limitation? If so, did [redacted] b6 call attention to the fact that he had worked beyond the time limit? If the foreman was aware of the limitation, what was his reason for allowing [redacted] b6 to exceed the established limitation? How was the limitation established and how was it communicated by the person making the decision, through supervision, to the foreman and to the individual worker?

9. I would also appreciate some general information on the type of supervision [redacted] received during the processing in question and whether during this processing, the operators were allowed to work alone and unobserved for any period of time. Did any other operators who were assigned to this work exceed the time limitations per month or quarter and were other operators assigned to this job properly informed and instructed? In other words, was [redacted] b6 the only operator who was not aware of the proper procedure or were other operators assigned to this job unaware of the procedures and requirements?

10. I note that the Committee concluded that [redacted] b6 sustained no injuries as a result of the exposure. Has he or anyone else claimed injury and what is the basis for the Committee's conclusion?

11. I note that O&I Standard Index 7-5700 is dated February 19, 1965. I suggest that a copy of the standard pertinent to the period in question be attached to the report. I assume there is no basic change in the standard, but the date raises this question.

Your assistance in providing me the above information will be appreciated and the information will enable me to evaluate the adequacy of your recommendations.

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FEB 19 1965

Addressees

H. Jack Blackwell, Area Manager
Amarillo Area Office

APPOINTMENT OF INVESTIGATING COMMITTEE

AA:MLB

Pursuant to AEC Manual Chapters 0503 and 0733 and AL implementations thereof, the following individuals are appointed as members of a Committee to investigate a reported Type B radiation exposure incident which occurred at Pantex PLANT, Amarillo, Texas during the period of January 1, 1965 through February 8, 1965:

James V. Glenn (Safety & Fire Protection Specialist, AEC) Chairman
Donald L. Dufek (Chief Radiologist, M&H-SH Co., Inc.) Member
Herman Phillips (Safety Engineer, M&H-SH Co., Inc.) Member

The Chairman and members of this Committee are hereby authorized and charged with the following responsibilities:

a. Conduct an investigation which will develop all the information required by the applicable sections of AEC & AL Manual Chapter 0532.

b. Prepare and submit to Area Manager, Amarillo Area Office, USAEC, a written report to include all data required by Part II, AEC Appendix 0532. Submission

(continued)

Addressees:
James V. Glenn (Safety & Fire Protection Specialist, AEC) Chairman
THRU: A. O. Mueller, Chief Operations Branch, AAO
Donald L. Dufek (Chief Radiologist, M&H-SH Co., Inc.) Member
THRU: John C. Drummond, Plant Manager
Herman Phillips (Safety Engineer, M&H-SH Co., Inc.) Member
THRU: John C. Drummond, Plant Manager

AAO Manager
Blackwell
2/18/65

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of the written report shall be no later than March 5, 1962. Dissemination of data resulting from this investigation shall be in accordance with Part II, AL Appendix 0502.

stop

I wish the Committee to make a thorough investigation not only to determine the facts in this case but also to develop information as to adequacy of procedures, precautions, supervision, and instructions to workers and supervisors. I request your recommendations as to the action, if any, necessary to reasonably assure no recurrence of a like or similar incident.

cc: Vincent C. Vespe, Dir., Oper., Safety Div., AL
John G. Drummond, Plant Manager

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Mr. H. Jack Blackwell, Area Manager
Amarillo Area Office

February 26, 1965

James V. Glenn, Chairman
Board of Investigation

RECOMMENDATION BY BOARD OF INVESTIGATION OF A TYPE B RADIATION EXPOSURE [redacted] b6

AAO:JVG

The Board of Investigation, composed of Messrs. Glenn, AEC/AAO Chairman, Phillips and Dufek, M&H-SM Co. members, appointed to investigate the radiation exposure of b6 [redacted] to more than 3 rem to the Calendar quarter makes the following recommendation:

> "Pending the outcome of the investigation by this board, it is recommended that operators performing the pit cushion installation and/or removal, on the MC-1493 be rotated so that no operator performs this job on more than six (6) days in a Calendar quarter."

This is considered necessary as in interim measure to insure the prevention of a similar incident during the investigation.

SSFPS
Glenn Jr
2 25/65

Chf. Spns. Pr.
Mueller
2 26 65

XXXXXXX

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[redacted] UNCLASSIFIED

[redacted] consists of 43 pages

No. 1 of 1 copies, series A

SIGNED STATEMENTS

TO

REPORT OF INVESTIGATION
TYPE "B" RADIATION EXPOSURE
JANUARY - MARCH, 1965
PANTEX PLANT, AMARILLO, TEXAS

Derivative Classifier
[signature] 12-31-96
PX 961223.DG Date
Mason & Hanger, Pantex Plant

DOE/Pantex Plant Classification Change Label for Documents
The classification of this document was changed to
CONFIDENTIAL, RESTRICTED DATA
by authority of PX 961223.DG
Document remarked by: [signature] Date 12-31-96
Verified by: [signature] Date 12-31-96

GROUP 1
Excluded from automatic
downgrading & declassification

[redacted]

[redacted]

4 31446

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Glenn: Mr. Pierce, would you state your position, and your badge number, please?

b6

Badge number is [redacted], assigned to Process Engineering Group. My job description is that of Program Engineer.

Glenn: And this particular program is what -- the one we are investigating at this time?

b6

The 58 Program.

Glenn: The 58 Program? And the pit number?

b6

MC 1493.

Glenn: You receive your O & I process work from the Design Agency, is that right?

b6

Well, we receive a minimum of criteria -- their requirements. This program is a little different from some of the other programs that we had worked with -- we don't get detailed instructions -- step by step detailed instructions. Our obligation on this program is to prepare ~~and accept for~~ assembly procedure and then submit it to LRL for review. So the assembly responsibility is a little more so on this program -- developing the techniques, and the actual assembly procedures is more a Pantex responsibility than it is on other programs.

Glenn: Your tooling -- is that provided by your Design Agency?

b6

No. It is local but it is approved by the Agency.

Glenn: Do you receive any special precautions safetywise, regarding any particular hazards connected to the new program when you receive them?

b6

We didn't receive anything, particularly on this program, other than there is a standard statement about radiation.

Glenn: Did they advise shielding?

b6

No.

