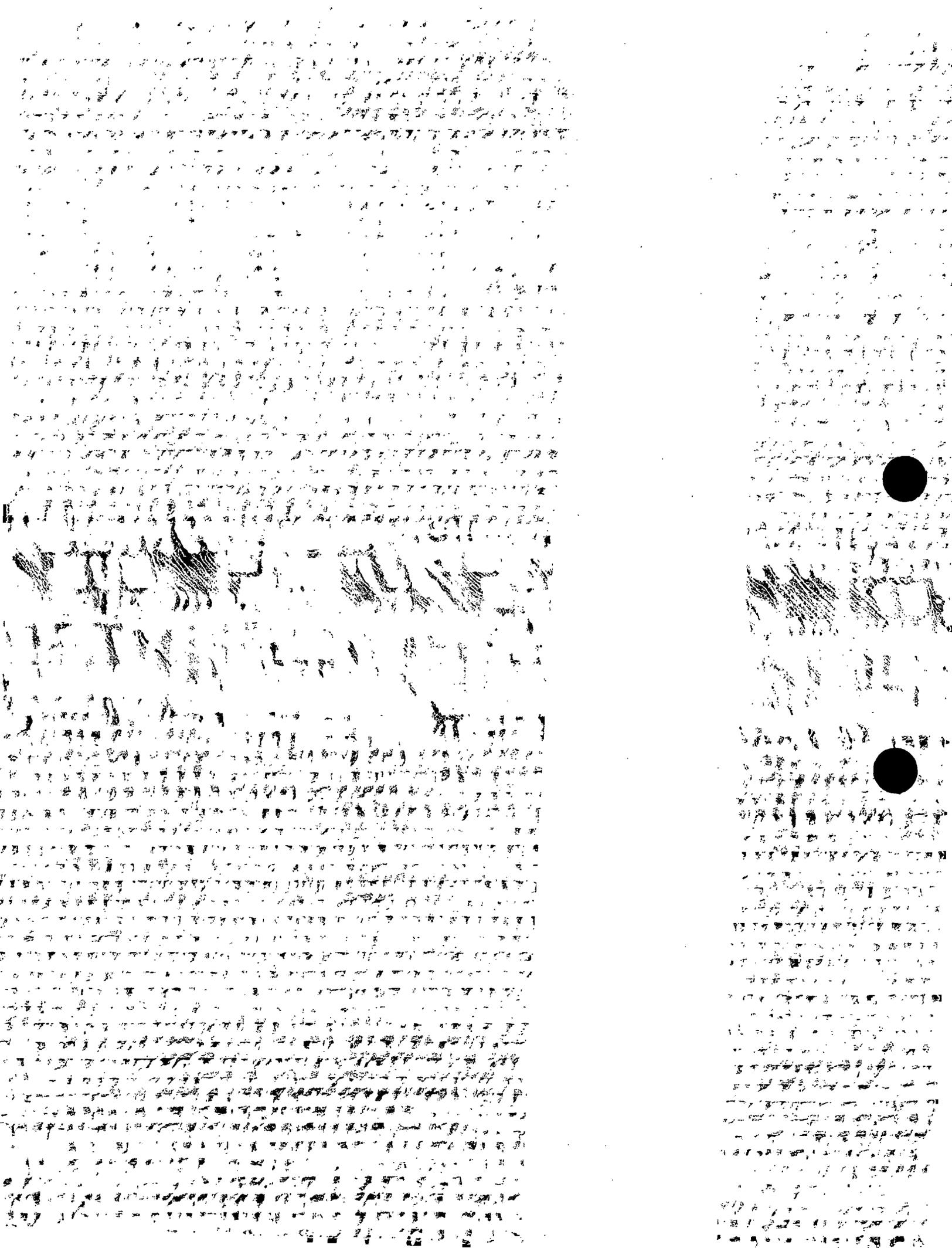
BEFORE:

- CHARLES A. BARTH, Investigator
- DENNIS C. DAMBLY, Investigator
- THOMAS F. YOUNG, Radiation Specialist

APPEARANCES:

On Behalf of Conam Inspections, Inc.

- MALCOLM H. BROOKS, Esquire
- McBride, Baker & Coles
- 500 West Madison Street,
- 40th Floor
- Chicago, Illinois 60661-2511



1 APPEARANCES: [Continued]

2 On Behalf of Conam Inspections, Inc.

3 ROBERT J. SLACK

4 Quality Assurance Director

5 Conam Inspection, Inc.

6 1247 Norwood Avenue

7 Itasca, Illinois 60143-1124

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WITNESS  
WILLIAM CHASTAIN  
BY MR. BARTH  
BY MR. BROOKS  
BY MR. BARTH

EXAMINATION  
  
4  
53  
115

E X H I B I T S

NUMBER  
Government 1  
Government 2  
Government 3  
Government 4  
Conam 1  
Conam 2 & 3

IDENTIFIED  
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## P R O C E E D I N G S

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[10:30 a.m.]

MR. BARTH: Would you please swear in the witness,  
Mr. Reporter?  
Whereupon,

WILLIAM CHASTAIN,

the witness, was called for examination and, having been  
first duly sworn, was examined and testified as follows:

EXAMINATION

BY MR. BARTH:

Q Please state your name for the record, sir?

A William Chastain.

Q This involves a civil penalty by the Nuclear  
Regulatory Commission levied against Conam Inspection, Inc.  
for certain actions that happened in February 1996. The NRC  
sent these people an order imposing civil penalty on  
November 5, 1997. That order imposing civil penalty  
authorizes Conam Inspection to contest the NRC civil penalty  
and they so requested it.

When they request a contest, they get a hearing  
before an NRC licensing board. That's the proceeding in  
which we're involved. It's the levy of the civil penalty  
against Conam and the request for a hearing. With those  
preliminaries, I'd like to identify to my left is Mr. Dennis  
C. Dambly. Mr. Dambly is a Deputy Assistant General Counsel

1 with the Nuclear Regulatory Commission. His office is in  
2 Rockville, Maryland.

3 Mr. Chastain, I'm Charles A. Barth. I'm an  
4 attorney with the Nuclear Regulatory Commission. My office  
5 also is in Rockville. To my right is Mr. Thomas Young, who  
6 is attached to our Lisle, Illinois regional office. And on  
7 the other side we have Mr. Chip Brooks, who is -- I don't  
8 know whether you use Malcolm.

9 MR. BROOKS: You can use Chip. That's just fine.

10 MR. BARTH: We have Mr. Chip Brooks who is the  
11 counsel for Conam and the gentleman with him is Mr. Robert  
12 Slack, who is a radiation safety officer for Conam.

13 BY MR. BARTH:

14 Q Do you recall an incident in Indianapolis in  
15 February 1996 during which you were exposed to radiation?

16 A Yes, sir.

17 Q By whom were you employed?

18 A Conam Inspection.

19 Q If I don't always keep my voice up or you don't  
20 understand me or my words are slurred, please ask again. If  
21 you don't understand the question, please ask.

22 A Okay.

23 Q Can you tell us very briefly what were you doing  
24 early on that day?

25 A We were X-raying various two-inch piping inside

1 the building. We were assembling a brick floor on control  
2 valves that had been welded previously about approximately a  
3 year ago. We were performing X-rays on the welds.

4 Q And what sort of a device did you use to make  
5 these X-rays?

6 A It was Amersham Type 660, Type B camera.

7 Q Let me show you a few pages I have. These are  
8 Amer tests, gamma radiography products, Model 660 gamma ray  
9 projector. This is their manual 006. Have you seen this  
10 before, sir?

11 A Yeah. Once or twice.

12 Q I would ask that the reporter mark this as  
13 Government Exhibit No. 1, if you please.

14 [Government Exhibit 1 was marked  
15 for identification.]

16 BY MR. BARTH:

17 Q I've provided a copy of those pages to counsel for  
18 Conam. For the record I would like to recite that they are  
19 the cover sheet, pages 5.1, 5.2, 5.3, 5.5, 5.7, 7.1, and  
20 also attached to the back is Gamma Radiography Radiation  
21 Safety Handbook also by the Amersham Corporation. That  
22 consists of a cover sheet and page 35. This consists of  
23 Government Exhibit No. 1.

24 MR. BROOKS: Just for the record, Charles, the  
25 selection of pages was something that you've done and rather

1 than this exhibit existing in this form someplace else.

2 MR. BARTH: Correct.

3 BY MR. BARTH:

4 Q Could we take us back to -- when did you join  
5 Conam?

6 A I believe it was May 3rd of '93.

7 Q And for whom did you work before then, sir?

8 A SGS Industrial Services.

9 Q I beg your pardon?

10 A SGS Industrial Services.

11 Q And for how long did you work with them?

12 A Approximately a year, year and a half.

13 Q And what did you do for SGS?

14 A I was basically just an assistant for magnetic  
15 particle UT and a little bit of radiation, X-ray work.

16 Q Did you do radiography work for them?

17 A No, sir.

18 Q Did you do any radiography before you became  
19 employed by Conam?

20 A Just as an assistant, to obtain signs or ropes.

21 Q As an assistant, did you use the Amersham?

22 A No, sir.

23 Q Did you have any training on Amersham before you  
24 joined Conam?

25 A Yes, sir, some radiation safety at Moraine Valley

1 Community College.

2 Q At where?

3 A Moraine Valley Community College. I'm not sure if  
4 that was with Conam or SGS, but they sent us to that safety.

5 Q This was a --

6 A Course.

7 Q That SGS sent you to?

8 A Yeah. I'm not sure if it was SGS that sent us  
9 there or if it was when I first hired in for Conam. I can't  
10 recall.

11 Q Do you recall using Government Exhibit No. 1  
12 during those courses?

13 A I'm sure they were in our books, in our radiation  
14 safety books.

15 Q How long did this course last?

16 A I believe it was 40 hours.

17 Q Forty hours. At the time you finished the course  
18 did you feel you were competent to use an Amersham 660  
19 model?

20 A Yes, sir.

21 Q When you joined Conam on May 3, 1993, did Conam  
22 provide you any training on the Amersham?

23 A On this specific camera, no.

24 Q What did you do when you first joined Conam?  
25 Either question. Did you do radiography?

1           A     No.  It varied, I mean, depending on the job.  I  
2     mean, I'm mostly always a UT technician, but on occasions I  
3     would go out with RT crews as an assistant.

4           Q     By the RT, do you mean radiological?

5           A     Yes, sir.

6           Q     And can you describe the training that you  
7     received at Conam in the use of an Amersham 660?

8           A     I mean, just with the radiographer.  I mean, as  
9     far as that training, I mean, I was trained by them.

10          Q     Did they give you a course that you can call in  
11     the sense of being schooled in how to use the instrument?

12          A     Yeah.  That was our radiation safety.  They showed  
13     us the operations of a source and the connections and that  
14     we had reviews at Conam on radiation safety.

15          Q     In addition to showing you, did they ask you to  
16     then perform the operation so they could check that you  
17     understand them?

18          A     Yes, sir.

19          Q     Do you recall who did that at Conam?

20          A     Whoever the RSO at the Gary Lab was at the time,  
21     Keith Tucker or Dave Tebo, did our review.

22          Q     Where were you assigned physically at this time to  
23     work?  Where was your office?

24          A     At this time it was Gary, Indiana.

25          Q     Gary, Indiana.  Were you always assigned to Gary,

1 Indiana office while you worked for Conam?

2 A Yes, until the end of, I guess, I guess they said  
3 they were closing down the Gary lab and everybody was to  
4 transfer to Itasca. And at that time I, I guess you can say  
5 resigned.

6 Q Can you give me some kind of a date when this  
7 occurred?

8 A Towards the end of October of '96.

9 Q And to make certain I understand you, you resigned  
10 from Conam perhaps October, but at least it was 1996?

11 A Mm-hmm.

12 Q Towards the end of the year?

13 A Yes, sir.

14 Q Can you describe the training you received by  
15 Conam in the use of the Amersham 660?

16 A Like I said, they showed us the connections, how  
17 to disconnect, how to connect, how to survey the camera, and  
18 the locking mechanisms.

19 Q Was this a several hour course or a one day  
20 course? Can you give me a concept of time of how much this  
21 took?

22 A I can't recall if it was an eight hour course or a  
23 week.

24 Q At the same time did the company provide you with  
25 their own instructions as to how to use the machine?

1 A Yes, sir.

2 Q I show you a document which I would like to mark  
3 as Government Exhibit No. 2. And ask you if you have seen  
4 this document before? These are only pages from the total  
5 document.

6 [Government Exhibit 2 was marked  
7 for identification.]

8 A Yes, sir.

9 Q For the record, these are pages 12, 24, 25 and 26  
10 from a Conam procedure. Could you look at the procedure for  
11 a few moments, Mr. Chastain, and tell me in your own words  
12 what does this cover, what does it encompass.

13 A The correct use of a Techop B66 source, load  
14 surveys and storage.

15 Q Do you have a clear recollection of seeing this  
16 document before or had it explained to you by Conam people?

17 A Yes, sir.

18 Q You clearly recall what happened in February 1996  
19 at Eli Lilly?

20 A For the most part.

21 Q In your own words tell me what happened, and  
22 because I can't testify, would you please identify where you  
23 were?

24 A Okay. We were at Eli Lilly in Indianapolis,  
25 Indiana. We were performing X-ray on two-inch piping for

1 Eli Lilly. We were working approximately 10 or 12 hour days  
2 and our shift started around 2:00 in the afternoon, 3:00 in  
3 the afternoon. I was the individual operating the camera  
4 itself as far as X-raying the welds. We had an individual  
5 that was a Level 2 radiographer who developed and read all  
6 the films.

7 Q Looking at the pages of Government Exhibit No. 1,  
8 will you tell us how this machine operates in the capacity  
9 of getting the radiation source out of the instrument and  
10 getting it back in the instrument? Bear in mind that I have  
11 a reporter here, so hand gestures won't do us much good.  
12 I'd like you to explain your understanding of how the  
13 machine works, referring to Exhibit No. 1, if you will,  
14 please?

15 A Techop 660B, where it says, "an open end on one  
16 end," and there's a locking mechanism with a connection for  
17 the dry cable at the other end. It has an S tube where you  
18 connect the connection, unlock the camera and expose the  
19 camera by cranking out the handle and retracting the camera  
20 to bring it back to the shooting position of the camera by  
21 cranking the handle in the opposite direction.

22 Q Referring you to page 5.1 of the Government's  
23 exhibit, there is a --

24 MR. BROOKS: Which exhibit number are we on?

25 MR. BARTH: One.

1 BY MR. BARTH:

2 Q Does the cranking mechanism appear on figure 5.1,  
3 sir?

4 A Yes, it does.

5 Q Would you describe where that is and how it looks?  
6 Bearing in mind that other people will read this testimony  
7 later so we want to have a full record.

8 A It's on the right-hand corner. It's curled up  
9 with a crank on one end and a connection on the other.

10 Q There's something that to me looks like a fishing  
11 reel.

12 A Yes, sir.

13 Q What is that?

14 A That's just the handle crank that exposes and  
15 retracts the --

16 Q That's how you crank the source in and out?

17 A Yes, sir.

18 Q How can you tell from that crank whether the  
19 source is properly out?

20 A By counting your cranks.

21 Q Can you tell it by feel, does it automatically  
22 stop when it's out or something?

23 A Yes, sir.

24 Q And how can you tell when you've probably cranked  
25 the source back into the camera?

1           A     It also stops.

2           Q     Do you count cranks when you retract it?

3           A     Yes, sir.

4           Q     Does it stop when the source is fully retracted?

5           A     Yes, sir.

6           Q     And when you retract the source fully can you tell  
7 me what are you supposed to do then?

8           A     After you retract the source you're supposed to  
9 circle the camera 360 degrees to be sure it has the source  
10 in the shielded position and lock the back of the camera.