Glenn: The O & I Standard is fairly complete in its instructions. As a completed item the O & I Standard for this production item, was shielding requested when you completed it?

b6

When we first started the program, shielding was not required. We provided the shielding about December of last year, I believe it was, when we first found out that there was some radiation exposure here - more than we had suspected. Don and I talked about it at the time. We took some action at that time to move the ~~boy and the~~ pad, the fifth operation, out of the cell area and ~~out~~ into the entranceway actually to the cells, put in some lead shielding around the completed cell assemblies and provided a lead shield for people to work around when it was convenient for them to work around it.

Glenn: Do you think this shield could be -- I mean, could it be modified to the point where they could use it to put this pad on - this cushion?

b6

I couldn't say no -- I don't know right now how it would be possible but we don't have a design on it. Whether it would be possible for a person to work 100% around a shielded glass or glass shield. I'm sure it's possible but we don't have a design for it.

Glenn: This operation we do out of the cell [redacted] atting on the

cushion of the pit. That's right, isn't it? There is no H.E. involved -- nothing?

b6

Right. And I think -- we are working on a process that will require less technique for the actual installation of this. I've been working on this since last December, off and on. It's a little different material than what we have been using for the actual bonding operation and I feel like that if thi material proves out and I should know today or tomorrow whether I have approval to use it or not. I feel like that if this material is approved for use we will reduce the exposure considerably just by the use of it and I also feel lik it would be possible for the operator to work almost 100% of the time around the shield. Instead of actually applying the material with his hands, having t rub it on and smooth it out and that sort of thing -- this new material is put on with a spray gun. And the man would be, at most he wouldn't be any closer than 2 feet to the item during the application of the material and it would tak less time to actually apply it. Then he would wait up to 5 minutes for the volatiles to get out of the material that has been sprayed and then the actual installation of the pad itself wouldn't take as long becuase this material woul allow him to move the pad once he gets it on -- in other words, if he puts it on and it's a little bit crooked, instead of having to take it off and start over, he can just slide it around to where he wants it. It has a little better body characteristics than the material we have been using -- it doesn't require 16 hours to dry so it can be used -- the pad pit assembly can be used after 2 hours of cure time. This would have an advantage in that you don't have a field setup with three or four of these things waiting for tomorrow's curing ou

Glenn: Who do you have to see to get approval for use of this material, Ken?

b6

It has to be approved by LRL. I have run compatibility _____ _____ tests with the ~~LXO for~~ explosives and it is compatible with the explosive material. There is some question though of the use of this material because of the foam parts that are in the weapon itself. The fact that the airconditioning system in the cell is only about 20% _____ and is a recirculating type system, it will pick up some of this _____ ~~four thin~~ which is used as a thinner and will disperse it through the cell. ~~And~~ they are a little bit concerned about what it might do to the other _____ components in the weapon -- not the H.E. or actually not what we're applying it against but _____. I haven't got the full story on it -- I can't give you all the details because I haven't got them myself, but they are a little concerned ~~about~~ _____. But they are checking it out. As second best, I haven't tried this yet but I feel like it would be possible -- rather than spraying it I think we ~~ought to~~ brush it on. Where a man wouldn't have to put it on with his hands -- it's a thin material and could possibly be brushed on. I haven't tried this yet. ~~because I didn't realize until late Friday afternoon that this problem----~~

Dufek: Do you have any luck accelerating these things - the approvals of these things?

b6

Well, I had this all set up to start this morning. I sent through a design change request on it last Thursday and had permission from everyone internal to go ahead with it just as soon as I got my compatibility results with the H.E. I got that late Friday and the local people were going to let me go ahead and start it this morning but LRL said to hold up until they could find out about this problem with the other _____. I expect a call from them this morning. It takes time -- there are several things involved when you start trying to put a new material into a weapon -- it takes a lot of time. We had had this all set up to go about two or three weeks ago -- we had tried material then and we thought everything was working out real fine but it turned out it didn't. We have everything to go with the material but this material that we were using then had to be thinned with naphtha and it turned out that the only

kind of naphtha that would work was a naphtha that had a flashpoint down around ~~33°~~. Just a standard grade naphtha, petroleun naphtha, on which I guess the flashpoint which is up around 100°, has so much oil in it that the material wouldn't cure out properly and ~~it lost a lot~~ THE MATERIAL LOSES A LOT OF its adhesion characteristics. And that's when I started looking for another thinner for this material and that's when I came up with the DOW CHLOROTHENE on which the flashpoint is practically nil. We thought it was the perfect material but we found out that ~~they have~~ had some trouble with it.

Glenn: Normally on a new program, Ken, do you go over the O & I Standards with the foreman in charge -- you are usually there?

[redacted]

Oh, yeah. Now this program probably ~~has~~ HAD more TECHNICAL DEVELOPMENT than any program I have ever been associated with. We have had real good cooperation from LRL and Sandia Livermore in designing the systems. We worked six months on thi thing before we ever made WR Production tooling and everything and this has bee a problem since we first started. This is not something that is new -- radiati exposure -- we've known about it I guess since last November or December. We knew that there was more radiation exposure than we normally experience in an operation of this type. But way back before that even, we started out with TEFLON ADHESIVE ~~pieces~~ and this just didn't prove very satisfactory from just strictly an operational standpoint and then we went to DOW CORNING silastic 140 adhesive and it was quite a bit better but it still left something to be desire And just as a normal matter of good process control WE STARTED LOOKING FOR material that do a little bit better job than silastic 140. Then when our production picked up we started running more units. Don told me about the problems we wer having with radiation and I started concentrating my efforts a little bit more in this area. Since the time that I first heard about this I've had quite a few other things that had to be done and I haven't been able to work full time. The operation itself requires quite a bit of technique by the operator -- it is not something that a man can just go in there and start doing. It's not a straight forward assembly like you put these two parts together and bolt them and they stay -- it requires some operator technique. We have put people in there that just absolutely couldn't do it -- just had to take them out because they ruined about three sets of pads and pads are fairly expensive. We had to put people back on it that had worked on it before. That's another reason that I feel like this new material will help because it will eliminate some of the technique that is required.

Glenn: Herman?

Phillips: Ken, as a matter of training, do you know about how long these people train on putting this cushion on before they do a job?

[redacted]

When we first started the program, we had two men that had done this work on [redacted] and ~~this sort of thing~~ and we had them pretty well trained. They worked for us three months, I guess, off and on -- that and othe phases of the PROGRAM. But to my knowledge, there is not any kind of a training program set up right now. If you have to put a new man in there this morning, maybe he goes out Friday afternoon and watches the man put some on and maybe works with him a half a day or something like that -- then Monday morning why he is supposed to start putting them on. Training is pretty difficult on this thing because we have been having to rotate personnel so often. It's something that should be investigated ~~though~~.

Phillips: Your assignment to a program in with alternate engineers is a formal assignment is it not -- a letter or memorandum?

[redacted]

Yes.

Phillips: Assignment of a foreman to your program [redacted]?

Pierce: No, as a matter of fact, we have had three different foremen on this program since we first started. The program went through the development phase and through the first few months of production with [redacted] as foreman. Then [redacted] was moved in and he worked for about a week with [redacted] on the a likely program. Then [redacted] went off on some other work and there was a period of time when [redacted] was foreman. And I think [redacted] was in there trying to learn for awhile but I don't think he was ever actually foreman on the operation.

Phillips: 58 Type 2E Program -- is this your program, too?

[redacted]: Yes, sir.

Phillips: What type of components are in the 58 Type 2E?

[redacted]: Well, it has no H.E. -- it doesn't even have a pit, not even a mock pit. It has two aluminum parts that go together to make the -- to assimilate the primary assembly. It does have a D-38 ring [redacted] bolts in the area of the primary. It has live detonators but it has no plutonium, no explosives other than [redacted].

Phillips: Ken, do you have any plans for process changes or equipment changes for the first four operations after the cushion is put on and the PE and the cushion go in the cell?

[redacted]: I don't have any actual tooling changes planned. We have simplified this thing since we first started considerably in that now it takes probably one-third less time than it did when we first started the program through just normal process development not because of the radiation problem. One thing that might possibly be done would be to put a lead shield around this area where you would only have the one man that is working on it -- or two men in some instances -- exposed. Then you keep the field which may be developed in the cell because of the number of units that are involved limited to that one area. It's something that needs to be checked out and if there is possible improvements I think we need to make 'em. One thing [redacted] and I discussed earlier was the possibility of making some little leaden boxes to set down over these units once they are in a cure stage. You see, after the silastic is poured, they have to cure for overnight. There are a number of things could be done -- something needs to be worked out so we can still make the production schedule, but we can do it more safely.

Phillips: [redacted] looking at the problem of training the operators in the cell, is this a stable group from day to day, week to week?

[redacted]: No, it's not. There has been a certain amount of rotation of personnel because of the radiation safety requirements -- people getting high enough doses have been rotated off to a job that doesn't have as much radiation exposure. And then there's a certain amount of rotation just because of the nature of the production workload in the area. Our work is not -- because of parts delivery and schedule changes and parts availability and that sort of thing -- the work in the assembly area is not stable at all. Another problem that compounds the whole thing is the fact that you have to try to keep people equalized on overtime, so you want to have as many people trained on a particular job as possible -- this has been the policy -- or any individual man down there trained on as many operations as is possible because we get a lot of pressure from the Union to keep everybody even on overtime. Naturally, if you have a crew that works on the 58 the full year we are not apt to get the same amount of overtime that the 56 or 55 -- we might this year get more overtime and we might next year not get as much overtime. Just for overtime distribution, they move people around. Barnes or someone like that can give you a lot more detail on that than I can, but I know it is [redacted] for personnel rotation.

Glenn: [redacted]

b6 [redacted], would you tell us your name, badge number, position and where you were working at the time of the incident and where you are working now?

b6 [redacted] b6 [redacted] badge b6 [redacted] assembler. At the time of the incident where the pads were installed, I was working in Cell 4 and I am working in 12-31 at the present time.

Glenn: When did you move out of Cell #4?

b6 [redacted] It was Sunday, a week ago.

Glenn: Sunday, a week ago? b6 [redacted] when you performed this job, what kind of instructions were you given regarding the job - did your foreman give you instructions how to install these pads, what procedures to use and what safety measures to take?

b6 [redacted] Well, at sometime back, earlier in the program, another foreman was giving instructions and this particular time when I had my tour of duty on it, the foreman at the time told me it was my turn up and this was on Thursday and he b6 told me just as well to go out there with [redacted] and get in the swing of it -- that [redacted] had it going pretty good. So I went out there and watched [redacted] the rest of Thursday and then I was out there again with him on Friday. Then, the next two weeks I was on my own out there so to speak.

Dufek: So, it was Thursday and Friday and then two weeks?

b6 [redacted] Right. And then after one week I was on it again for a short time when the other man didn't show up for work and they all had to be gone over and [redacted] b6 had [redacted] and I out there trying to straighten 'em out and get 'em to where we could sell. That's when [redacted] came in.

Dufek: How long was it that time, [redacted] b6

b6 [redacted] That time was I would say about 45 minutes.

Glenn: When you were working with b6 [redacted] did your foreman - your foreman didn't assist you at all? In other words, you got your instructions from [redacted] b6

b6 [redacted] That's right.

Glenn: Did you read the O & I Standards on this thing before? Are you familiar with the safety regulations that pertain to that cell and that area?

b6 [redacted] It's been a period of several months since I'd read the standards and whether there's been any recent changes in them or not I don't know. At this particular time, in fact most of that time, our standards were in another cell.

Glenn: That would be your standards for assembly - assembly standards - not your general building standards?

b6 [redacted] General safety standards?

Glenn: Yes.

b6 [redacted] Yes, sir - I have read them. I hadn't read them each week but I had read them.

Glenn: Could you give us a few details as to how you put on these cushions?

b6 [redacted] You mean beginning at the time the item is removed from the container?

Glenn: Yes.

[redacted] b6

Well, prior to the removal of the item from the container, the counter is turned on for about 15 minutes so that it will have time to warm up. Then, when the inspector is ready to make his swipe we will take the top off the container and the inspector makes the swipe and then after he checks it and he doesn't get an indication on the meter then remove the item from the container and carry it over to a fixture and turn it upside down with the stem downward.

Glenn: How do you carry it over to the fixture?

[redacted] b6

With the hands.

Glenn: Wear gloves?

[redacted] b6

Rubber gloves - surgical gloves. Turn it upside down and then clean it with kimwipe and acetone and then turn it, lift it up and turn it above the fixture and set it back down and clean the other side. Then put the shield up there between the item and our cards and our pads back there.