11          Q     Could I ask you to restate your answer in  
12 chronological sequence? We have you at the end of the cable  
13 being cranked.

14          A     I expose the camera --

15          Q     If you slow down it will be a little -- what do  
16 you actually do next?

17          A     After the exposure I crank the source in, counting  
18 my cranks back in to make sure that I have the same number  
19 of cranks in that I had when I exposed the camera.

20          Q     And then what do you do?

21          A     I then approach the surveying meter and all the  
22 constant surveillance on the meter, surveying the camera 360  
23 degrees all the way around to be sure that it is in a  
24 shielded position and then lock the camera.

25          Q     Where is the survey meter in relation to your

1 body?

2 A Out front, directly in front of my body.

3 Q Do you hold it out with one hand, two hands?

4 A Yes, sir. One hand.

5 Q How big is that survey meter? What does it weigh  
6 so we have some idea?

7 A Maybe two pounds, a pound.

8 Q Do you immediately make the survey or do you check  
9 the locking mechanism on the camera? Which do you do first?

10 A Survey the camera. I mean, you're surveying the  
11 camera as soon as you walk in the room. I mean, that's the  
12 survey and then you're walking up to the back of the camera  
13 because if the camera is not in the shielded position, if  
14 it's anywhere in the tube or anything, you're going to get a  
15 reading.

16 Q I'll refer you to figure 5.7A of Government  
17 Exhibit No. 1. Is this a diagram of the back of the camera  
18 with the locking mechanism?

19 A Yes, sir.

20 Q As you approach the camera, is there anything  
21 visually that tells you that the source is in the camera or  
22 out of the camera?

23 A Yes, sir. There's a slide bar with a green side  
24 on one side and a red side on the other side.

25 Q And which side is the green side?

1           A     The green side is showing that the camera is in  
2 the shielded position.

3           Q     This is on the right or left side of this?

4           A     It's on the left side.

5           Q     And if you see a green slide out, that means  
6 everything is all right?

7           A     Not necessarily. I mean, it's a mechanical  
8 device. It's gonna fail. I mean, it's not 100 percent fail  
9 proof.

10          Q     Do you always check this slide as you walk toward  
11 the camera when you're making your survey?

12          A     Yes, sir.

13          Q     And on February at Eli Lilly, did you look at the  
14 slide on the back of the camera as you approached it after  
15 your shot?

16          A     It's hard to say with as many exposures that I  
17 did. Probably not at that particular time. I was more  
18 worried about the survey than I was the actual locking  
19 mechanism.

20          Q     Prior to this time at Eli Lilly, can you give us  
21 some kind of a ballpark figure of how many times you had  
22 used the Amersham camera, sir?

23          A     Oh, I don't really. As far as a number, I can't  
24 really tell you how many times I've used it. I mean, before  
25 then. Maybe a hundred, couple hundred times.

1 Q That's a good answer. I understand. Had the  
2 camera ever given you problems before the February incident  
3 at Eli Lilly?

4 A Me as an individual? No.

5 Q Was it a good camera?

6 A Yes.

7 Q The device worked well?

8 A Yes.

9 Q Did you have a confidence that the machine would  
10 continue to operate properly?

11 A Yes, sir.

12 Q Did you have that confidence whether you  
13 meticulously looked at -- let me start again.

14 Do you recall noticing whether the green slide was  
15 out or not during this particular exposure?

16 A I noticed it after the shot was set up and I  
17 reached to the back of the camera to unlock the source and  
18 felt that the slide bar was not all the way retracted over  
19 to the locked position.

20 Q Was this before or after your survey?

21 A This was after my survey.

22 Q Are you supposed to do anything further with the  
23 camera to make certain that it's secure with the source  
24 inside?

25 A Locking the camera by pushing the plunger and

1 turning it to the locked position.

2 Q Could I ask you to refer to figure 5.7A of  
3 Government Exhibit No. 1 and identify for us what this  
4 locking mechanism? If you could point it out.

5 A The locking mechanism is the round object where  
6 the connection goes in. It has three locations on it, which  
7 is connect, lock and operate.

8 Q Is that the object with the key in it?

9 A Yes, sir. Well, actually that's the actual  
10 locking mechanism. The dial on the side indicates whether  
11 it is on operate, connect or lock.

12 Q Sir, I believe you are probably looking at figure  
13 5.7F. And I would ask you to --

14 A Oh, okay.

15 MR. BROOKS: For the record, now you're having him  
16 look at 5.7A?

17 MR. BARTH: Yes, sir.

18 BY MR. BARTH:

19 Q Does that change any of your answers?

20 A The lock on top, the plunger cannot be pressed  
21 down in the locked position without the dial being on lock.

22 Q After you take a shot, what do you do with the  
23 dial?

24 A You turn it to the lock position and push the  
25 plunger with the key in it.

1 Q Which way turns it to make it secure?

2 A Counter-clockwise.

3 Q Counter-clockwise. And then you turn it  
4 counter-clockwise and then press the lock and stuck the key  
5 in it, is that correct?

6 A Yes, sir.

7 Q Did you do that before you made the survey?

8 A No, sir.

9 Q Does the Conam procedures tell you to do it before  
10 the survey?

11 A Yes, sir.

12 Q Could you tell us what these 100, maybe 200 camera  
13 shots, did you frequently make the survey before you made  
14 certain that the camera was locked and secure?

15 A Not all the time depending on the job and how big  
16 of a hurry or how much I was rushed or, I mean, it just  
17 depended on the circumstances of the job.

18 Q Had you in the past made surveys without making  
19 certain that the green slide was out and the camera was  
20 locked?

21 A Not that I can recall any particular exposure, but  
22 probably so.

23 Q Can you describe the survey that you made?

24 A Well, the camera was actually sitting on a six  
25 foot step ladder. The area that I was X-raying in was

1 approximately maybe four foot wide. The camera was facing  
2 at about a 60 degree angle away from the open end, facing  
3 away from me. And when I made my survey, I come from behind  
4 the camera itself and check my camera to the side and to the  
5 rear and due to the ladder, I couldn't get all the way to  
6 the front of the camera. So with the survey meter on the  
7 side of the camera, which usually read I think 40 MR at the  
8 surface. It was a fairly new source. I was assured that it  
9 was in the shielded position.

10 Q Do I understand you to say that in this particular  
11 circumstance you did not survey the front of the camera with  
12 your survey meter?

13 A No, sir.

14 Q Were there other times you had made surveys that  
15 you did not survey the front of the camera with the meter?

16 A Not that I can recall.

17 Q I show you a document which I would like marked as  
18 Government Exhibit No. 3. This is a diagram made by the NRC  
19 of the incident. It was derived from NRC's interview.  
20 Would you look at this document, if you please, and tell me  
21 if it represents the physical circumstances of the exposure  
22 which we are now discussing?

23 [Government Exhibit 3 was marked  
24 for identification.]

25 A Yes, sir.

1 Q And the part of the camera that I can see sitting  
2 on top of the ladder, that's the back of the camera, sir?

3 A No, sir. That's the front of the camera.

4 Q The front. As I look at the diagram, what was it  
5 that made it difficult for you to survey the front?

6 A On each side of this ladder right here there were  
7 control stations and there was probably, if I had to give a  
8 guess, there was probably 800 to 1000 welds on that two-inch  
9 piping in there just what was overhead and on the ground.  
10 It was pretty much a cluttered area and a tight quarters.

11 (Government Exhibit 4 was marked  
12 for identification.]

13 Q I'll show you another document, which is  
14 Government Exhibit No. 4. This is a closer diagram just of  
15 the camera and the ladder situation. Will the reporter  
16 please mark that -- I appreciate your taking care of that,  
17 sir. Would you look at that, Mr. Chastain, rather  
18 carefully. From your present recollection, does that  
19 describe accurately the situation of the location of the  
20 camera and the ladder without --

21 A The open area of the camera was more than -- it  
22 shows here on the ladder like it was more towards me. If I  
23 was standing on the ladder facing this way, I mean, it would  
24 be facing more to the left, away from me, the open end.

25 Q To make this diagram more accurate, sir, would you

1 rotate the camera clockwise or counter-clockwise?

2 A Counter-clockwise.

3 Q Counter-clockwise. There are words on there that  
4 say exit port. Do you see them?

5 A Yes, sir.

6 Q Would they be more towards the top of the paper if  
7 the camera were correctly oriented in your recollection?

8 A Yes, sir.

9 Q And the control table, do you see that, sir?

10 A Yes, sir.

11 Q Would that be closer to the steps of the ladder?

12 A Yes, sir.

13 Q Do you recall, did the ladder have five steps?

14 A I'm not sure whether it had five or ten. It was  
15 about a six foot step ladder.

16 Q About a six foot step ladder?

17 A Yes, sir.

18 Q Was it a wood step ladder or metal?

19 A It was all fiberglass.

20 Q Fiberglass.

21 A Fiberglass with aluminum steps.

22 Q Referring again to Government Exhibit No. 3, when  
23 you're standing on the ladder, when did you first become  
24 aware that there was more radiation than there should be in  
25 the area?

1           A    I, as far as realizing there was more radiation in  
2   the area than there should be, as I reached over the back of  
3   the camera to take my next X-ray shot, I noticed the slide  
4   bar was not totally engaged all the way to the locked  
5   position.  And I went ahead and unlocked the source so I  
6   could retract it back into the locked position.  And as I  
7   came down the ladder, I went back out into the hallway, and  
8   grabbing the end of the crank assembly, and retracting the  
9   source and then surveying the area to be sure that the  
10  source was in the sealed position.

11          Q    When you went back and recranked, did the crank  
12  work all right?

13          A    Yes, sir.

14          Q    Did it retract the source fully into the camera?

15          A    Yes, sir.  After exposing it and cranking it back  
16  in.

17          Q    And as you walked towards the camera at that time,  
18  did you see the green slide sticking out?

19          A    Yes, sir.

20          Q    Did you look for the green slide this time?

21          A    Yes, sir.

22          Q    Did you then lock the camera?

23          A    Yes, sir.

24          Q    And I don't want these to be leading.  What did  
25  you do to lock the camera?  I'd rather you describe it than

1 I.

2 A By turning the dial to the locked position.

3 Q Which way did you turn the dial?

4 A Counter-clockwise.

5 Q I apologize for the interruption.

6 A That's all right.

7 Q Continue, sir.

8 A By turning the dial counter-clockwise to the  
9 locked position and pushing the plunger down on the lock.

10 Q During this time span did you look at your survey  
11 meter?

12 A Yes, sir.

13 Q What did the survey meter show?

14 A Zero.

15 Q And what does zero mean, since I'm not a  
16 radiographer?

17 A Zero means that, I mean, you're going to be  
18 picking up some radiation on the source when the camera is  
19 in, where the source is in the shielded position. When it's  
20 zero, I was farther away from the source when I first  
21 entered the room after retracting it all the way.

22 Q Did you notice any excessive radiation when you  
23 were making the survey that you did make?

24 A No, sir.

25 Q Did you look at the -- do you presently recall

1 that you looked at the face and the dial of the survey  
2 meter?

3 A After I had noticed that the slide bar was not  
4 totally engaged and when I retracted the source to the lock,  
5 yes, I did.

6 Q Did you look at the dial, you consciously recall  
7 looking at the dial when you made your first survey?

8 A Not that I can recall.

9 Q Is there any kind of a physical indicia,  
10 indication, of excessive radiation in addition to the green  
11 slide bar being out or the meter?

12 A My personal dosimeter.

13 Q Is that something that you can look at and see if  
14 there's excessive radiation at the time?

15 A Not at the time. There's a rad alarm. You carry  
16 a rad alarm in your bag and it will alarm at 500 MR.

17 Q Would you tell me what the alarm is, sir?

18 A It's a pocket alarm system and it detects  
19 radiations at intervals of 500 MR. At 500 MR the alarm  
20 sounds to let you know you're in a high radiation area.

21 Q I'd like to refer you to the Government Exhibit  
22 No. 3, the diagram of the man on the ladder. The alarm was  
23 not shown. Could you tell us or describe for us where the  
24 alarm was?

25 A No. I wear a fanny pack when I X-ray and I keep

1 my personal dosimetry inside the fanny pack. So it was  
2 inside the fanny pack.

3 Q I'm thinking of the alarm. It makes a noise.  
4 Does your dosimeter make the alarm?

5 A No. It's called a rad alarm. It's in the same  
6 pack also.

7 Q That was behind you?

8 A Yes, sir.

9 Q Did it make an alarm at any time during this  
10 incident?

11 A No, sir.

12 Q Do you check out the alarm before you go out for a  
13 job?

14 A Yes, sir.

15 Q Did the alarm work before you commenced this work  
16 at Eli Lilly?

17 A Yes, sir.

18 Q Do you know whether the alarm was checked  
19 afterwards?

20 A Yes, it was. After I received the overexposure.

21 Q And to the best of your knowledge the alarm worked  
22 then?

23 A Yes, sir.

24 Q Did you hear an alarm during any of this incident?

25 A No, sir.

1 Q Do you have any explanation for that?

2 A No, sir. I mean, if it was in the fanny pack and  
3 I couldn't hear it or, I mean, it's a pretty high pitched  
4 alarm.

5 Q Have you ever heard it go off in your fanny pack  
6 before?

7 A No.

8 Q Had you ever heard the alarm go off?

9 A Yes, sir.

10 Q To your best judgment would you have heard it if  
11 it had gone off in the fanny park? I'm thinking of the  
12 fanny pack.

13 A I should have if it went off.

14 MR. BARTH: Give me a moment, please.

15 BY MR. BARTH:

16 Q Looking at figure, Exhibit 3, which is again the  
17 man on the ladder, could you tell us where your fanny pack  
18 is located on that picture?

19 A Well, it generally is to the front of me.

20 Q Is that the black circle on the front of the man?

21 A Yes, sir.

22 Q So both the alarm and dosimeter were at the  
23 closest point to the camera rather than shielded by your  
24 body?

25 A Yes, sir. At that particular time I was working

1 up overheard. From where I was working, I would grab my  
2 fanny pack and turn it to the back so I could get up and set  
3 up the shot. Once I was done and I come down, I would  
4 return the fanny pack back to the front of me.

5 Q In this incident after you made your first crank,  
6 did you change the position of the fanny pack then?

7 A I'm sorry. After the first crank.

8 Q I understood you to say that after your shot you  
9 cranked the source back into the camera and you did it all  
10 the way again?

11 A Mm-hmm.

12 Q Where was your fanny pack when you were making  
13 this cranking?

14 A When I was retracting the source back to the  
15 shutter position? It was in the front of me.

16 Q And was it in front of you at all times when you  
17 left the end of the crank and went up the ladder?

18 A Yes, sir. Until I got to the top of the ladder  
19 and ready to do my set-up.

20 Q On Government Exhibit 3, there is a word that says  
21 dosimetry. Does that point to the fanny pack where your  
22 alarm and dosimeter were?

23 A Yes, sir, inside the fanny pack.

24 Q While you were at Lilly, was there any kind of  
25 pressure by your supervisors at Conam to rush the job?

1           A       That I can recall on the welds that I was  
2 shooting, I can't recall exactly how many I was shooting and  
3 I know that Eli Lilly was wanting more production and the  
4 supervisor from Conam at the time had said that we need to  
5 extend the work hours.

6           Q       And who was this Conam supervisor?

7           A       I'm not sure if it was Larry Hiestand or Keith  
8 Tucker, which one it was. I didn't talk to them. The Eli  
9 Lilly personnel talked to them.