Glenn: May I interrupt? One question. How far distance do you carry this PE in your hands?

[redacted] b6

I'd say a foot more or less.

Glenn: Oh. Just a matter of moving it from one fixture to the other?

[redacted] b6

Yes, sir.

Glenn: Go ahead.

[redacted] b6

Then, after it's cleaned of course there is a drying time on it before the assembly can take place, so it's customary to clean it and then take the pads out of the containers, and get them cleaned and check your cards and then go and present it to inspection and the inspector comes out and buys it and then the AEC inspector buys it. Then, take one of the pads and place it over the item and check it and see if you're going to have to trim it and if you do have to trim it then you overlap it, mark it with a pencil and then carry it around the shield and sit down to trim it with the shield between. Then, after it's trimmed -- now this procedure, I understand, has been changed since I was on it but at the time we were using that adhesive that we applied directly to the item -- and then when we started putting the adhesive on, the shield - that bar shield - was in the way so push it back because ---

Glenn: That would be the leaded glass shield?

[redacted] b6

Right.

Glenn: Where has this been in place up prior to this time -- has this been between you and the [redacted]

[redacted] b6

Between the chair and the item - between himself and the item. And then apply the adhesive with the plastic bag -- you have to work it around and smooth it to get it uniform -- you only use a small amount -- and then put that pad on and tape it and then turn it in the fixture and do the same on the reverse side Then after you get both of 'em on, turn it in the horizontal position and check around the equator and make sure there is no overlaps and the gap isn't too big and work all the air bubbles out. The time on this will vary from one item to the next. Then after you get all that done move one of the leaded shields on the table over to the side and carry the item over and put it on the table and then move the leaded shield back in place.

Glenn: Can you work around this shield? Have you ever tried to work around this portable shield?

b6 [redacted]

This leaded glass shield?

Glenn: Yes - with these cushions?

b6 [redacted]

Yes, sir, I've tried.

Glenn: How does it work?

b6 [redacted]

I can't work around it and work that adhesive properly and work the pad because you have to reach around on the reverse side of the item otherwise there is a tendency to push the item out of the fixture and onto the floor if you are pushing it away from you. But you have to have both hands on the item -- you hold the item with one hand and work the adhesive with the other hand.

Glenn: Did you ever remove this -- in the process that you used following b6 [redacted] and the way he was doing it -- did you have to remove this pit from the stand and hold it in your lap to adjust your cushion?

b6 [redacted]

I did that I believe it was the first three days I was out there because I could do it faster and I didn't put some creases in the pad.

Glenn: At that time, where was your film badge?

b6 [redacted]

I moved my film badge down where it would be close to the pit.

Glenn: It was about your waist height?

b6 [redacted]

I would say about waist high. All the time I was working on the item about my waist was closest to the item than the rest of me so I would put my film badge down there and then when I was thru working on the items I would move it back up on my lapel.

Glenn: Did anybody give you instructions as to how you was to wear that film badge at any time, [redacted] b6

b6 [redacted]

The only instructions that was ever given was, and it wasn't to me - I heard it to someone else - not to cover the film badge up with your identification badge

Glenn: No instructions about wearing it on the upper part of your clothing?

b6 [redacted]

No sir. Not until our last meeting. We were instructed in our last meeting where to wear it and to leave it because they wanted the average reading and not the actual reading.

Glenn: Are you familiar with film badge procedure as to where you leave your badge at night for being picked up?

b6 [redacted]

Yes, sir.

Glenn: Did you ever wear this badge and have a chest x-ray?

b6 [redacted]

No sir. I have worn the badge -- well, I wore the badge my last physical which was only a few months ago but when I get a chest x-ray drop the coveralls

our film badge wi

b6 [redacted] Yes sir, it was with me.

Glenn: It was on your uniform?

b6 [redacted] It was on my coveralls.

Glenn: On your coveralls?

b6 [redacted] It is common procedure during working hours out here to wear your film badge with you when you go up at noon to eat or when you go take a break or - as far as I know, everyone wears it when they go over to take a physical, or come over here for any reason.

Glenn: Have you ever worked in a job whereby you could sustain some radiation that you know of in your previous history before coming to Pantex?

b6 [redacted] Not to my knowledge - no, sir.

Glenn: Have you ever worked in any hospitals around x-rays or anything like that?

b6 [redacted] No sir, I haven't worked in them - I've been in them a few times.

Glenn: b6 [redacted]

Phillips: b6 [redacted], prior to performing this work in January this year, did you perform this same job during the calendar quarter of October, November and December of 1964?

b6 [redacted] Yes sir, I did. I was on it a week that time.

Dufek: b6 [redacted] you have given us an estimated time on the job, can you think of anything else that would add to that time?

b6 [redacted] Well, each morning I would spend approximately an hour going over the items that I had done the previous day to make sure they were acceptable to inspection and I noticed at this particular time on it because I was checking my watch fighting time in order to get started on that day's production. You never know when you are working on them how much trouble you are going to run into and you could take considerable time on one item.

Glenn: How much time would you estimate then you spent the next morning at this exposure point?

b6 [redacted] On going over these others, possibly one hour. And I would say my total time would be between three to four hours.

Dufek: The added time in the morning would add twenty minutes to the total time for each unit.

Glenn: Thank you, b6 [redacted]

Glenn: [redacted] we have a report from the contractor stating the conditions surrounding this excess of 3 rems to the whole body for one calendar year. The statements are made in here - Preliminary Investigation. At the time of the report of the 2.90 exposure was received revealed that [redacted] was constantly moving his film badge to various locations on his body so that it was in the closest proximity to the pit at all times when he was performing this type of work, therefore, the indicated exposure to be said to indicate the highest possible exposure to any part of his body and does not represent his average or total body dose. Exposure for the other assemblers that worked on this job approximately the same length of time, [redacted] with a total of 1.60 rems. Is that a true statement?

b6 [redacted] That's true.

Glenn: Any further questions?

Dufek: Yes. You say you moved the film badge on your body - where did you put it besides on the front of your coveralls - did you put it on the sleeves?

b6 [redacted] No. I had it on my lapel when I wasn't actually working with the item. When I was working with the item, in most cases, the item was closer to my waist so I put it on my coveralls at the waist.