10          Q       Did this pressure you into making more camera  
11 shots during a shorter period of time?

12          A       I'm not so sure that it pressured me, but I was  
13 trying to get as many as I could in the amount of time that  
14 I had.

15          Q       After you noticed that the green slide was not  
16 out, you went back and recranked?

17          A       Yes, sir.

18          Q       And then did you resurvey?

19          A       Yes, sir.

20          Q       And at this time were you at all personally  
21 alarmed that you personally had been exposed to radiation?

22          A       Was I alarmed? Yes, sir.

23          Q       It's a bad question, but how alarmed were you?  
24 Were you real concerned or real worried?

25               MR. BROOKS: Objection. Form of the question.

1 BY MR. BARTH:

2 Q Please state your state of mind, if you can recall  
3 it.

4 A Yeah. You could say that I was a little worried.  
5 I mean, not knowing how much radiation I had picked up  
6 because a personal dosimeter only reads to 200 MR before it  
7 goes off scale. And the only other device I have on my  
8 person is a film badge which reads the level of radiation  
9 that an individual has consumed in a month. And I had no  
10 idea of knowing how much it read until I brought it back to  
11 our shop.

12 Q Did you look at your personal dosimeter?

13 A Yes, sir.

14 Q In the sequence of what happened, can you tell me  
15 when?

16 A I looked at my personal dosimeter directly after I  
17 unlocked the slide bar and stepped out back into the  
18 hallway.

19 Q And what did it show?

20 A Off scale.

21 Q And for those of us who are not radiologists, what  
22 does off scale mean?

23 A Off scale, you have a scale from 0 to 200 on the  
24 scale and when your pocket dosimeter goes off scale any time  
25 during working that means that you have not necessarily

1 received more than 200 MR, but if there is an overexposure  
2 and it's off scale, you have received more than 200 MR.

3 Q I recall your saying the scale is from 0 to 200.  
4 What does the 200 represent?

5 A 200 MR at any time period.

6 Q MR stands for millirams?

7 A Yes, sir.

8 Q Well, what did you do then?

9 A That's when I retracted the source, made my survey  
10 and pulled the key out and went downstairs to talk to the  
11 Level 2.

12 Q What did you do when you went downstairs?

13 A I told Level 2 that I thought I had been  
14 overexposed by radiation and he told me I needed to contact  
15 my RSO, which at the time in the Gary Lab was Keith Tucker.

16 Q Since I'm not familiar with these titles, what is  
17 a Level 2?

18 A You have a trainee or an assistant and a Level 1  
19 and a Level 2. A Level 2 radiographer can interpret film.

20 Q Is that a person with more experience than you  
21 have?

22 A Yes. At the time, yes, sir.

23 Q And can you tell me his name if you recall?

24 A I can't recall his name. I mean, I'm sure if I  
25 think about it I will remember it.

1 Q Do you recall the situation which you talked to  
2 the Level 2?

3 A Yes, sir.

4 Q Can you run me through that? What did you do?

5 A I went downstairs to where our dark room is parked  
6 where he was processing film. And I had entered the back of  
7 the dark room, and I told him, I said, I think I have a  
8 problem. I think I might have got overexposed. And I'm not  
9 sure if he asked me how do I know or what, but I do remember  
10 him telling me you need to contact your RSO.

11 Q Did you show him your personal dosimeter?

12 A Yes, sir.

13 Q What time of day can you tell us? Do you recall?

14 A Like I said, our shift started, I want to say  
15 around 2:00 or 3:00 in the afternoon. And it was probably  
16 around between 5:00 and 7:00. I'm not real sure.

17 Q That's a good answer. And your Level 2 told you  
18 to contact whom?

19 A Our RSO, Radiation Safety Officer.

20 Q And who was that RSO?

21 A At the time Keith Tucker.

22 Q And where is Mr. Tucker's office located?

23 A Gary, Indiana.

24 Q Did you contact Mr. Tucker?

25 A Yes, sir.

1 Q This is somewhere between 5:00 and 7:00. Did you  
2 contact him at home or at the office or where?

3 A At home.

4 Q And did you -- how did you have his home phone  
5 number?

6 A I'm pretty good friends with him. I knew his  
7 number.

8 Q And what did Mr. Tucker advise you to do?

9 A He told me to sit tight and that's when he  
10 contacted Bob Slack.

11 Q And who is Bob Slack?

12 A Bob Slack was, I mean, to my knowledge, I guess,  
13 the senior RSO, for the Itasca Lab.

14 Q Which lab?

15 A The Itasca, Illinois Lab.

16 Q Mr. Reporter, do you need that spelled? I don't  
17 know. Was that Conam's home office?

18 A I believe so.

19 Q What happened -- where were you staying in  
20 Indianapolis?

21 A I was staying with a buddy of mine who lived  
22 there.

23 Q That's a good answer. We're talking 5:00 to 7:00  
24 p.m. And you've now talked to your Level 2 and you called  
25 Keith Tucker. What did you do next?

1           A     Keith told me to sit tight and he contacted Bob  
2     and I gave Keith the number where I was setting at, which  
3     was at Eli Lilly. And Bob Slack called me and asked me what  
4     had happened. And I went through with him.

5           Q     Do you recall when Mr. Slack called?

6           A     What time he called?

7           Q     Yes, sir.

8           A     No. Like I said, between 5:00 and 7:00 is when I  
9     made the calls.

10          Q     Did he call you that evening, the next morning?

11          A     He called me right away.

12          Q     Do you recall the actual date of the exposure,  
13     overexposure?

14          A     Not that the actual date. In February. I know.

15          Q     What did Mr. Slack tell you to do?

16          A     He told me to tear everything down and I need to  
17     come straight to Gary Lab and meet him at the Gary Lab at  
18     8:00 a.m., the following morning.

19          Q     Do you recall what day of the week this was even?

20          A     I want to say on a Wednesday or a Thursday.

21          Q     You're not sure?

22          A     Yeah. I'm not sure.

23          Q     But you are sure that Mr. Slack told you to come  
24     see him the next day?

25          A     Yes, sir.

1 Q At the Gary office or the Itasca office?

2 A He would meet me at the Gary office.

3 Q Did you spend the rest of the night in  
4 Indianapolis or did you drive back to Hobart or what did you  
5 do?

6 A I drove back to my home.

7 Q And where is your home?

8 A My home is in Hebron, Indiana.

9 Q And how far is that from the Gary office  
10 approximately?

11 A Thirty minutes, thirty minute drive.

12 Q And when did you meet Mr. Slack at the Gary  
13 office?

14 A The following morning after the accident at 8:00  
15 a.m.

16 Q 8:00 a.m.?

17 A Yes, sir.

18 Q Would you please in as best detail as you can  
19 recount what happened between you and Mr. Slack and part of  
20 that question is, was there anyone else present?

21 A When me and Mr. Slack had talked?

22 Q Yes.

23 A The next day. No, I just went over with him how  
24 the set-up was and how the source was sitting and told him  
25 what happened and how everything went.

1           Q     You described the physical circumstances of  
2 meeting with Mr. Slack? I assume you're in a room? How big  
3 a room? Where was he? Where were you? Was there a desk  
4 and a chair? Try to detail the whole thing as carefully as  
5 you recall how this occurred. For instance, we are at a  
6 U-shaped table with people sitting around talking. Tell us  
7 how this conversation with Mr. Slack went, please?

8           A     He came in the office. He and Keith Tucker at the  
9 time shared an office. And that's where I met him in that  
10 office. I'm not sure if we went in and stayed in there and  
11 did it or we went to another room. But, I mean, like I  
12 said, we went over what -- how my equipment was set up and  
13 what my exposure was and how I tore down and everything and  
14 how far away from the source that I thought I was.

15          Q     Do you recall in your discussion with Mr. Slack,  
16 were you seated in a chair or did you stand up?

17          A     I can't recall whether I was standing or sitting.

18          Q     Do you recall whether Mr. Slack was seated or  
19 standing?

20          A     No, sir.

21          Q     Do you recall was he behind a desk making notes?

22          A     He was making notes. I recall that, but, I mean,  
23 I don't -- if he was standing at a table, or if he was  
24 sitting on a chair or, I mean, it's over two years ago.  
25 It's been a while.

and you have any props for this discussion, that  
have a ladder?

Yes, sir.

Do you recall showing him where on the ladder you

Yes, sir.

and do you recall showing Mr. Slack where the  
the camera was on the ladder?

Yes, sir.

Were you interviewed by the NRC?

Yes, sir.

and did you go through a reenactment of what  
with the NRC?

Yes, sir.

Where did this occur?

At the Gary Lab.

Do you recall who was present during that

with Mr. Slack, myself, Mr. Young and I don't know if  
any other individuals or just one other individual  
was there. I don't recall his name.

I prompted you, does the name West or Phillips  
come with you?

Offhand. I mean, it could have been. I just  
mentioned Mr. Young a couple times.

1 Q Can you run us through the reenactment that you  
2 did with the NRC?

3 A They brought a ladder up. It was basically about  
4 the same height, the six foot step ladder, and we took it  
5 upstairs to where there was overhanging piping. And we did  
6 it up there and I showed them the position I was standing in  
7 while I was changing the shot and how I surveyed the camera,  
8 how I walked up to the camera and that's how I set up my  
9 shot and then proceeded down from the exposure set-up back  
10 to the crank.

11 Q Did you describe for the NRC the same survey that  
12 you just now described for us a few minutes ago?

13 A I believe so.

14 Q Can you have a better memory, think for a moment,  
15 a better answer, do you recall what you told the NRC?

16 A Yes, sir.

17 Q And what did you tell them about the survey?

18 A I told them that I walked up to the camera and did  
19 not survey the actual front on the camera. I couldn't walk  
20 around to the front of the camera. And I surveyed the side  
21 and seen that it red 30 or 40 MR or whatever and that it was  
22 pretty safe and that it was in the shut-off position.

23 Q And recalling your interview with Mr. Slack, did  
24 you describe the survey to Mr. Slack?

25 A Not that I can recall offhand. I mean, no, not

1 that I recall.

2 Q Try and think back to the meeting with Mr. Slack  
3 in the Gary office. Did you tell him when you first noticed  
4 the green tab on the left-hand back of the camera being  
5 exposed?

6 A Yeah. I recall telling him that the slide bar was  
7 not totally engaged all the way to the locked position.

8 Q In Mr. Slack's office, do you recall was there an  
9 Amersham camera on top of the ladder when you had your  
10 interview with him?

11 A I don't believe so. I'm not sure if there was or  
12 not. If they used an actual camera or if they used a model  
13 or if they used any at all. I'm not --

14 Q Do you remember climbing on the ladder to show  
15 your approximate position to Mr. Slack?

16 A Mm-hmm, because they were asking me how many steps  
17 I was up from the top or from the bottom and the position of  
18 my body.

19 Q Were there overhead pipes in Mr. Slack's office?

20 A No.

21 Q Or was this where this occurred?

22 A No. It wasn't done in the office. It was done in  
23 our Met Lab on top of, I don't know, I guess you could say  
24 it was storage upstairs. You had to walk up some stairs up  
25 to the top of the building and there was a storage area.

1 Q Do you recall being interviewed by the NRC after  
2 this exposure?

3 A Yes, I had an interview with them.

4 Q And did you tell the NRC employees that there were  
5 times when you did not check the locking mechanism on the  
6 camera after having made a shot?

7 A That particular time or any time?

8 Q Any time.

9 A I don't know. I can't tell. I don't know if I  
10 told them. It was a while ago, if I do it every time or I  
11 didn't. I mean, I'm sure if they asked me the question I  
12 told them no, that I don't do it 100 percent of the time.

13 Q Are you aware of other radiographers at Conam do  
14 when they make shots?

15 A Am I aware of what they do? Yes, sir.

16 Q Did people talk among yourselves?

17 A Yes, sir.

18 Q To the best of your understanding, are there  
19 radiographers who also on jobs do not check the locking  
20 mechanism on the camera?

21 A Yes, sir.

22 Q Do you have an explanation for why this is?

23 A No, not really. I guess just force of habit. I  
24 mean, you do something so much it just gets -- I don't know  
25 how to describe it. I mean, it's just like it just comes

1 second nature to you. I mean, you just get a rhythm.

2 Q Did other radiographers have high confidence in  
3 the machine working correctly?

4 A I'm sure.

5 Q Do you have any knowledge of Amersham 660's not  
6 working properly for other people?

7 A I do recall an incident in a cell, in our shooting  
8 cell where an individual who was doing radiography, the  
9 camera locked itself out and at the time Rich Gearhart was  
10 the RSO there and he got the source back into the shielded  
11 position.

12 Q Do you recall any other incidents, sir?

13 A Off the top of my head, no.

14 Q Was the Amersham camera checked out before you  
15 went out for a job as far as working mechanism?

16 A As far as the locking mechanism on it? Yes, sir.

17 Q Yes, sir. You had personal knowledge that the  
18 camera you used was checked before you went to Eli Lilly?

19 A I don't know because I don't know if I was -- I  
20 can't remember if I was the individual that particular week  
21 who checked the camera out and looked it over and looked our  
22 equipment over or if it was the Level 2 that was with us. I  
23 mean, because we came home every weekend.

24 Q After the exposure at Eli Lilly, to the best of  
25 your knowledge was the Amersham checked out as far as its

1 working mechanism?

2 A Yes, sir.

3 Q And what was the result of that check, sir?

4 A I mean, it seemed to lock like it should and, I  
5 mean, it seemed like it worked right. Not that if there was  
6 something wrong that, I mean, I'm not mechanically inclined  
7 enough to tell you if there was something wrong with it. I  
8 mean, it would do it every once in a while where it would  
9 not slide over all the way on some people. I mean, not that  
10 particular camera, but, I mean, just certain cameras where  
11 the slide bar would not click over to the locked position.

12 Q When you crank the source back in, you count the  
13 clicks?

14 A Count the clicks?

15 Q Count the number of rotations?

16 A Of the crank? Yes, sir.

17 Q Does the crank also come to a dead stop when the  
18 source is in?

19 A Yes, sir.

20 Q Do you crank quickly?

21 A Yes, sir. It cuts down on the radiation you  
22 receive.

23 Q To the best of your knowledge, is it your practice  
24 to count the rotations of the crank or crank quickly until  
25 it hits a stop for you?

1           A     No. Count your cranks in and out to be sure that  
2 you have as many cranks in as you do out.

3           Q     To make sure do you ever go beyond that just one  
4 more crank to see if the thing would go any further in?

5           A     You do. I mean, it's just when you crank you  
6 count your cranks and when it stops, I mean, you just hit it  
7 again real quick.

8           Q     Do you recall doing that at Eli Lilly on this  
9 particular February, which is two and a half years ago?

10          A     I don't know if I did or didn't. But I can tell  
11 you that it's nine cranks in and nine cranks out.

12          Q     In your office, did the company, I'll call them  
13 Conam, it refers to Mr. Slack, did these people periodically  
14 check out your ability to use an Amersham 660?

15          A     660B?

16          Q     Yes, sir.

17          A     Yes, sir. They performed audits.

18          Q     Can you tell me about those audits?

19          A     They just had you check a source out, do a survey  
20 when you check the source out, connect the source and its  
21 crank and to be sure that you knew how to set up and crank  
22 in, crank out and do your surveys.

23          Q     How often were these audits made, sir?

24          A     I'm not real sure. I mean, as far as a time  
25 frame, every six months, every three months. I'm not sure

1 how often they did them.

2 Q Were these audits announced in advance?

3 A No, not all the time.

4 Q When the audit was being conducted, were you  
5 especially careful to make certain that you operate the  
6 camera according to the instructions?

7 A Of course.

8 Q And was there pressure on you during the audit to  
9 operate the camera or was there pressure on you at Eli Lilly  
10 to do the shots in the field?

11 MR. BROOKS: Objection. Form of the question.

12 THE WITNESS: There was not as much -- I don't  
13 know. It's hard. I mean, down --

14 BY MR. BARTH:

15 Q I'll withdraw the question then. I'll withdraw  
16 the question, sir. Can you tell me some of the places where  
17 you made these camera shots? Eli Lilly is one in  
18 Indianapolis. Can you name some others?

19 A Citgo Oil, which at the time was again in Lemont,  
20 Illinois. Clark Oil in Blue Island, Illinois.

21 Q And I believe you testified you made somewhere  
22 between 100, maybe 200?

23 A Just a rough, I mean, as far as how many times  
24 have I used it or exposures, exposures are, you can do, I  
25 mean, for one pipe weld, there's three exposures for one

1 weld. I mean, you should need, depending on your job, if  
2 you have 20 welds to shoot, I mean, that's 20 times three.  
3 I mean, that's exposures. But individual times that I've  
4 taken the camera out and used the camera, maybe 100 to 200  
5 times. I mean, just off the top of my head.

6 Q At any of these times that you were making camera  
7 shots, did anyone from the company come and audit what you  
8 were doing?

9 A Me as an individual?

10 Q Yes.

11 A Not that I can remember.

12 Q Is my understanding correct that the company's  
13 knowledge of your ability to use machine came by the audits  
14 in the area office, is that correct?

15 A In the Gary office or if you were on site  
16 somewhere, they would come out and have you go through. I  
17 mean, if like at Citgo Oil, we had a trailer where we kept a  
18 radioactive source and we would pull the source out and  
19 connect, disconnect and for that. But, I mean, as far as in  
20 the field, I can't recall ever being in the field and having  
21 an auditor come out and audit me while I was performing an  
22 X-ray.

23 Q In your job did you see other radiography being  
24 done by other radiographers?

25 A Was I present when they were doing radiography?

1 Q Yes.

2 A Yes, sir.

3 Q To the best of your knowledge, did any of those  
4 people make surveys which did not encompass the entire  
5 perimeter of the camera?

6 A Yes, sir.

7 Q To the best of your knowledge, did any of those  
8 people lock the camera and shut the locking mechanism  
9 immediately after they had cranked in the source?

10 A There have been times when they didn't and there's  
11 times when they do. I mean, I can recall times that they  
12 didn't check them, didn't make sure the camera was locked by  
13 pushing the plunger down.

14 Q Again, referring to your personal experience, when  
15 you saw this by other radiographers, at any time during  
16 these other radiographs were company inspectors or company  
17 officials present to audit what was going on in the field?

18 A At the time, no.

19 Q To the best of your personal knowledge, is there  
20 any way that the senior radiation safety officer, Mr. Slack,  
21 has had any real personal knowledge of how the radiology is  
22 being done in the field?

23 A You know, unless somebody had told him. I mean,  
24 personally I had never seen him out in the field.

25 Q Did you ever see him or any of his home office

1 inspectors while you were performing radiography or while  
2 you were watching other people perform radiography?

3 A I'm sure they did, but I can't recall if they did.  
4 I mean, I don't know exactly what times that they did. I  
5 mean, they did do on occasion audits in the field, but, I  
6 mean, for the most part my recollection of audits were done  
7 with just a camera and not being in use. I mean, you  
8 weren't actually performing an X-ray.

9 Q These audits in the field that you've just cited,  
10 sir, is it correct to say that these were not done while  
11 actual radiography was being done?

12 A Yes, sir.

13 MR. BARTH: I would like to have about maybe a ten  
14 minute break.

15 MR. BROOKS: Let's just go off the record.

16 MR. BARTH: It's 11:41 a.m.

17 [Recess.]

18 BY MR. BARTH:

19 Q Mr. Chastain, were the reenactment for Conam and  
20 the reenactment for the NRC performed in the same location?

21 A Yes, sir.

22 Q Now, were they performed in the same room?

23 A I'm not sure when I had my reenactment with Bob I  
24 don't know if we did it in that office or if we did do it  
25 upstairs.

1 Q I would like to take you back, if I may, to when  
2 you approached the camera with your survey meter. When you  
3 approach the camera, where is your dosimeter located?

4 A My dosimetry is in front, in my fanny pack.

5 Q In front.

6 A In front of my body.

7 Q And as you climbed the ladder, where was this?

8 Didn't I have a question? Is there a question pending?

9 When you climbed the ladder, where was the location of your  
10 dosimeter?

11 A I believe it was still in front of me at that  
12 time.

13 Q And when you made your survey, where was the  
14 dosimeter?

15 A Before I climbed the ladder?

16 Q I think you testified -- did you make your survey  
17 from the ground?

18 A Yes, sir.

19 Q And where was your fanny pack during the survey?

20 A In front of me.

21 Q When you climbed the ladder, what did you do?

22 A I put my survey meter on a cart that was just on  
23 the other side of a ladder and I climbed up to the top to  
24 the ladder and turned around. I set my film just right  
25 across from me there was an I-beam where I laid my unexposed

1 film and then I turned, and as I turned, that's when I would  
2 usually grab my fanny pack and spin it around to the back of  
3 me and set up my shot, which was overhead, and then take my  
4 stuff down, reach over the back of the camera and then  
5 unlock it.

6 Q And how were you in position to the ladder at this  
7 time? Were you facing the ladder or facing away to change  
8 film?

9 A I was facing away from the ladder, I'm pretty  
10 sure, to change the shot. Because if I walked up on the  
11 camera, then I climbed up the ladder, my shot was kind of  
12 over here and the ladder was here. So I had to turn away  
13 from the ladder.

14 Q And to get room to work, you moved the dosimeter  
15 to your back?

16 A Mm-hmm.

17 Q And where was the camera with the exposed source  
18 at the time?

19 A It would have been towards my back.

20 Q That would have been -- would your dosimeter have  
21 been closer to the source at this time?

22 A Yeah.

23 Q Than if you had left the dosimeter in front?

24 A Yes, sir.

25 Q How long did it take you to tear down the film

1 that you had already exposed? Do you have any idea?

2 A If I remember right, I think my shot time was, I  
3 don't know, somewhere around a minute when I carry the  
4 source. My set-up time was probably a minute and a half,  
5 two minutes.

6 Q Now, set-up time is that the time it takes to put  
7 new film in?

8 A Yes, sir. The time it takes to tear off the film  
9 that you had just exposed and set up the next exposure.

10 Q You went through this, did you not, with the NRC  
11 in their interview in April 1996?

12 A Yes, sir. I believe so.

13 Q Do you have a feeling for whether it being closer  
14 to the time of the accident your memory would have been  
15 better at this time?

16 A If we would have done this two years ago, yeah,  
17 just a little bit.

18 Q When you explained the incident to the NRC, do you  
19 now recall that at that time you had a clear recollection of  
20 whatever transpired?

21 A Then I would say I had a pretty clear  
22 recollection. I mean, I met with them twice. I talked to  
23 Bob. I talked to Keith. So I had to tell everybody what  
24 had happened. I mean, after repeating myself ten times what  
25 had happened, yeah, I had a pretty good recollection.

1 Q I refer you back to Government Exhibit No. 4.  
2 It's the diagram of the camera sitting on top of the ladder.  
3 To the best of your recollection, is this an accurate  
4 depiction of the situation?

5 MR. BROOKS: Object to the form of the question.

6 THE WITNESS: Accurate in how the camera is  
7 sitting?

8 BY MR. BARTH:

9 Q Accurate in all details.

10 A Like I said before, the camera was not facing  
11 towards the steps. The open end of the source was not  
12 facing towards the open stairs of the ladder. It was turned  
13 more away from the stairs of the ladder.

14 Q Are you confident that when you went through your  
15 reenactment with the NRC that you effectively explained  
16 everything to the NRC inspectors?

17 MR. BROOKS: Object to the form of the question.

18 THE WITNESS: Being a kid and nervous, yeah, I  
19 think I kind of described everything as best as I could.

20 BY MR. BARTH:

21 Q Do you recall a cable hanging down the steps of  
22 the ladder, that is the control cable?

23 A I don't remember if they were hanging down the  
24 stairs. I mean, they shouldn't have been hanging down the  
25 stairs of the ladder, the step ladder.

1 Q Do you recall whether you had to avoid the cable  
2 while you climbed up the ladder or climbed down the ladder?

3 A No.

4 Q If I suggest to you a Mr. Morell, does that  
5 suggest to you the name of who your Level 2 was?

6 A Arnie Morell. Yeah. I think that was it.

7 Q Does that refresh your recollection?

8 A Yeah. Arnie Morell.

9 Q That's the man you came downstairs and told, hey,  
10 I got a problem?

11 A Yes, sir.

12 MR. BARTH: I have no further questions,  
13 Mr. Chastain. Let me say this. Personally, and on behalf  
14 of the NRC, I do appreciate your taking the time to come and  
15 talk to us. I know you've got a family, you've got a job,  
16 and this is away from home. I really appreciate your doing  
17 this. It's been a pleasure to talk to you. Where we go  
18 from now is, I think it would be smart to break for lunch.  
19 After lunch Mr. Brooks for Conam has the opportunity to ask  
20 you some questions along these lines we've discussed.

21 MR. BROOKS: I think Mr. Chastain has places to go  
22 and people to see. So I don't mind taking a lunch break,  
23 but just out of courtesy to him, if we could make it a short  
24 one somehow.

25 THE WITNESS: That would be --



1 then he called me again to reschedule the meeting.

2 Q And I appreciate your rescheduling. That was  
3 because one of my partners was in an accident.

4 A Oh, that was no problem.

5 Q That's why you got the pleasure of my company here  
6 today. When you talked to Mr. Barth the first time, did you  
7 talk about what happened in that February 1996 incident at  
8 all?

9 A No.

10 Q Did he ask you questions about where you were on  
11 the ladder and that sort of thing?

12 A No.

13 Q The second time when he rescheduled do you  
14 remember him talking about what happened in the February  
15 1996 incident?

16 A No, not at all.

17 Q So what else did you talk about with Mr. Barth  
18 besides the scheduling of your deposition here?

19 A The weather, I mean, traffic was. That's about  
20 it.

21 Q Have you read anything to refresh your  
22 recollection or get ready for your deposition today?

23 A No. Like I said, I haven't taken any notes, I  
24 mean.

25 Q Do you have a file of materials that relate to

1 this matter?

2 A Personally? No.

3 Q Does somebody else have a file that you know of?

4 A Conam.

5 Q Okay. Have you talked to an attorney about your  
6 deposition here?

7 A No. I was told that I would not need one. If I  
8 wanted one I could have one.

9 Q Who told you that?

10 A Mr. Barth, I believe.

11 Q Based on what Mr. Barth has told you you decided  
12 not to have an attorney present with you?

13 A Yes, sir.

14 Q Okay. Mr. Barth asked you a question toward the  
15 end of his questioning about whether your memory of the  
16 incident is better today or back in 1996, do you remember  
17 that?

18 A Yes, sir.

19 Q You thought your memory might have been better in  
20 '96?

21 A Yes, sir.

22 Q I just want to go over the times on which you've  
23 been asked to tell what happened here, because I know you've  
24 been asked a few times. I guess the first time that you  
25 told what happened was to Arnie Morell the day of the

1 incident?

2 A Yes, sir.

3 Q And then the second time would have been the day  
4 after the incident when you met with Mr. Slack?

5 A Mm-hmm.

6 Q You have to say yes or no.

7 A Yes.

8 Q Okay. Just so it gets picked up here on our  
9 machine. And then about a month and a half later as I  
10 understand it the NRC met with you in Gary and you did a  
11 reenactment of the events?

12 A Yes, sir.

13 Q And then do you recall that in, I guess, about  
14 September of 1996 a guy named Dick Anderson came and  
15 interviewed you about what had happened, a guy from the NRC?

16 A Yes, sir. I believe that was in the Itasca Lab.

17 Q Okay. And then obviously you've been asked to  
18 come here today to tell the story again, right?

19 A Yes, sir.

20 Q Have you been interviewed about what happened in  
21 that February 1996 event at any times other than the ones we  
22 just went through?

23 A No, sir, just by individual peers, I mean. That  
24 would be it.

25 Q That is, other radiographers asked you what

1 happened?

2 A Yes, sir.

3 Q Now, following up on Mr. Barth's question to you,  
4 would it be fair to say that your memory of the events was  
5 the freshest during the earliest descriptions that you gave  
6 of those events, the ones that you gave the day of the event  
7 to Mr. Morell and the day after the event to Mr. Slack?

8 A Yes, sir.

9 Q So if we wanted to get your best recollection of  
10 what happened, we should look at what you told Mr. Morell  
11 and Mr. Slack the day of the event and the day after?

12 A Yes, sir.

13 Q Let me just mark this Conam Deposition Exhibit 1.  
14 Thank you. Mr. Chastain, the court reporter has placed  
15 before you what's been marked as Conam Deposition Exhibit 1,  
16 which is a three-page handwritten document on lined paper.  
17 Have you ever seen this document before?

18 [Conam Deposition Exhibit 1 was  
19 marked for identification.]

20 A Yes, sir.

21 Q Can you describe what it is?

22 A It's basically what happened. At the time of the  
23 incident I was told to write what happened in my own words  
24 what happened while I was down there.

25 Q I'm sorry.

1 A Bob Slack.

2 Q Bob Slack asked you to write something?

3 A Yes, sir.

4 Q Did he tell you what to write?

5 A No, sir.

6 Q What did he tell you?

7 A He just told me to the best of my knowledge write  
8 exactly what happened from the time I got to work to the  
9 time the incident happened.

10 Q And this document, which is Deposition Exhibit 1,  
11 is what you created?

12 A Yes, sir.

13 Q On what day, if you know, did you write this  
14 document that's marked as Deposition Exhibit 1?

15 A I don't know if I dated it or not. On 2-28-96.

16 Q February 28, 1996?

17 A Yes, sir.

18 Q Where were you when you prepared this document?

19 A I was at the Gary Lab.

20 Q And is that when you met with Mr. Slack to explain  
21 what had happened in the incident?

22 A Yes, sir.

23 Q Okay. Let's place the incident in time now. What  
24 day was it that the incident that we've been asking you  
25 about occurred?

1           A     Like I said before, I mean, it happened on  
2 February 27th, but as far as a day, I don't know which week  
3 day.

4           Q     I just asked you for the date.

5           A     Okay.

6           Q     So you've got it nailed at February 27, 1996?

7           A     Yes, sir.

8           Q     Okay. Now, would you turn to the last page of  
9 Deposition Exhibit 1, which shows a drawing. Is that a  
10 drawing that you prepared?

11          A     Yes, sir.

12          Q     Also on February 28th?

13          A     Yes, sir.

14          Q     And what is this a drawing of?

15          A     This is a drawing of the room which I was in and  
16 it shows the position of my ladder, the door, the double  
17 doors where I had to run and crank out to the hallway. It  
18 shows the dimensions of the room I was in and the confined  
19 cluster it was in.

20          Q     I'm going to just ask you some questions. I'm not  
21 going to ask you questions about Deposition Exhibit 1 here,  
22 your handwritten notes, but if at any point you want to  
23 refer to them, just say I would like to refer to them and  
24 we'll allow you to do so, if it helps you in any way.

25          A     Okay.

1 Q Now, when you went to work on February 27th, who  
2 from Conam was, is it Conam or Conam?

3 A Conam.

4 Q Who from Conam was at the Eli Lilly plant?

5 A On February 27th when I went there?

6 Q Yes, sir.

7 A Me and Arnie Morell.

8 Q Okay. Who was supervising you in the sense of  
9 telling you what shots to take?

10 A Eli Lilly's, I guess, my liaison for Eli Lilly was  
11 telling me what needed to be X-rayed and they marked the  
12 welds that they wanted X-rayed.