Dufek: But that's the only place?

b6 [redacted] That's the only two places.

Dufek: Not on your sleeves or you didn't leave it on the fixture - anything like that?

b6 [redacted] No.

Glenn: b6 [redacted], did you observe any other operators who moved their badges around in proximity to the pit that they were working on during this cushion operation

b6 [redacted] Right.

Glenn: And who were they?

b6 [redacted] b6 [redacted] and I believe b6 [redacted]

Dufek: b6 [redacted] did do the pit cushion operation?

b6 [redacted] Right.

Phillips: I want to ask if you meant b6 [redacted] did this after the last two weeks that you did this, or prior to this?

b6 [redacted] No, I sure don't. b6 [redacted] handled the item on the first pour more than he did in actually putting the cushions on, but he was working with it. I could stand corrected, but I believe that he had the film badge on his waist when he was getting the item ready to make the first pour.

Phillips: Did he work also putting cushions on out in this location where the cushions putting on outside the cell proper?

b6 [redacted] Right. He worked out there I don't know how long but he did work out there putting the cushions on.

Glenn: Thank you, [redacted] b6

[redacted] b6

Oh, now, I beg your pardon -- I was there for a three week period. I was there for one week with [redacted] and I was two weeks by myself. And when I was in there with [redacted] was the operator and then [redacted] replaced [redacted] and was there two weeks on that operation while I was there. So, yes, I am almost sure now that I think about it that I was there in January.

b6

Phillips: And you were in the cell at the time that it was reported that [redacted] had been exposed to excessive radiation?

[redacted] b6

No, I wasn't in the cell when I found out that he had had an excessive amount, but I was in there during the time that [redacted] was on that operation.

b6 b6

Glenn: [redacted], did you ever see [redacted] install this pad in his lap?

[redacted] b6

In his lap? No, I had seen [redacted] do this and -------

b6

Glenn: Did you correct it?

b6

[redacted] b6

This was when I first went into the cell and [redacted] --- when I first went into the cell was when this operation was being questioned. And when [redacted] did get on this operation -- no, he did not install it with the pit in his lap. He surely didn't. This was stopped almost the same time I went into the cell.

Glenn: Had you worked this program before?

[redacted] b6

No, I hadn't.

b6

[redacted]

Glenn:

b6 [redacted]

This would vary according to the production man -- some of them probably could learn it in a matter of a day or two days -- it's all technique that's involved and it would be hard to say when a man would become proficient at putting them on.

Glenn: Say that you have a smart man -- a guy that is adept with his hands?

[redacted] b6

I've had a man today that I had him out there half a day and he's putting them on today and he's doing a good job. In the case of [redacted], several days and he was still having trouble. As a matter of fact, after a week he was stil having some trouble with them. b6

Glenn: How long was b6 [redacted] trained?

[redacted] b6

I never had b6 [redacted] out there -- I never put him on that job.

Glenn: Do you know -- give us the closest estimate you can on how many days b6 [redacted] was assigned to this operation?

[redacted] b6

As far as I know, he was out there one day training, then he was out there two weeks plus about 20-30 minutes the next month, as near as I can remember. I did tell him to go out there when he could -- he was on another operation -- and I told him to go out there when he could in order to -- and I think I did keep another man out there with him one day later than that. Far as I know, he had two days as far as training if you could consider it training.

Dufek: That would be two days over the two weeks?

[redacted] b6

Oh, no. One of these days would have been included in his _____ and also he wasn't out there a full day this other day -- he was out there possibly a few hours. I couldn't make any estimate as to how much time he was out there at all -- but he didn't spend all day out there as far as I know.

Glenn: Can you tell me which production operators were assigned this operation during the month of January?

[redacted] b6

No, sir, I can't.

Glenn: Who could tell me?

[redacted] b6

I didn't keep any records up until then -- I wasn't informed to keep any record of them.

Glenn: You were the foreman during January though?

[redacted] b6

Yes, sir. Part of the month -- I wasn't there the whole month.

Glenn: Who was the other foreman?

[redacted] b6

b6 [redacted] was in there part of the month.

Glenn: How long do you think b6 [redacted] was in there?

[redacted] b6

I believe he was in there two weeks -- he was in there several weeks with me while he was learning the program. I believe that he actually run the operatic two weeks. I might have left out of there on a Wednesday and then he run it a full week by himself. I couldn't say specifically but it seems to me like he was in there two weeks.

Glenn: [redacted] was aware of the rotation plan, wasn't he, on this operation?

[redacted] Yes, sir.

Glenn: And at that time it was for two weeks?

[redacted] Yes, sir.

Glenn: Or was it for one week?

[redacted] It was for two weeks.

Glenn: Do you know how much time during the month that each person was assigned to this job?

[redacted] No, sir. Like I say, I was never given a formal schedule -- I was merely told to keep the people out there two weeks and take them off and this is what I tried to do except for taking this man back out there that Monday morning.

Phillips: [redacted] do you remember what day in January that you started having charge of the operation?

[redacted] No.

Phillips: You don't remember what day?

[redacted] No, there was no reason -- I mean, I maybe covered two or three operations during a short period of time -- I was in there for a week -- I was out for a few days -- and I'm back in there for a week or for maybe two days and I'll cover the 55 for [redacted] for a few days. I couldn't give you the exact dates -- there was nothing to call my attention to the dates.

Glenn: Isn't there any formal record kept of the foremen's assignments?

[redacted] You'd have to ask [redacted] and [redacted] about that. As to whether they keep a record as to where they've got their foremen, I don't have any idea. They merely post a schedule -- there is a schedule if they still have the copies of it. They post the schedule as to where you'll be -- and that's where I'd be until he tells me to go somewhere else. In this particular week he had another operation come up and he told me to cover it and I turned the thing over to [redacted] in the middle of the week -- I believe it was on a Wednesday afternoon -- Thursday morning I began to get set up for this other operation, but officially I still had control of the operation until Monday. On Monday, [redacted] was actually assigned to it. But the people, officially, were under my supervision even though [redacted] was filling the operation for me -- they were officially my responsibility until Monday morning.

Dufek: [redacted] said that he had been assigned this operation two days before the two weeks. Can you account for that or do you know anything about it?

[redacted] He was not officially assigned to perform the operation -- he might could have possibly gone out there to observe if I had informed him in advance that he would be out there the following week. He could have been out there to observe the operation but as far as being assigned to do the specific operation, he was not.