13 Q Mr. Barth asked you some questions as to whether  
14 you felt a pressure to keep moving in your photography?

15 A Yes, sir.

16 Q Was the pressure that you felt, did that come from  
17 someone at Eli Lilly?

18 A It wasn't, like I said, it wasn't so much pressure  
19 from anybody, it was just that Eli Lilly said that they  
20 wanted more X-rays to be taken on the pipe welds and they  
21 notified -- they mentioned something to me and then they  
22 mentioned something to the supervisors at Conam in the Gary  
23 Lab and they took that up with them. And Keith had  
24 mentioned to me, he said, shoot all that you can in the time  
25 they give you. He said shoot from the time you get there to

1 the time you go home. He said, just have Arnie keep running  
2 the film. And that's why I was upstairs by myself shooting  
3 it.

4 Q And the Keith that you refer to is Keith Tucker?

5 A Yes, sir.

6 Q And Arnie is Arnie Morell?

7 A Yes, sir.

8 Q So did anybody pressure you to move faster in your  
9 photography or your radiology at all, radiography?

10 A They just told me to shoot as much as I could. I  
11 mean, not in so much telling me, you know, get it done, but  
12 kind of --

13 Q Keep to the job?

14 A Yeah.

15 Q They never told you to move faster or to take  
16 short-cuts or anything, did they?

17 A No, sir.

18 Q And specifically, did Arnie Morell tell you to  
19 move faster or take any short-cuts?

20 A No, sir.

21 Q Did anyone from Conam tell you to move faster or  
22 take any short-cuts to get your work done at Eli Lilly?

23 A No, sir.

24 Q Mr. Barth asked you some questions about your  
25 training in radiography. Is it fair to say that you were

1     taught to do a 360 degree survey of the camera or device  
2     after a shot was taken?

3             A     Yes, sir.

4             Q     And were you told why conducting a 360 degree  
5     survey was important?

6             A     Yes, sir.

7             Q     Why was that?

8             A     To be sure that the source is in the shielded  
9     position.

10            Q     And can you explain why it is important to make  
11    sure that the source was in the shielded position?

12            A     So to prevent any overexposures to you or anyone  
13    else.

14            Q     So you had a personal interest in seeing that the  
15    source was in a shielded position?

16            A     Yes, sir.

17            Q     Okay. And now, Mr. Barth asked you some questions  
18    about the various devices that you had in your fanny pack.

19            A     Yes, sir.

20            Q     Is it your custom to use a fanny pack?

21            A     Yes, sir.

22            Q     And what kind of a fanny pack did you use?

23            A     It was just basically a belt with a bag in front  
24    and it clipped on. You have two pockets on it.

25            Q     What was it made out of?

1           A     Like a real thin canvas.

2           Q     And you just kept that strapped around your waist  
3 when you were working?

4           A     Yes, sir.

5           Q     You must have kept it pretty loose around your  
6 waist so that you could move it if you needed to, right?

7           A     Yes, sir.

8           MR. BARTH:  Objection.  That's leading.

9           THE WITNESS:  --

10          MR. BARTH:  Please don't answer while there's an  
11 objection.

12          THE WITNESS:  Okay.

13          MR. BARTH:  I'm sorry.  Answer the question when  
14 there's an objection.

15          MR. BROOKS:  Let's go off the record for a second.  
16 Because I want to clarify sort of our procedural rules here.

17                   [Discussion off the record.]

18          BY MR. BROOKS:

19          Q     I'm sorry.  I was asking you if you kept your belt  
20 loose, your fanny pack loose around your waist?

21          A     Somewhat loose.  Not so loose that it would hang,  
22 but, I mean, loose enough where I could turn it.

23          Q     Okay.  And when you were doing radiography, what  
24 did you normally keep in your fanny pack?

25          A     My dosimeter, film badge, my alarm, maybe a tape

1 measure for measuring distances.

2 Q Had you received training from Conam in the  
3 importance of having a dosimeter, a RAD alarm and film badge  
4 with you when you were conducting radiography?

5 A Yes, sir.

6 Q Had you received training from Conam on how the  
7 dosimeter works?

8 A Yes. Like I said, the radiation safety that we  
9 were put through. I don't recall if it was with Conam or  
10 SGS, but the 40 hour course.

11 Q Forty hour course at Moraine Valley Community  
12 College that you mentioned covered the importance of having  
13 your dosimeter and how it worked?

14 A Yes, sir.

15 Q And is that also true of the RAD alarm?

16 A Yes, sir. Well, they didn't come on that RAD  
17 alarm, because different outfits use different methods of,  
18 you know, I don't know if everybody uses a RAD alarm. They  
19 didn't go a whole lot into our personal RAD alarm.

20 Q And did you cover in your course what a film badge  
21 is and why that's important?

22 A Yes, sir.

23 Q And where would you get a film badge?

24 A I received a film badge from Conam Inspection.

25 Q Can you explain what a film badge is, just

1 briefly, any technical descriptions?

2 A It's basically just a piece of film that's carried  
3 on your person that at the end of every month it's sent away  
4 and it will tell you how much radiation you received in that  
5 month.

6 Q In your work at Conam, were you given the results  
7 of your monthly badge measurement?

8 A Yes, sir.

9 Q Who gave those to you?

10 A They were just posted. I mean, they were posted  
11 up on the board and if you wanted to see what you got, then  
12 you just go up there.

13 Q And did you normally look to see what your reading  
14 was?

15 A Yes, sir.

16 Q What normally would you have as a reading on your  
17 film badge in a month, normal average month when you were  
18 doing radiography?

19 A Normal month about 100, 120.

20 Q And do you remember what your film badge had shown  
21 for the MR for the month of January 1996?

22 A I don't recall exactly what it was. I mean, I  
23 wasn't really doing a whole lot of radiography. I mean, I  
24 wasn't allowed to.

25 Q So at the beginning of every month then you turned

1 in your old badge for the previous month and got a new badge  
2 from Conam?

3 A Yes, sir.

4 Q Okay. And was that true also for the month of  
5 February 1996?

6 A Yes, sir.

7 Q How much radiography did you do in February 1996  
8 before this incident on February 27, 1996?

9 A The whole month of February.

10 Q And when you say the whole month of February, five  
11 days a week?

12 A Five days a week, Monday through Friday.

13 Q Was that a heavier schedule of radiography than  
14 you had done in previous months?

15 A Yes, sir.

16 Q Can you compare the two for me, as to how much  
17 radiography you were doing the previous month compared to  
18 how much you were doing in February of 1996?

19 A Radiography that I did before February at the Eli  
20 Lilly plant was mostly consisted of profile X-ray, maybe  
21 once or twice a week. At Citgo Oil or Clark Oil, I was  
22 never on a job, I mean. It just kept going from the  
23 beginning of the month to the end of the month on  
24 radiography in doing the actual shooting.

25 Q So February of 1996 was the first time that you

1 had in your work for Conam stayed at one place for a month  
2 and doing almost exclusively radiography?

3 A Yeah, that I can recall, by myself. Like I said,  
4 doing the actual shooting. I've been on jobs and been there  
5 for a while on the RT crew, but like I said, just as an  
6 assistant, hanging ropes.

7 Q So were you at Eli Lilly then doing radiography  
8 for the entire month of February?

9 A Yes, sir.

10 Q Until the incident on February 27, 1996?

11 A Yes, sir.

12 Q So your film badge that you had in your fanny pack  
13 on February 27, 1996, would show your radiation exposure for  
14 the entire month of February 1996?

15 A Yes, sir.

16 Q Now, when you went to work and started doing your  
17 radiography on February 27, 1996, at Eli Lilly, did you have  
18 your fanny pack on that day?

19 A Yes, sir.

20 Q Did you have your dosimeter in your fanny pack?

21 A Yes, sir.

22 Q And an alarm RAD meter?

23 A Yes, sir.

24 Q Was the alarm and RAD meter turned on?

25 A Yes, it was.

1 Q How do you know it was turned on?

2 A Prior to the shift I was in the back of the dark  
3 room and that's when my dosimeter was in the back of the  
4 dark room. I turned my RAD meter on and put everything in  
5 my fanny pack. And when I went upstairs to perform my  
6 X-ray, I pushed a cart upstairs. They had a three-inch  
7 valve that was hanging off of another valve that they were  
8 installing and it was hung by wire and I remember finding a  
9 piece of wire and pushing in the LED to make sure that it  
10 was working properly. And I threw it back in my fanny pack  
11 and just carried on about my work.

12 Q So there's a small little hole in the alarming RAD  
13 meter?

14 A Yes, sir.

15 Q And if you stick a little metal object into that  
16 hole, it can test to see if it works?

17 A Yes, sir.

18 Q You tested it before you started your radiography  
19 on February 27th?

20 A Yes, sir.

21 Q And then you put it back in your fanny pack?

22 A Yes, sir.

23 Q And was your film badge in your fanny pack when  
24 you started your radiography on February 27, 1996?

25 A Yes, sir.

1 Q Was there anything else in your fanny pack that  
2 you recall when you started doing your radiography on  
3 February 27, 1996?

4 A Not that I know of. Like I said, maybe a tape  
5 measure. That's about the only thing I use, or an ID, my  
6 film was the only thing that I keep in there.

7 Q Okay. Now, before the shot in question, about how  
8 many radiographic shots did you do?

9 A That night?

10 Q That night, on February 27, 1996?

11 A I don't know. I know I have in here how many I  
12 shot.

13 Q You're going to look at Deposition Exhibit 1,  
14 Conam Deposition Exhibit 1.

15 MR. BARTH: For the record, Mr. Chastain, would  
16 you please answer his question?

17 BY MR. BROOKS:

18 Q I'm sorry. I was just asking if you were looking  
19 at your notes.

20 A Yes, sir. I'm sorry. Yeah. It says right here.  
21 I made 15 exposures.

22 Q Okay. And to the best of your recollection, is  
23 that about how many exposures that you had made before the  
24 incident in question?

25 A Yes, sir, seven welds.

1 Q Excuse me?

2 A Approximately seven welds from a 3:30 start to a  
3 6:30 when it happened. That's about right, seven welds.

4 Q Okay. Now, when the incident that we were talking  
5 about happened, were you on your first, your second or your  
6 third shot of the weld?

7 A I was on my second shot. It was a zero and a 90  
8 on a two-inch. I was on my second shot. I had made my  
9 first shot at zero view and had cranked it on. That's when  
10 the incident happened, while I was setting up my last shot,  
11 my second shot.

12 Q When you say your second shot, you were just two  
13 shots on that weld?

14 A Yes, sir.

15 Q You said in response to questions from Mr. Barth  
16 some welds require three shots?

17 A Yes, sir.

18 Q Which ones require two and which ones require  
19 three?

20 A Depending on, I mean, on a two-inch you can show  
21 the weld elliptical or you can shoot it elliptical and see  
22 both walls. I mean, that would be the best. That's the way  
23 I usually shoot them. But if it's in a position where I  
24 can't position my clamp back enough to get it, I have to  
25 shoot it in three shots.

1 Q This one in particular where the incident occurred  
2 was one where you could do it in two shots?

3 A Yes, sir. I'm pretty sure.

4 Q Okay. So, before this incident occurred, you  
5 would have completed your first shot on the weld?

6 A Yes, sir.

7 Q And I'd like to just sort of go through the  
8 incident again with you. At that point then you came into  
9 the room, is that right?

10 A Yes, sir.

11 Q And you've got your survey meter in your hand?

12 A Yes, sir.

13 Q Right hand or left hand?

14 A Right hand.

15 Q Now, at this point you had in mind the importance  
16 of conducting a 360 degree survey of the device?

17 A I'm sorry?

18 Q You knew that you were supposed to conduct a 360  
19 degree survey of the device?

20 A Yes, sir.

21 Q And under the rules are you also supposed to  
22 conduct a survey of the guide tube?

23 A Yes, sir.

24 Q And was it your normal practice to do that?

25 A Yes, sir. You started from the back of the camera

1 and the first thing I check is, I take it and run it down  
2 the guide tube and bring it just, I mean, not actually on  
3 top of the guide tube or anything. I mean just in a close  
4 distance within 90 carries of the radium that's in the guide  
5 tube. You'll know as soon as you open the door.

6 Q For the sake of clarity now, what is the guide  
7 tube that we're talking about here?

8 A The guide tube is a tube that's connected to the  
9 front of the camera where the actual source comes out into  
10 the colonater.

11 Q The guide tube then runs from the front of the  
12 camera up to what you're calling a colonater?

13 A Yes, sir.

14 Q And what is a colonater?

15 A A colonater shields your -- directs your radiation  
16 to what you're shooting at.

17 Q So the colonater is the business end of the guide  
18 tube that you put in the spot where you're going to take  
19 your radiography?

20 A Yes, sir.

21 Q Now, you said that the conditions at Eli Lilly  
22 were kind of cramped?

23 A Yes, sir.

24 Q Now, if there was room to conduct a 360 degree  
25 survey of the camera, would you have done so?

1           A     I'm sure.

2           MR. BROOKS:  Hang on one second.

3           Let's go off the record for just a second here.

4           [Discussion off the record.]

5           BY MR. BROOKS:

6           Q     Let's go back on the record.  Mr. Chastain, the  
7     court reporter has placed before you two photographs marked  
8     as Conam Deposition Exhibit 2 and Conam Deposition Exhibit  
9     3.  Have you ever seen those photographs before?

10   [Conam Deposition Exhibits 2 and 3  
11   were marked for identification.]

12          A     I don't believe I have.  I knew they were taken.  
13     I've just never seen them before.

14          Q     And who do you know took them?

15          A     Arnie Morell.

16          Q     And how do you know that?

17          A     Because he told me he was going to.

18          Q     Okay.  When did he tell you that he was going to  
19     take these pictures?

20          A     Towards the end where we were just getting ready  
21     to leave.  He said maybe we should take some pictures of it  
22     and put it down.

23          Q     Did these pictures accurately represent the scene  
24     at Eli Lilly where the incident that we've been talking  
25     about occurred?

1 A Yes, from what I can tell.

2 Q Now, let's just look for a moment at Conam  
3 Deposition Exhibit 2.

4 A Which one would that be?

5 Q I'm sorry. The one that's taken from farther away  
6 from the ladder. This one right here. Now, you had  
7 mentioned before that you had a cart that you would put  
8 things on?

9 A Yes, sir.

10 Q Is that the cart shown on the lower left-hand  
11 corner of Deposition Exhibit 2?

12 A Yes, sir.

13 Q That's the cart you were talking about?

14 A Yes, sir.

15 Q Okay. And then there's a ladder in the center of  
16 this picture. Is that the ladder that you've been  
17 discussing?

18 A Yes, sir.

19 Q And then there's a device up on the top of the  
20 ladder. Is that the Amersham 660B camera that you were  
21 talking about?

22 A Yes, sir.

23 Q And where is it from this perspective, that is the  
24 door that you would come in and out of the room from?

25 A Directly behind the ladder.

1 Q Okay. So if you look through the ladder you see  
2 the door that you come in and out of?

3 A Yes, sir.

4 Q Now, when you were using the crank for the camera,  
5 where were you standing when you used the crank?

6 A Out in this hallway out here. If you go outside,  
7 there's a hallway.

8 Q So looking at Deposition Exhibit 2 and you look  
9 past the camera, what you see are some doors and those doors  
10 go to a hallway?

11 A Yes, sir.

12 Q And that's the hallway where you stood when you  
13 cranked the source in and out?

14 A Yes, sir.

15 Q Okay. Now, still looking at Deposition Exhibit 2,  
16 the picture from farther away, is the angle shown here for  
17 the device at the top of the ladder about where you remember  
18 it being?

19 A I thought it was turned away from me, I mean, from  
20 the pictures. It doesn't show that.

21 Q Did you or do you recall moving the camera  
22 yourself after the incident?

23 A I don't recall moving it.

24 Q You might have but you don't remember?

25 A I might have.

1 Q Do you remember Mr. Morell telling you whether he  
2 had moved the camera or not?

3 A I don't remember.

4 Q As the picture, as you're looking at the picture  
5 here, Deposition Exhibit 2, the picture from farther away,  
6 the end of the camera that's on the right-hand side, is that  
7 the end where the source comes out of it?

8 A Yes, sir.

9 Q How can you tell that?

10 A Because that's the guide tube, the connection on  
11 the front, and that's the open end of the port on the  
12 camera.

13 Q And the hose or tube coming out of that end of the  
14 camera on the right-hand side of Deposition Exhibit 2, is  
15 that what you're calling the guide tube?

16 A Yes, sir.

17 Q And where does that guide tube go to in Deposition  
18 Exhibit 2?

19 A If you look just above the lights, you can see  
20 where it runs up and that's probably about, I don't know,  
21 from the looks of the picture maybe three, four foot above  
22 the ladder.

23 Q Okay. So now, after you got done shooting your  
24 first shot on the weld in question here, you were out in the  
25 hallway behind the door in this picture, right?

1 A Yes, sir.

2 Q And at that point you cranked the source what you  
3 thought was all the way in?

4 A Yes, sir.

5 Q What did it feel like when you cranked the source  
6 in that you remember?

7 A The stop, where it stops.

8 Q Let me ask you this about memory here. Is it fair  
9 to say that once you saw that the bar wasn't slid all the  
10 way over and there was a possibility that the source was  
11 still in the camera, do you have a real clear recollection  
12 of those events?

13 A Oh, yes.

14 Q Okay. Before that happened, was there anything  
15 special about this particular shot to make you remember  
16 things?

17 A Just that it was up in the air and it was a bear  
18 to get to.

19 Q And in that respect it wasn't really any different  
20 than the other 15 shots that you had done that night?

21 A Yeah, because this was when I moved up in the air.  
22 Everything else was shot from the ground. In this shot here  
23 I was moving up to the air, to shoot the rest of the welds.

24 Q So how many shots before this one had you been up  
25 in the air, shooting up in the air?

1           A    I'm not quite sure.  I don't know how many welds I  
2   had up there.

3           Q    Do you think it was more than one previous weld up  
4   in the air in the pipes that you had done?

5           A    Yeah, probably so.

6           Q    So at the time of the incident you had already had  
7   some experience with going up, taking the shots, moving the  
8   film, taking another shot, right?

9           A    Yes, sir.

10          Q    And then after you're done with your two or three  
11   shots, whatever was required, then you would move the  
12   colonater?

13          A    Yes, sir.

14          Q    So on the particular shot when the incident  
15   occurred, when you went back into the room, you weren't  
16   going back in to move the colonater, were you?  I'm sorry.  
17   Strike that.

18                    You didn't have to move for a different weld?

19          A    When I went in to shoot again?  No, I was shooting  
20   the second shot on that weld.

21          Q    Okay.  But you did have to move the colonater  
22   around to the other side of the weld?

23          A    Yes, sir.

24          Q    Okay.  Now, looking at Deposition Exhibit 3 for a  
25   moment, the picture that's more close up?

1 A Yes, sir.

2 Q Does that show the same scene as Deposition  
3 Exhibit 2, only just from closer up?

4 A Yes, sir.

5 Q Now, again, the device at the top of the ladder is  
6 the Amersham camera that we've been discussing, right?

7 A Yes, sir.

8 Q Now, when Mr. Barth was asking you about the  
9 locking mechanism that you testified about, where on the  
10 camera is that locking mechanism?

11 A If you look to the left of the camera, the very  
12 end of the camera where the guide tube or the crank goes  
13 into the camera, I mean, it's actually you cannot see the  
14 locking mechanism from here.

15 Q That end of the camera is pointing -- that end of  
16 the radiograph camera is pointing away from Arnie Morell's  
17 camera, is that right?

18 A Yes, sir.

19 Q Then you can see that there is the line coming out  
20 of the back end of the camera and going towards the door in  
21 that picture, right?

22 A Yes, sir.

23 Q Okay. And that's where your crank was?

24 A Yes, sir.

25 Q Now, after you took your first shot and you

1 cranked in the source, do you actually remember cranking in  
2 the source that time or does that blend into the other  
3 cranks?

4 A I mean, like I said, it's second nature. I mean,  
5 you do it.

6 Q I understand. I'm trying to get your best  
7 recollection and if your best recollection kind of blends  
8 into the other cranks that you did, I just want to know  
9 that.

10 A No, I don't remember cranking that one other than  
11 any other one.

12 Q So as to that particular crank at the end of the  
13 -- when you thought you had the source pulled in, you don't  
14 have a specific recollection as to what that crank felt like  
15 on that particular time, do you?

16 A Well, if it would have felt any different than any  
17 other time, I would have noticed, because, like I say, you  
18 do it so much that if something's not right, then you notice  
19 it.

20 Q When you crank the crank all the way in, so it  
21 feels like the source is all the way inside the camera, what  
22 does that feel like when it's all the way in, can you  
23 describe that?

24 A It's -- when you crank the source in, it stops and  
25 it's kind of, I don't know, like spongy, like it's got a

1 spring and it holds on it.

2 Q Okay. So when you cranked it all the way in, it  
3 won't crank anymore, right?

4 A No, sir.

5 Q Is that correct?

6 A Oh, yes, sir.

7 Q I asked the question badly. And I apologize. You  
8 say it's sort of springy so that when the source is all the  
9 way in there's still some play in the crank handle, right?

10 A Yes, sir.

11 Q You can turn it a quarter of a turn, maybe a  
12 quarter of a turn?

13 A Yes, sir.

14 Q And that doesn't actually move the source at all  
15 at that point, right?

16 A If the sliding mechanism clicks over to stop it.  
17 But if the sliding mechanism doesn't come back and slide  
18 over, I mean, you can crank it right back out.

19 Q Okay. So if you crank the crank all the way in  
20 and it's locked, right?

21 A Yes, sir.

22 Q Then there's still no play in the crank. It will  
23 be spongy. It will move a little bit?

24 A Yes, sir.

25 Q You would know the source was all the way cranked

1 in?

2 A Yes.

3 Q And if you crank the crank all the way in so it's  
4 locked, what happens if you at that point try to crank it  
5 out?

6 A You can't crank it out.

7 Q Do you ever run it the other way to try to crank  
8 it out just to see if it's locked?

9 A Like I said, when you crank it in, I mean, you  
10 give it a little jiggle and you make sure it's not going to  
11 go anywhere. Then you go on.

12 Q When you say you give it a little jiggle, meaning  
13 what direction? A little jiggle to crank it in a little bit  
14 more?

15 A Back and forth. I mean, just to make sure it's in  
16 as far as it can go in.

17 Q Do you recall specifically whether you did that on  
18 the crank that you did on the incident in question?

19 A No, I don't.

20 Q Now, whatever happened after you cranked it? You  
21 went back in the room then?

22 A Yes, sir.

23 Q And you had your survey device in your right hand?

24 A Yes, sir.

25 Q Are you right-handed?

1           A     I'm ambidextrous.

2           Q     And then you walked into the room from where those  
3 doors are in the background of the pictures that are  
4 Deposition Exhibits 2 and 3?

5           A     Yes, sir.

6           Q     Was there room to walk around to the side of the  
7 camera or the side of the steps from which this picture is  
8 taken?

9           A     If you stepped over the ladder, I don't know if  
10 you can see. You can't really see the base of the ladder --

11           MR. BARTH: Can I look over your shoulder at the  
12 pictures?

13           MR. BROOKS: Sure. Absolutely.

14           THE WITNESS: The base of the ladder extends from  
15 side to side and to come across, to come across the ladder  
16 would be exposing myself to the front of the camera.

17           BY MR. BROOKS:

18           Q     If you came across the right-hand side of the  
19 camera, right?

20           A     Yes, sir.

21           Q     Okay. Was there room to pass the ladder from the  
22 doors on what is to us the left-hand side of the picture?

23           A     Yes. Like I said, if you stepped over the ladder  
24 in front of the camera, over the ladder.

25           Q     Okay. Now, when you came into the room from those

1 doors where did you go?

2 A When I came in the room to do the survey, I come  
3 in with the meter up in the air straight to the back of the  
4 camera and check the guide tube.

5 Q I'm sorry?

6 A And check the guide tube. The guide tube wasn't  
7 in this position right here that it's in right now.

8 Q Where was it?

9 A It was over to the left.

10 Q To the left in the picture?

11 A Yes, sir. It was to the left, to the left of the  
12 picture running straight up in the air.

13 Q Okay. So how far, if you would have been gone  
14 straight up in the air or where the left-hand side of the  
15 camera is?

16 A It would have actually crossed. I don't know. I  
17 can show you. That's hard to explain. I can't tell you  
18 exactly where it was, but it was just, I mean, if I was  
19 walking up to the ladder, it was directly in front of me.  
20 Where the ladder was to my left maybe a foot, two foot and  
21 the guide tube itself was out here.

22 MR. BARTH: Could I clarify, sir? He waved an  
23 arm. Could you ask him to clarify where out here is?

24 MR. BROOKS: Sure.

25 THE WITNESS: About a foot to a foot and a half to

1 the left of that camera. If you're looking at the picture,  
2 it's to the left. If you were inside the room coming up to  
3 the back of the camera, it's to the right of the camera.

4 MR. BARTH: Thank you.

5 BY MR. BROOKS:

6 Q Okay. So when you came into the room -- strike  
7 that.

8 After the incident in question, oh, I'm sorry. Do  
9 you have any idea how the guide tube got in the position  
10 that it is shown in Deposition Exhibits 2 and 3?

11 A Yes, sir. I changed my shot.

12 Q Okay.

13 A So one shot was you have a zero degree view and a  
14 90 degree view. So one is either, you can see the guide  
15 tube straight up in the 12:00 o'clock position on both  
16 exhibits. If you were to turn that 90 degrees, swinging it  
17 back, I mean, that's the position you have to shoot it in in  
18 a zero to 90 degree shot.

19 Q Got it. Let me just jump ahead for a second here.  
20 When you climbed the ladder after you conducted your survey,  
21 did you climb the side that we're looking at in Deposition  
22 Exhibits 2 and 3 or did you climb the other side of the  
23 ladder?

24 A I climbed on the step side of the ladder.

25 Q Okay. The step side is the side that's closest to

1 us when we're looking at Deposition Exhibit 3?

2 A Yes, sir.

3 Q Okay. So we're looking at the steps there, right?

4 A Yes, sir.

5 Q So there was room enough to come around to the  
6 side of the ladder that we see on the left of the ladder?

7 A Yes, sir. You could climb up the ladder.

8 Q There must have been room to walk past the ladder  
9 so that you could climb up the ladder, right?

10 A Well, when you walked into the room, your first  
11 step was up over onto the ladder onto the rung, onto a step  
12 of the ladder to climb up.

13 Q Correct me if I'm wrong because maybe I'm not  
14 understanding it. When you come in from those doors that we  
15 see in Deposition Exhibit 3 at the back of the picture?

16 A Yes, sir.

17 Q Tell me where you walk to get to a point when you  
18 can start climbing up the ladder?

19 A Just to the left of the camera. I walked up  
20 behind the camera just to the left of it. I went to the  
21 very left side of the camera and the ladder and my first  
22 step from behind the camera was up onto a step.

23 Q Okay. Now, let's go back. You came into the room  
24 with your survey device and the guide tube was at a position  
25 to the left of where we see it in Deposition Exhibit 3,

1 right?

2 A Yes, sir.

3 Q And so you surveyed the guide tube, did you say?

4 A Yes, sir.

5 Q What parts of the guide tube did you survey?

6 A Directly in front of me. I mean, when I come into  
7 the room, the source was looking right at me. So the open  
8 end of the colonater from where my shot was was facing  
9 straight towards me when I come in the room. That's why my  
10 meter was here, up in the air. So when I walk into the  
11 room, the first thing I did was walk up to the back of the  
12 camera, extend my arm up from behind the ladder and survey  
13 the guide tube down, not all the way to the front of the  
14 camera, down and then to the side of the camera.

15 Q So you first started out by reaching up toward  
16 where the colonater is?

17 A Yes, sir.

18 Q On the off chance that if the source was still in  
19 the colonater, you could detect it?

20 A If the source was in the colonater, I would have  
21 detected it as soon as I opened the door.

22 Q Okay. And then was there -- there was space where  
23 you could walk around the camera to get to the side, what we  
24 see as the side of the camera where the steps are, right?

25 A Yes, sir.

1 Q Okay. And so you surveyed them. Did you survey  
2 the side of the camera?

3 A Yes, sir.

4 Q Now, facing on Deposition Exhibit 3 what we'll  
5 call the front of the camera where the source comes out and  
6 goes up the guide tube, right?

7 A Yes, sir.

8 Q Okay. Is that angled toward the ladder?

9 A It shows in the picture, yes.

10 Q As best as you can recall, is that where it was on  
11 February 27th?

12 A You mean from what I remembered, I thought that  
13 the camera was turned more to the left away from me.

14 Q If the camera was in the position shown in  
15 Deposition Exhibit 3, was there anything to prevent you from  
16 conducting a survey of the front of the camera?

17 A Just having to step over the camera, or step over  
18 the camera, step over the ladder, and when I stepped on the  
19 ladder, I could have gotten to the front of the camera.

20 Q Do you recall -- strike that. As the camera was  
21 positioned on the top of the ladder there, the front of the  
22 camera was accessible, right?

23 A Yes, sir.

24 Q Okay. Now, seeing the camera in that position,  
25 are you certain, sitting here today, as to whether or not

1 you surveyed the front of that camera?

2 A I mean, I did my survey. I don't -- I can't tell  
3 you if I went around to the front of the camera, but if the  
4 source was stuck in the front of the camera, I would have --  
5 my meter would have picked it up.

6 Q Why do you say that?

7 A Because at that source, as soon as you come around  
8 the front of the camera, that thing is going to peg.

9 Q Do you absolutely recall though, sitting here  
10 today, whether or not you took the survey meter around to  
11 the front of the camera?

12 A I don't know if I -- all I know is I checked the  
13 side and I checked the tube to be sure it was in the  
14 shielded position.

15 Q Do you know whether or not you went around to the  
16 front of the camera? Can you say for certain that you did  
17 or you didn't?

18 A I cannot say for certain.

19 Q Did you possibly have a better recollection of  
20 whether you did or didn't go around to the front of the  
21 camera when you explained this incident to Mr. Slack on  
22 February 28, 1996?

23 MR. BARTH: I'll object. That's mere speculation.

24 THE WITNESS: I mean, I'm just saying if I would  
25 have surveyed the front of that camera, I would have known

1 because my meter would have been pegged, with it being open  
2 ended like that.

3 BY MR. BROOKS:

4 Q If the source was out, you mean it would have  
5 pegged?

6 A Yes, sir.

7 Q If the source was not out or if it was out only a  
8 little bit, just a fraction of an inch, would your meter  
9 have pegged?

10 A Yes, sir.

11 Q What if it wasn't out at all?

12 A It is wasn't out at all? No, my meter would not  
13 peg.

14 Q Is it possible that you took the survey meter  
15 around the front of the camera, that had your attention  
16 diverted for a few moments?