Dufek: He was only assigned the operation then Friday but not Thursday, is that right?

[redacted] I believe I did tell him to go out there Friday and to learn the operation.

Dufek: But no[redacted]

[redacted] No, sir.

[redacted] b6 This particular man?

Glenn: This particular operation - average time per man?

[redacted] b6 I would say the average time would be 4 hours.

Glenn: About 4 hours?

[redacted] b6 All of them.

Glenn: In other words, some are faster than others on this operation?

[redacted] b6 Yes, sir, Some men can probably perform what's required to be scheduled at this time probably in 3 hours - others, it takes all day.

Glenn: You got this man back to work on a Monday, didn't you?

[redacted] b6 Yes, sir. I came back in there but he wasn't on this particular operation when I came back in there.

Glenn: Did you notice where he was wearing his badge?

[redacted] b6 Yes, sir. At the time he was working the job he had his badge down approximately at belt level.

Glenn: I see. Do you think he has been advised - does he have enough instructions as to where he should properly wear his badge?

[redacted] b6 I hadn't advised him where to wear his badge -- it was his understanding that he would wear his badge nearest to the source of radiation.

Glenn: I see.

[redacted] b6 And I'd never been informed otherwise.

Glenn: I see. Now, outside the O & I operations, your O & I instructions and your Safety Standard Operating Procedures, did you have any special instructions regarding this operation? Did you have any special instructions as to radiation hazards?

[redacted] b6 Not that I recall -- I am sure there is some available to me but -------

Glenn: Could you give us a brief rundown, without getting classified, just exactly what this operation comprises?

[redacted] b6 They receive the item in a shipping container, they open the container, call the inspector who takes a swipe, and then they remove the item from the container, place it on an assembly stand, wash it with acetone, present it to the inspector again and then they apply silastic 140 adhesive and apply the cushions and smooth them out, tape them around the equator ----

Glenn: Is this quite a tedious job, smoothing out this cover?

[redacted] b6 Yes, sir, it's a difficult job.

Glenn: Does it take longer on a new operation than it does on a teardown operation?

[redacted] b6 Yes sir. It takes considerably longer to remove the material than it does to apply it in the first place.

Phillips: What kind of training takes place - what kind of exchange of information takes place when foremen change -- such as the change between yourself and [redacted] on this job?

[redacted] b6

We were both familiar with the operation. I had started thru the operation with him and spent several weeks with him before I took the job the first time and it had only been a month or so since I'd been on the job. Primarily, it's my obligation to obtain the standards and any changes that has been made and become aware of 'em - the EI's and what have you - and become familiar with those. As far as any specific instructions between he and I other than process the flow of material - why there is not any. I mean he was aware that I was familiar with the program.

Phillips: Do you have any suggestions regarding improvement training on this kind of work?

[redacted] b6

I'm sure that there is always basis for improvement of training -- it depends on how much time we can spend. As for specific instructions or suggestions, I ----

Phillips: What is your opinion regarding use of shields during this assembly operation?

[redacted] b6

Personally, I think they make this operation much more difficult. I couldn't say that it wouldn't be possible to perform it until I tried it myself but it would be awkward and difficult. If it is necessary, why I am sure that we can ----- personally, I would rather see an apron if it would be acceptable rather than the glass shield that is there.

Phillips: What about teardown - taking the cusions off - the use of the shield in that operation?

[redacted] b6

I think that probably a shield could be used in removing the cushions as I like to keep the removal of them at a minimum anyway. As a matter of fact, I would like to keep it at zero. If we make the operation more difficult we will certainly have more removal, but you could definitely use a shield in the removal of cushions.

Phillips: The other operator -- would that have been [redacted] b6

[redacted] b6

No, I don't believe that I had [redacted] b6 out there - he could have been out there with [redacted] b6.

Phillips:

[redacted] b6

I did - yes, sir, [redacted] b6 is the other man I had out there.

[redacted] b6

Phillips: That's all I have at this time.

Glenn: Don?

[redacted] b6

[redacted] b6 was only there for me three days.

Dufek: Could you tell us just exactly how many days [redacted] b6 did work on this job in this quarter -- do you have that record?

[redacted] b6

As far as I know - the two weeks plus about 15 or 20 minutes. He was on there two weeks as far as I know plus about 20 or 30 minutes on the Monday morning that I came back in there. I had a man sick and I had a cushion that had been applied the day before that wasn't acceptable and I had him patch a place on it --- possibly taken him 20 minutes. This was on Monday and he had put the cushion on was the reason that I had him. It wasn't acceptable was the reason that I had him to patch it.

Glenn: Had he been off two weeks prior to this coming back on Monday or had he worked the two weeks previous to this Monday?

[redacted] b6 I believe that he had worked the prior two weeks - I couldn't be positive.

Glenn: Anything else?

Phillips: We need this. [redacted] b6 it was reported by Standards Audit that [redacted] b6 was observed to work on this item while it was held in his lap - could you elaborate on this?

[redacted] b6 Yes, sir. In order to smooth the air bubbles out, he was laying that item in his lap. I suppose because it was easier - and as soon as I found out it was an objectionable procedure I did order him to stop it. And as far as I know, he had only performed this two days. He had been on the job three days and I stopped him the morning of the third day. It was brought to my attention the afternoon before after he had already finished for that particular day. We had finished this particular operation for that day and it was brought to my attention and I stopped him the next morning.

Glenn: Have any other operators that you had to perform this operation, have they ever had to use this system for putting ------

[redacted] b6 I understand [redacted] b6 - he was the one that was instructed by [redacted] b6 - it was much easier to perform this way.

Glenn: [redacted] b6 Don? Thank you, [redacted] b6

Interview appears to be out of sequence beginning with par 3 page 3

[redacted] b6

This is James Glenn, AEC-AAO Safety Supervisor.

Would you state your name, please, [redacted] b6 and your badge number if you would, please.

[redacted] b6 [redacted] b6 badge number [redacted] b6

Glenn: [redacted] b6 what were your instructions regarding this job where this incident occurred where we got over 3 rems on this one individual. Did you have any special instructions on this job?

[redacted] b6 The only instructions we had were to - not to handle this pit with our bare hands until after it had been monitored. And then keep away from it as much as possible.

Glenn: Were you given any special instructions regarding shielding?

[redacted] b6 This shield come along quite late in the program - very late in the program. And this shield was primarily to keep the PE away from the people except the times when it was actually putting the glue and the cushion on at which times they must get in behind the shield because they cannot properly put it on with the shield in front of them.

Glenn: Is the shield designed wrong in your estimation?

[redacted] b6 It's a modified shield from, I believe, the 56 program. It's bulky, it's hard to get in behind - it's hard to operate from.

Glenn: How long did you supervise this job, [redacted] b6

[redacted] b6 Well, off and on from the very start of the program up until Christmas.

Glenn: What would you estimate as the start of the program?

[redacted] b6 The actual production was probably about in February 1964.

Glenn: Did you have [redacted] b6 on the job two weeks before he came back?

[redacted] b6 From leave?

Glenn: Yeah.

[redacted] b6 He had three weeks leave. Yes, I had him - he was working for me.

Glenn: Then he had worked two weeks on this program and then [redacted] b6 called him back in for a short time before we got this report back.

[redacted] b6 Oh, well, now, - as far as putting on cushions, no - he was setting discs. Now, he had a week of putting on cushions which I am not sure whether it was right prior to his leaving or not.

Glenn: Do you remember the dates of his leave?

[redacted] b6 No, I don't. [redacted] b6 only put on cushions for me once - one week - and it was right around his leave time sometime, but probably the reason he didn't get too much then was he was putting on discs at the same time and he wasn't out there for a very long period.

Glenn: Normally, you restrict that operation to one man out there in that area, don't you?

[redacted] We do our best.

Glenn: What other operators have you had perform this job?

[redacted] I believe that's all. I have had several other people out there for a period of time - for a day or two - but they didn't work out so ----

Glenn: How do you work it, [redacted] when you have these people on this operation - do you have one man that just does this continuously because he is good at it or do you make these people rotate?

[redacted] Well, I tried to rotate them every week because [redacted] got on to us about it sometime back in the Fall and we tried to rotate them every week. But, it's a job that just everybody can't do and it's a job that takes a little training - I mean, that they have got to be adept with their hands. Just everybody can't go out there and put these on.

Glenn: How many hours would you say, in a day's time, a man spent there at that location?

[redacted] Five.

Glenn: Five hours?

[redacted] Now, there's guys down there like [redacted] that can put all these cushions on in two hours - but some of them can't.

Glenn: Well, then, what exactly were your instructions to these operators when you did put these on?

[redacted] I told them to keep that shield in front of them all the time except when they was actually working on the PE which really don't take too long. Most of your time is taken up by getting it up there, getting it cleaned up, and getting inspection out there to buy it and the cushions. Now, that's the time they should keep the shield between them and the PE. And then they have got to push the shield back to do the actual work which shouldn't take too long.

Glenn: How much would you say the average time for one man to put on the two cushions?

[redacted] Oh, the average person - 30 minutes.

Glenn: 30 minutes? Would he be --

[redacted] That's from the time he starts. Oh, better make that 45 minutes - for the average man.

Glenn: Would he be in fairly close proximity?

[redacted] He would be close to it.

Glenn: Have you ever had occasion to warn your people about where they wear their badges?

[redacted] No, I never have because they didn't do that when I was in there. They always wore them in the proper place. I say the proper place - they always had them pinned up here.

Glenn: Up on the upper part of the body?

[redacted] Uh huh - I don't really know how they [illegible]

Glenn: [redacted]

Phillips: No questions.

Dufek: I do. Do you know exactly how many days that [redacted] worked on that particular job in that period?

[redacted] No, I don't.

Dufek: You weren't that familiar with it. You said that you tried to rotate - what was the rotation period?

[redacted] One week - now, it would carry over a day into the next week because it would take at least a day for the same man to show the next man the job which is just about what you got to do because you can't just take one man out there and say, "There it is - get after it!" You've got to have somebody show him how. The man who carried over from the last week on Monday usually stayed out there with him until he got maybe two of them on and then he would go on back to his other job.

Glenn: Did you ever see any of your people remove this PE from the stand or handle it?

[redacted] No, I never did. I don't believe they did either. I heard that they did --- later on, but they didn't while I was in there.

Glenn: [redacted] when you move this pit from this location where you put on the cushions and your drying time is up and your pit is ready for assembly, how do you move it into the cell?

[redacted] It's placed on a small padded cart, an HE cart, and taken to the cell area. Th pit stays on the cart and the HE is placed in the press and the PE is taken fro the cart and placed into another stand similar to the one that the cushions were put on in and it's ready for inspection.

Glenn: Have readings been taken on this pit before and after installation of the cushions? Do you get much shielding from the cushions?

[redacted] [redacted] took some readings right after this last time in July or August -- sometime in there. [redacted] came into the cell and took some readings. There is very little shielding in these cushions.

Glenn: Very little?

[redacted] Very little.

Phillips: [redacted] how many pit cushions are being put on a day?

[redacted] We would average better than three a day - I think it was 3.2

Phillips: Do you know if that is changed or is it still about the same?

[redacted] It is still the same.

Glenn: [redacted] were you able to utilize the shields and if so, in what respect were you able to utilize them?

[redacted] Yes, we did. We utilized it in the respect that at the times when we were not actually applying the glue and putting on the cushions. During the times of the cleaning of the PE and times we were waiting for inspection, we had the shield between the ope[redacted] and the P[redacted] which in my estimation did help.

Glenn: Thank you.

count, had noticed one or two of the boys in this particular operation would have their film badge very near the particular item that was just naturally putting off the high radiation - they would have their film badge very close to it - in fact of business, they would probably held the item between their knees - and [redacted] mentioned it to the foreman and the foreman immediately told the guys not to do this - this is wrong - this is not according to standards. And this I found out about the same day that [redacted] saw it and mentioned to me and I went to the foreman and he said, "Yes, sir, I have already taken care of that."

Glenn: [redacted] b6

Where was the man wearing his badge - his film badge?

[redacted] b6

On the lower part of his coveralls.

Glenn: [redacted] b6

On the lower part of his coveralls?

Yes.

Glenn: [redacted] b6

Now, there is a standard that says he is supposed to wear it on the upper part of his coveralls.

That is right. Yes, sir.

Glenn: [redacted] b6

Phillips: b6 [redacted] could you give the names of the other foremen that have been in charge of this job?