17 A Anything is possible.

18 Q I mean, can you say whether or not that happened?

19 A No, I can't say whether or not that happened.

20 Q And I apologize. I understand. I'm just trying  
21 to get your best recollection here. I know you're doing the  
22 best you can and I appreciate it.

23 A Okay.

24 Q Mr. Chastain, do you, on the inside of the camera,  
25 when the source is fully withdrawn into the locked position?

1 A Yes, sir.

2 Q Do you know about how far the source is from the  
3 port at the front of the camera?

4 A Four inches.

5 Q And when the source goes in the camera, does it go  
6 in on a straight line or is there some curvature of the  
7 tube?

8 A Well, if you look at the documents that they gave  
9 to us, then you see it's an S curve. It goes in and up.

10 Q Do you still have Government Exhibit 1?

11 A Yes, sir.

12 Q If I could direct your attention to page 5.2. At  
13 the bottom of page 5.2 of Government Exhibit 1, does that  
14 show the tube in the camera into which the source is  
15 withdrawn?

16 A Yes, sir.

17 Q And so your best estimation is that -- strike  
18 that.

19 The picture of the figure of 5.3 shown at the  
20 bottom of page 5.2, what position is the source in in that  
21 figure?

22 A In the shielded position.

23 Q When you say it's a shielded position, what does  
24 that mean?

25 A It's been shielded with as much depleted uranium

1 as possible. I mean, it's in I guess you would say home.

2 Q Now, did the source, if you look at the picture,  
3 if the source was just an inch or half an inch further down  
4 the tube toward the exit port at the front of the camera?

5 A Yes, sir.

6 Q Could it be in a locked position at that point?

7 A That I don't know. I don't know if that camera  
8 will lock in that position.

9 Q Now, if the camera is not locked and the source is  
10 in fact a half an inch or an inch further toward the front  
11 port of the camera, would the source still be mostly  
12 shielded?

13 A Yes, sir.

14 Q And do you know how much radiation would be coming  
15 out that front port if the source was just a half inch or an  
16 inch away from its locked position?

17 A No. I couldn't tell you that. I mean,  
18 mathematically, if I knew how many inches and the exact  
19 carries, I could tell you that mathematically.

20 Q But you know that it would be less than if the  
21 source was already out the front of the camera, right?

22 A Yes, sir.

23 Q In other words, the further the source is inside  
24 the camera toward the locked position, the less radiation is  
25 going to be emitted?

1           A     Yes, sir.

2           Q     Now, if the radiographic device, the camera, was  
3     in the position that it's shown in Deposition Exhibits 2 and  
4     3, the photographs, is there any reason that you wouldn't  
5     have surveyed the front of that camera?

6           A     That I can see in the pictures? No. Just the  
7     inability to actually step around to the front of the  
8     camera.

9           Q     But you have the ability to step around the steps,  
10    right?

11          A     Yeah. I can get around the ladder stepping up on  
12    the steps and then coming back down.

13          Q     So you have the ability by that means to get  
14    around to the front of the camera, right?

15          A     Yes.

16          Q     When you checked the guide tube with the survey  
17    meter during the incident in question, how far down the  
18    guide tube did you go, if you recall?

19          A     I don't remember how far I went.

20                MR. BROOKS: Give me just a minute. We can go off  
21    the record for just a second.

22                [Discussion off the record.]

23                MR. BROOKS: Back on the record. Just a couple  
24    more questions on this subject and then we're done.

25                BY MR. BROOKS:

1 Q When you surveyed the guide tube, did you come all  
2 the way down to the bottom, what's shown in this photograph,  
3 the curve at the bottom of the tube, if you recall?

4 A I can't recall whether how much I surveyed of it.  
5 I know when I surveyed I didn't show any excessive  
6 radiation.

7 Q Let me ask you this. When you've said in the past  
8 that you didn't survey the front of the camera, is that  
9 based on the assumption that you must not have because you  
10 didn't see a reading greater than 20 MR?

11 A They're saying that for me to get what I got as  
12 far as an exposure, I mean, if it were in the tube, anywhere  
13 in the tube, as far as in the length of the tube from about  
14 where the edge of the camera is on up, I mean, as soon as I  
15 opened the door at 90 whatever carries it was, I mean, it  
16 was going to peg.

17 Q But it didn't?

18 A No. And they're saying that it had to be within  
19 the first inch or two. And I'm saying, if it were in the  
20 first inch or two, my meter would have pegged. I would have  
21 seen my meter peg. I mean, like I said, the greatest  
22 reading I got was 20 MR and that's in the shield position on  
23 the side of the camera.

24 Q When you say, you're referring to they say, when  
25 this happened, who is it that you're referring to?

1           A     I mean, just everybody that I've talked to.

2           Q     So I guess my question is, are you assuming that  
3 you didn't -- you must not have surveyed the front of the  
4 meter because you never saw a reading go over 20 MR?

5           A     Yeah. Yes, sir.

6           Q     But do you have an actual recollection of whether  
7 or not you surveyed the front of that camera?

8           A     I said no because I can't get to it. If I had to  
9 get to the camera, I had to climb over the ladder.

10          Q     Do you have an actual recollection, sitting here  
11 today, as to whether or not you actually surveyed the front  
12 of that camera?

13          A     No.

14          Q     As far as you know, when you talked to the NRC and  
15 anybody in the beginning of September of 1996, did you then  
16 have an actual recollection of yes, I surveyed the front of  
17 the camera or no, I did not?

18          A     I told them no, that I didn't survey the camera  
19 because I didn't receive a reading over a shielded position  
20 source.

21          Q     That's why you told them that you didn't survey  
22 the front of the camera because you don't ever receive a  
23 reading higher than 20 MR?

24                   MR. BARTH: Objection. That's a little leading.

25                   THE WITNESS: If I received 4.7 R, I mean the

1 source was somewhere. I mean, whether it was at that  
2 particular time or the shot before it. Another way that I  
3 knew that I got overexposed was the piece of film that I  
4 went in there to set up that actually I went in there and I  
5 took it down, I took a piece of film down that I had just  
6 got through X-raying and I put it up on the board, or up on  
7 the I-beam and I started to set up my next shot. Well, the  
8 first thing I thought was, well, I'll know if I'm  
9 overexposed. All I have to do is warm this piece of film.  
10 If this film is black, then yes, I did. I mean, if the film  
11 is fine, chances are that I didn't get nothing. I mean, at  
12 the time I was a little concerned about what I got.

13 BY MR. BROOKS:

14 Q Understandably. What happened with that film?

15 A It was black.

16 Q Let me ask it to you again. When you testified or  
17 you explained the situation to the NRC on April 11th and on  
18 September 5, 1996, and you told them that you don't think  
19 that you -- did you tell them that you didn't think that you  
20 surveyed the front of the camera?

21 A I don't know exactly what I told them. I don't  
22 know if I told them no, I didn't, or I don't think I did.  
23 But I'm saying if they're saying that the source was in the  
24 first inch or two inches of that camera, I mean, I would  
25 have seen it. I would have noticed it as soon as the camera

1 went in front of the source.

2 I mean, you can see the position of my cart.

3 Q Yes.

4 A Which is in front of the camera.

5 Q Right.

6 A And I can tell you from the position of that cart  
7 being in front of the camera that when I set the meter down,  
8 when I went to set the meter on the cart, it would have been  
9 pegged because it's in front of the camera.

10 Q When you got done with your survey, what did you  
11 do with the survey meter?

12 A Put it on that cart.

13 Q Did it peg?

14 A Not that I seen.

15 Q You're saying that when you took the survey meter  
16 and put it on that cart, where were you standing?

17 A I was standing on the ladder. I surveyed and then  
18 coming down the guide tube and then reached over and put it  
19 on the corner, you can see it sitting on the corner of the  
20 cart.

21 Q You're referring to Deposition Exhibit 2 now,  
22 where you see the cart in the foreground?

23 A Yes, sir.

24 Q And you're pointing to something on the cart?

25 A Yes, sir.

1 Q What is it?

2 A It's a survey meter.

3 Q Where is it?

4 A It's in the top left-hand corner of the cart.

5 Q Right in the corner of the cart, sort of on the  
6 opposite corner from the cup?

7 A Yes, sir.

8 Q And that sort of black device there is your survey  
9 meter?

10 A Yes, sir.

11 Q And you were standing on the bottom of the ladder  
12 when you put the survey meter there?

13 A Yes, sir.

14 Q In order to put the survey meter there, did you  
15 have to pass it sort of in front of the camera?

16 A Yes, sir. The cart's in front of the camera.

17 Q So you had to pass the survey meter in front of  
18 the camera?

19 A Yes, sir.

20 Q And in passing the survey meter in front of the  
21 camera, did you see it peg?

22 A No, sir.

23 Q Now, the survey meter, can you explain to me what  
24 the scale is on the survey meter?

25 A It reads from zero to ten on the meter itself, on

1 the meter face. And then you have a control on the bottom  
2 of the meter that says times one, times ten and times one  
3 hundred. Therefore, if it's on a ten scale and it's on  
4 seven, it's 70 MR. And vice versa, 100 MR or 700 MR or 7  
5 MR.

6 Q So if it's on the times one scale and it reads  
7 five, you've got 5 MR?

8 A Yes, sir.

9 Q And if it's on the ten scale and it reads five,  
10 you've got 50 MR?

11 A Yes, sir.

12 Q And if it's on the 100 scale and it reads five,  
13 you've got 500 MR?

14 A Yes, sir.

15 Q Now, when you conducted your survey at the time of  
16 the incident in question, which scale did you have your  
17 survey meter on?

18 A Ten scale.

19 Q Why?

20 A Because it's a 90 carries source and on the one  
21 scale with source greater than 50 carries, I mean, your  
22 meter is going to stay pegged. I mean, it's going to be a  
23 constant on ten and you're never going to know exactly how  
24 much is there. Therefore, you switch to the ten scale with  
25 more radioactive source.

1 Q In conducting your survey of the device at the  
2 time of the incident in question, did you watch the survey  
3 device all the way until you put it on the cart?

4 A Yes, sir.

5 Q What was the highest reading that you saw?

6 A My rating on the side of the camera, which was --  
7 I'm going to look at Exhibit 1 for Conam. I received my  
8 highest reading at 20 MR at the side of the camera.

9 Q And at that point did you have the survey device  
10 in contact with the camera?

11 A Not direct contact. I mean, I didn't have it  
12 above or to the side.

13 Q Close?

14 A Yes, sir. Within an inch or two.

15 Q And normally you took it right from the side of  
16 the camera, you did both sides of the camera, right?

17 A I don't know. I just know that I checked to make  
18 sure it was in the shielded position on every exposure.

19 Q Fine. Okay. Then as you put the survey meter on  
20 the cart you didn't see it go any higher than 20 MR?

21 A No, sir.

22 Q Now, once you put the survey meter on the cart,  
23 what did you do next?

24 A I climbed up to the top of the ladder and started  
25 performing my next shot.

1 Q Okay. To do the next shot, you had to take out  
2 your film from the previous shot?

3 A Started the film -- it's not an actual film. It's  
4 just a black cassette that has a piece of film in it and you  
5 just take the one piece down, change the position of the  
6 clamp which holds your colonater and move that around to  
7 your next view of the weld.

8 Q And your best recollection of how long that took  
9 on this occasion was one and a half to two minutes?

10 A Yes, sir.

11 Q I suppose it took longer if you had to change to a  
12 different weld?

13 A Yes, sir.

14 Q But in this case you were going to stay on the  
15 same weld?

16 A Yes, sir.

17 Q Now, when you climbed up the ladder, do you recall  
18 exactly how high on the ladder you went?

19 A When I climbed on to do my next shot?

20 Q Yes, sir.

21 A Just before probably the rung just before the  
22 danger sticker on the ladder. I mean, you can see where my  
23 clamp is from the picture. I mean, you really can't see  
24 which weld I was actually X-raying. But you can see the tip  
25 of my colonater at the end of my guide tube from here up.

1 Q Just for the record, you are now looking at  
2 Deposition Exhibit 3, which is the closer in picture?

3 A Yes, sir.

4 Q And you're saying that if you look at the top of  
5 the picture, you can see where the colonater is at the top  
6 of the guide tube?

7 A Yes, sir. And the weld is directly 20 inches from  
8 the end of that to the left.

9 Q Okay. So in a place where you can't see it, the  
10 guide tube does a left-hand turn, a 90 degree turn to the  
11 weld to get the colonater to the place where the weld is?

12 A Not in these pictures.

13 Q Okay.

14 A When the incident, where the incident happened,  
15 what I think happened, if that was that exposure, it was to  
16 the left, on the left side of the ladder in the picture.

17 Q So as you see the guide tube and the colonater in  
18 Deposition Exhibits 2 and 3, that's where you placed it just  
19 before you saw that the locking bar wasn't locked?

20 A Yes, sir.

21 Q As you went up the ladder, just get one thing  
22 straight. If we say that the camera is on the top of the  
23 ladder, right?

24 A Yes, sir.

25 Q And the next step down has a sort of a decal on

1 it?

2 A Yes.

3 Q We'll call that the top step?

4 A Yes, sir.

5 Q You were standing on the step below that one?

6 A Yes, sir, between -- I mean, I don't know. I  
7 don't know if I was standing on this one or this one. I  
8 know I wasn't standing on the bottom.

9 Q Okay. And what you said was that you may have  
10 been standing on the second step from the top?

11 A Yes, sir.

12 Q The one below the one that shows a sticker on it?

13 A Yes, sir.

14 Q Or you may have been standing on the step that had  
15 the sticker on it?

16 A Yes, sir.

17 Q And you don't have a present recollection as to  
18 which one it was?

19 A No. Not unless it says on here exactly which one  
20 I was standing on.

21 Q I think if you want to check.

22 A Okay. No, it doesn't.

23 Q Okay.

24 A Aside from whether I was on the second or the  
25 first one.

1 Q Okay. Now, I think you said that when Mr. Barth  
2 asked you questions that earlier work on the weld in  
3 question, once you got up the ladder and turned around so  
4 that your back was facing to the camera?

5 A Yes, sir.

6 Q Okay. And at about the same time as you turned  
7 around, is that when you moved your fanny pack?

8 A Yes, sir.

9 Q So when you climbed up the ladder your fanny pack  
10 was in front of you facing toward the camera?

11 A Yes, sir.

12 Q And when about how long was it between the time  
13 that you -- do you know if you moved your fanny pack first  
14 or turned around first?

15 A I don't remember.

16 Q But as far as you know, it was about the same  
17 time?

18 A Yes, sir. You can see in the picture that my  
19 set-up is actually behind the camera where it's up in the  
20 air. It's behind so I would have to turn around in order to  
21 get to it. I couldn't stand on the front of this ladder and  
22 get it, reach back that far.

23 Q What's the reason for moving your fanny pack  
24 behind you?

25 A I don't know. I just did. I had no reason for

1 doing it.

2 Q So during the time that you're working on your  
3 weld, taking out the one film cartridge, moving the  
4 colonater, putting in another film cartridge, you're doing  
5 it at the top of the ladder?

6 A Yes, sir.

7 Q During that entire time your fanny pack was in  
8 back of you?

9 A Yes, sir.

10 Q Okay. And it was facing right toward the camera?

11 A Yes, sir.

12 Q Can you estimate for me about how far your fanny  
13 pack was from the front port of the camera at that point  
14 when you're doing that work?

15 A They measured it in our exhibit, in this Exhibit  
16 4. Right here you can see they show it in front of me at  
17 about 13-1/2, 13-1/4 inches, but I know whenever I was  
18 shooting up in the air that I was moving my fanny pack, just  
19 to be more comfortable. I can move better with it in the  
20 back.

21 Q As far as you know, when you were dealing with  
22 work, was your fanny pack the closest part of you to the  
23 front port of the camera?