[redacted] b6

[redacted] b6 and [redacted] b6 [redacted] primarily was a trainee in there but he was involved at the time that [redacted] was getting his high count and we had had Wiley off on another program for a few days.

Phillips: In your opinion, has there been sufficient training of the foremen and operator in the use of film badges?

[redacted] b6

I would think so, [redacted] b6 We tried to improve this situation. You know we had - some two or three months ago - we had some of the boys that looked like was a little high so we moved this operation to another place so we could only have one man involved in it and that was the idea of rotating our people. You remember we moved this operation out of the cell area out into - kinda near the cubicles.

Phillips: What instructions are given the operator either verbally or thru standards with regard to limiting their exposure in this operation?

[redacted] b6

The foreman, and I believe each and every foreman would tell a man down there for his own safety protection and for good general work practice how to do this work and ~~-~~ why this man moved his film badge near the item is beyond me. He probably did it in ---- I don't think he would try to exceed nor would exceed - I don't think so, not at all. He probably thought this was the place it should be -- in his honesty, I think so --- I don't think he tried to do anything here that shouldn't be done.

Phillips: What instructions have been given regarding use of shielding for time or distance?

[redacted] b6

Well, this instruction has come thru our Safety Department. Yes, we have shielding --- that was the idea of moving this operation out there --- we have one lead glass shield that we use that this item is behind and even the boys would work the other side of --- it's small --- and then we have the two large shield that when we would complete some of [redacted] would have to be

setting there near this operator they would be behind a shield. They would possibly stay there three and four hours but there would be a lead shield between them and the operator.

Phillips: About how long have we been doing this operation, do you know?

[redacted] b6

Approximately 9 or 10 months, I would say, [redacted] b6

Phillips: I guess if we get into numbers, we would get into classified?

[redacted] b6

Yes, sir.

Phillips: Get from some other source.

Glenn: I believe so, too.

Phillips: I think that's all I have.

Glenn: b6 [redacted]

Dufek: When the man --- you said awhile ago something about moving the badge, was it still on his body? Like on his wrist or ---

[redacted] b6

Yes, it was on the lower part of his coveralls, [redacted] b6 -- you might say near his stomach.

Dufek: That's the only question I have, [redacted] b6

Glenn: I have one question. As these men are rotated, was this man rather a specialist in this job? Had he done this same job continuously?

[redacted] b6

No, sir - he wasn't a specialist. Fact of business, gentlemen, what we have found down there that the boys that do the best on this job and undoubtedly according to their badges are getting the low count, they get the job done fast and get away from it. This man really took longer than most of the people to do this job. However, we must think back, that we can't put a good man out there and say, "When your two weeks are up let's get out of there." In the meantime, this man's count is probably low but we have set a standard or primary procedure to go by and this is what we were doing. This particular boy, [redacted] I think does a real good job but he is just exceedingly slow at it and it took him darn near all day to cover this item where other boys might be through in 2 hours.

Glenn: I see. When you rotate these people, how many people do you rotate in this operation?

[redacted] b6

We try to keep about 7 or 8 boys involved.

Glenn: b6 [redacted] And these 7 or 8 are always rotated?

Yes, sir.

Glenn: [redacted] b6 For two week periods?

Yes, sir. And like I said awhile ago, we do rotate these people only. As I ca think of yesterday, [redacted] called and said, "[redacted] I got 3 people off sick." Well, here, gentlemen, if you intend to operate we try to think of pulling some one back out there. I know that [redacted] did not know that this boy --- had no idea in his head that this boy would be high --- so he pulled him back that particular day to exceed the two weeks that he had been out there. I think

b6

[redacted] this is Glenn with AEC. I wish you would give us your full name, your position and your badge number.

[redacted] Dept. Z Department Head, badge [redacted]

Glenn: [redacted] when you start a new job or continuation of a job that you have done before, what instructions do you give to the foremen regarding this particular job?

[redacted] Well, primarily when a new job is started, the initial period is covered by instructions from the Process Group.

Glenn: How about safety instructions - are you warned of any special hazards connected with this thing by Design Agencies or by anyone else?

[redacted] Well primarily this comes back into the realm of the Process Group in that during the development ~~why~~ they and the Design Agency agree on what the problems are and what will be ~~taken~~ to overcome the problems in this field.

Glenn: Prior to this time, what period of rotation did you have?

[redacted] To the time of this incident?

Glenn: Yes.

[redacted] Well, after this job was started and it was noticed that the people in this are were coming up, we done two things - first thing we done was to pick up this operation that seemed to be getting the greatest amount of exposure and move it off into a place by itself so that these items ---

Glenn: Do you know the MC number of this item, [redacted] This is going to have to be classified. It was in the 58 program?

[redacted] 1493. Moved the 1493 out and into an area - isolated it so that the man doing this job would have the bulk of the exposure rather than the other people working inside of the cell. Then, even after we moved it there it was noticed that this man was still picking up considerably which was really brought to the attention after we changed the people that was developing the film badges ~~back~~ to get faster information and set up a rotation system where the people on this job was rotated approximately every two weeks.

Glenn: Since this time then when you had this rotation period of 10 days per quarter per calendar year -- on the ten days per calendar year then you have gone back now you say to six days to be on this rotation period instead of ten?

[redacted] Yes - to be compared here until we can come out with some solution - we are now on the basis of one day of refreshment plus five days of work on the job.

Glenn: Do you happen to know of [redacted] period of time on this operation?

[redacted] It was two weeks.

Glenn: Two weeks? But [redacted] did come back in the morning to look over his pits to see that he didn't have any that might be rejects that he might be able to fix up. He spent a little time on that each morning, I understand.

[redacted] Well, regardless of what you're doing, as long as you are in the vicinity ~~why~~ you're still picking up count off the things.

Glenn: How are foremen assigned to programs? What system do you use - past experience Do you keep a certain group of foremen for [redacted] program?

[redacted] b6

Well, primarily when a new program is coming along we select out of our foremen, one foreman that will take the primary job of developing the program. In the beginning, he takes the whole program from end to end. Then, as the program progresses along through the pre-pause and the pre-production and the pilot comes into an area of production then generally this man will end up in our cell operations and someone else will take over the packaging or operations after it is left the cell. The selection of this foreman is primarily controlle by the people that are available to do the job -- the foremen