24 A Yes, sir.

25 Q Was that true the whole time that you were up on

1 the ladder doing your work?

2 A Until I came down or when I went up. I can't say  
3 that the whole time that it was the closest thing to it.

4 MR. BARTH: Objection. Objection. Leading  
5 gestures by counsel.

6 BY MR. BROOKS:

7 Q Do you want to just stand up for a second and show  
8 me what you did and as you do it, I'll just ask you  
9 questions so that we can get it on the record?

10 A Okay. When I walked into the room, I come up on  
11 the ladder this way, standing up, facing the ladder. After  
12 I put my meter down, I climb up the ladder.

13 Q Okay. Right now you're facing as if you're facing  
14 the front of the ladder where the rungs of the ladder are,  
15 right?

16 A Yes, sir.

17 Q Okay. I know you've gestured with your right  
18 hand.

19 A This is my meter hand.

20 Q Okay. So you've got your meter in your right hand  
21 and then you place it on the cart. Now you're facing the  
22 front of the ladder?

23 A Yeah. I reach over, set it down.

24 Q Okay.

25 A And climb the ladder. Get to the top of the

1 ladder and do my work.

2 Q Okay. And at some point in there you move your  
3 fanny pack?

4 A Sometime there.

5 Q Now, when you're ready to come down the ladder  
6 after you've done your work, you stated that you had to turn  
7 around to come back down the ladder or did you walk down it  
8 like it was a set of stairs?

9 A I don't remember. I could have turned around. I  
10 know when I came down I had to reach over to the back of the  
11 camera and unlock it.

12 Q Now, when you came down, did you move the fanny  
13 pack around to the front again or did you leave it on the  
14 back?

15 A I don't know if I did as soon as I got down or all  
16 I know is when I reached down to the back of the camera, I  
17 felt that the slide bar was not secured all the way. That's  
18 when I came straight down and went back out in the hallway.

19 Q Now, you said you reached around to the back of  
20 the camera to unlock it. Could you see the back of the  
21 camera when you did that?

22 A At the time I wasn't looking back at the back of  
23 the camera. I just reached around the back of the camera to  
24 push the slide bar.

25 Q So at that point where were you standing when you

1 reached around to the back of the camera?

2 A On the ladder.

3 Q Were you still at the top of the ladder or did you  
4 come down to the bottom of the ladder?

5 A I don't know if I -- all I know is I was -- all I  
6 remember is just reaching over and grabbing it.

7 Q How long was it from the time that you reached  
8 over to grab it before you then left the room?

9 A Seconds.

10 Q Three seconds, five seconds?

11 A Two seconds, one second. I don't -- seconds.

12 Q Mr. Chastain, when you were on the ladder and you  
13 reached around to the back of the camera to unlock it, which  
14 hand did you use?

15 A My right hand, closest to the camera.

16 Q When you were on the ladder, is the back of the  
17 camera to your left hand or to your right hand?

18 A When I'm on the --

19 Q If you're on the ladder and the camera is up at  
20 the top of the ladder, is the locking mechanism to your left  
21 or to your right?

22 A If I'm facing the ladder, it's to my left. If I'm  
23 behind it, it's to my right.

24 Q Okay. Where were you when you reached around to  
25 the back of the camera?

1           A     I'm trying to think how I come down the ladder. I  
2 mean, you're asking a question that happened two years ago.  
3 I can't tell you how I came down the ladder. I know I  
4 reached over with my right hand.

5           Q     So you might come down the ladder like they were a  
6 set of stairs, in which case the back of the camera would  
7 have been closer to your right hand?

8           A     Probably so. I can't tell you yes or no.

9           Q     Okay. Just a second. Okay. Now, the next day  
10 you said you met with Mr. Slack in Gary?

11          A     Yes, sir.

12          Q     And I'm sorry. I apologize because I know  
13 Mr. Barth asked you this question, but I do not remember the  
14 answer. Who else was present, if anyone, when you talked  
15 with Mr. Slack about the incident?

16          A     I think just me and him. Like I said, I met him  
17 when I came into the office that morning I met him in Keith  
18 Tucker's office. They shared an office and that's where I  
19 first met him.

20          Q     And you're not sure if anyone else was there or  
21 not?

22          A     No.

23          Q     Now, do you remember Mr. Slack asking on that  
24 occasion if you had done a 360 degree survey of the device?

25          A     I don't recall him asking me.

1 Q Do you recall telling him that you had done a 360  
2 degree survey of the device?

3 A No.

4 Q It might have happened. You just don't remember  
5 it?

6 A It might have. I don't know. I can't remember.

7 Q You testified to Mr. Barth that you know of the  
8 other occasions in which other radiographers didn't manually  
9 lock the camera?

10 A Yes, sir.

11 MR. BARTH: Objection. Misrepresents his direct  
12 testimony, sir.

13 MR. BROOKS: I'm sorry. I'm not trying to  
14 mischaracterize his testimony. Did he testify that --

15 MR. BARTH: He testified he saw it.

16 MR. BROOKS: I'm sorry. What --

17 MR. BARTH: He testified he saw it.

18 MR. BROOKS: He saw what?

19 MR. BARTH: That he was not to lock it.

20 MR. BROOKS: What he said was?

21 MR. BARTH: Could you re-read the question,  
22 Mr. Reporter, please?

23 [The reporter read the record as requested.]

24 MR. BARTH: The clarity is such that if I'm  
25 mistaken when I read this, I apologize.

1 MR. BROOKS: No, that's fine. I'm just trying to  
2 -- it's not my intent to mischaracterize his testimony. I'm  
3 just trying to get into a subject matter here.

4

5 BY MR. BROOKS:

6 Q Do you know any specific instances when you saw a  
7 radiographer not manually lock a camera?

8 A I can't tell you exact dates and times that I seen  
9 radiographers not do it, but yes, I've seen radiographers  
10 day-in and day-out doing RT work without locking the back of  
11 the camera.

12 Q Was that true at SG, what is it?

13 A SGS?

14 Q SGS?

15 A Yes, sir.

16 Q Have you seen that since you were at Conam?

17 A Yes, sir.

18 Q What are the names of the radiographers that  
19 you've seen do that?

20 A Everybody I ever worked with.

21 Q Did you ever report that to anybody?

22 A No.

23 Q Do you know of any instance after February 27,  
24 1996, when any Conam radiographer did not manually lock a  
25 camera?

1           A     That I couldn't tell you because after  
2 February 27th I never performed X-ray again at Conam  
3 Inspection or even was within 20 feet of a radioactive  
4 device.

5           Q     And you said that your radiographic techniques  
6 were audited from time to time by Conam?

7           A     Yeah. We had audits on how to operate a camera.

8           Q     And in an in-house setting, did people see you  
9 operate a camera including taking exposures?

10          A     In-house as in in a lab?

11          Q     Yes.

12          A     We used the cell.

13          Q     What does that mean you used the cell?

14          A     It's a shooting cell where it's stacked with  
15 concrete block where if you have anything to X-ray in the  
16 shop, you take it back in the cell and X-ray it.

17          Q     So you -- I'm sorry.

18          A     But as far as taking an actual X-ray, I personally  
19 never had to shoot a weld back there with them. I mean, I  
20 took the camera out and closed the gate and come out, crank  
21 the source out, put the colonater on the end of it, crank it  
22 back in, surveyed my camera, disconnected the camera. I  
23 mean, that was my audit. I mean, I don't know that it's any  
24 different if you're actually shooting a weld or not shooting  
25 a weld.

1 Q Do you know of any difference?

2 A No. I mean, it's the same as far as operation  
3 procedures on the camera.

4 Q Were you ever audited in the sense that you've  
5 just described in the cell as if you were taking multiple  
6 exposures?

7 A Not that I can recall.

8 Q Now, do you know whether or not other  
9 radiographers have in fact been audited in the field?

10 A Oh, that I don't know. I'm not with every  
11 radiographer, but, I mean, personally I never seen them come  
12 out to the field while we were X-raying.

13 Q Was there any discipline imposed on you by Conam  
14 as a result of this incident?

15 A Yes, sir.

16 Q What was it?

17 A Laid off for two weeks without pay.

18 Q Was there any corrective safety action that you  
19 know that Conam took with respect to this incident?

20 A Yes, sir. I know I did a refresher course on  
21 radiation safety.

22 Q You said you did a refresher course. What does  
23 that mean?

24 A I came in for a day and we went over all the  
25 radiation safety handbook knowing that --

1 Q Who did you go over that with?

2 A Keith Tucker.

3 Q Did you talk to other radiographers about safety  
4 procedures after this incident?

5 A We discussed for probably about six months, three  
6 months, I mean, just amongst us, among my peers.

7 Q What was your peers' reaction to the incident?

8 A I mean, they were concerned. But I mean, there  
9 was a few that thought that, you know, I did it purposely  
10 because I wanted to come home or whatever. But that's  
11 beside the point. Maybe that's just, I don't know.

12 Q To your knowledge do radiographers at Conam after  
13 this incident, have they told you that they manually lock  
14 their cameras now?

15 A I never heard anyone say that they now that they  
16 do it. I know I do, as a radiographer right now.

17 Q Okay. Did you make any safety presentation at  
18 Conam after this incident?

19 A Yes, sir.

20 Q What was that?

21 A It was a safety meeting out at one of our job  
22 sites. I had to give a safety on how to operate a camera  
23 correctly.

24 Q And why were you chosen to do that?

25 A Because of the incident.

1 MR. BROOKS: Okay, Mr. Chastain. I appreciate  
2 your time very much, and your indulgence with my questions.  
3 I'm all done. I don't know if Mr. Barth has any follow-up  
4 questions or not, but I don't have any questions pending.

5 THE WITNESS: You asked me if there was any one  
6 individual that I know that locks a safety camera or  
7 whatever. I mean, it probably has no bearing because he  
8 doesn't work there any more, but he was a radiographer at  
9 the time. But his name was Jim Sitar. He was always,  
10 whenever he worked with it, he worked with a radiographer,  
11 he made sure that their camera was locked before he walked  
12 up to it.

13 MR. BROOKS: Okay.

14 MR. BARTH: I have a few questions to ask  
15 Mr. Chastain. It's been a long time. I appreciate your  
16 indulgence with us. I would suggest probably a five, six  
17 minute break to regroup yourself and we'll talk among  
18 ourselves. I think that will shorten the questions  
19 substantially if we have a little conversation by ourselves.  
20 Is there anything we can get you, Mr. Chastain, a Coke?

21 THE WITNESS: No, thanks.

22 [Discussion off the record.]

23 EXAMINATION

24 BY MR. BARTH:

25 Q Mr. Chastain, after the incident occurred on

1 February 27th, you went down and talked to the Level 2, is  
2 that correct?

3 A Yes, sir.

4 Q Did you go back to the room and break down the  
5 equipment and put it up?

6 A Did I? No, sir.

7 Q Did anybody?

8 A Apparently Arnie Morell did. Because once the  
9 incident happened and I was already overexposed, I mean, I  
10 had no -- I had no way of knowing. Well, there was someone  
11 in the office so he broke down everything. All I did was  
12 lock the camera, pull the key out of the camera and go  
13 straight downstairs.

14 Q And after you talked to Arnie, did you then leave  
15 the site?

16 A No. That's -- in the picture of it, you can see  
17 me standing there. I didn't leave until after he had  
18 everything because we had to come back together, because I  
19 don't know if I had my -- at the time if I had my vehicle  
20 down there or not. I know I was driving my vehicle back and  
21 forth.

22 Q I'll refer you to Conam's Exhibits 3 and 2, the  
23 pictures. Could you tell us what position the guide tube  
24 was in for the first shot? And when you do, will you refer  
25 to the pictures?

1           A     Okay.  The best one to probably show you would be  
2     Exhibit 2.  If you look directly in front of my camera and  
3     you're looking right at the exit port where the tube comes  
4     out, then follow the tube up to the top of the colonater  
5     where it starts to go up.  That tube was running the same  
6     way, was running up in the air but approximately a foot and  
7     a half to two foot to the left of the source.

8           Q     And for your next shot, does the picture -- I'll  
9     withdraw the question.  I apologize.

10                  Does the picture, Conam No. 2, then show the tube  
11     in a position for your next set-up?

12           A     Yes, sir.

13           Q     And did you move the camera in between those two  
14     shots?

15           A     Not that I remember.  I wouldn't.  I don't think  
16     so.  I can't remember if I did or if I didn't.

17           Q     I have one more question.  I believe you testified  
18     that you put the survey meter on the cart?

19           A     Yes, sir.

20           Q     I believe you -- try and recall -- is -- what did  
21     you do?  Did you reach around and set the thing down or did  
22     you look at the glass in the front and watch the needle as  
23     you put it down?

24           A     Well, when I was surveying my camera, I surveyed  
25     the camera, come on the side and then put it back down.  As

1 I'm setting it on there, I was standing on the bottom of the  
2 ladder and you can see in the picture the table sitting  
3 right there. I just surveyed and reached and sat it down on  
4 the corner of that table. I mean, visually looking at it, I  
5 didn't turn and throw it down there. I sat it down on the  
6 table.

7 Q Okay, sir. I apologize. I have one more.

8 A Okay.

9 Q I ask you to look at Conam Exhibit No. 3.

10 A Yes, sir.

11 Q I think I remember you testified you were in the  
12 picture?

13 A Yeah. I believe that's me back there by the door.

14 Q Bear in mind someone else is going to read this  
15 transcript. And this is leading, I apologize. Are you  
16 referring to the glass opening in the door which is to the  
17 far left of the picture?

18 A Yes, sir.

19 Q And I have the Xerox of that so mine is  
20 indefinite. Do you think that's your face looking in the  
21 window? Is that what you said when you were present?

22 A Yeah. It looks like that was me standing there.

23 MR. BARTH: I have no further questions.

24 MR. BROOKS: Nothing further from us.

25 Mr. Chastain, --

1 MR. BARTH: May I amend that and ask one more?

2 BY MR. BARTH:

3 Q Did you see the pictures of the set-up taken?

4 A Did I see these pictures of the set-up taken?

5 Q Did you see them make the set-up and take the  
6 pictures?

7 MR. BROOKS: I'm going to object to the form of  
8 the question because I'm not sure what you're referring to  
9 when you say the set-up.

10 MR. BARTH: The location of the ladder and the  
11 camera.

12 THE WITNESS: Did I witness them --

13 MR. BARTH: Taking this picture, Exhibit 3.

14 THE WITNESS: Well, if that's me standing there,  
15 then yeah, I see them taking the picture.

16 BY MR. BARTH:

17 Q Do you have any recollection of someone with a  
18 camera taking a picture?

19 A I know Arnie did take pictures of the set-up.

20 Q I appreciate that, but do you recall presently  
21 seeing these pictures taken?

22 A I believe so.

23 Q Did you return to Eli Lilly after the 27th of  
24 February 1996?

25 A No, sir.

1 MR. PARTH: I have no further questions.

2 MR. BROOKS: But he means at this time. Nothing  
3 further from us. Thanks very much. We appreciate all your  
4 time.

5 MR. BARTH: You have certainly been indulgent.

6 [Whereupon, at 2:33 p.m., the deposition was  
7 concluded.]

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CERTIFICATE OF DEPONENT

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I, WILLIAM CHASTAIN, do hereby certify that I have read the foregoing transcript of my deposition testimony and, with the exception of additions and corrections, if any, hereto, find it to be a true and accurate transcription thereof.

\_\_\_\_\_

WILLIAM CHASTAIN

\_\_\_\_\_

DATE

Sworn and subscribed to before me, this the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

\_\_\_\_\_

NOTARY PUBLIC IN AND FOR

My commission expires: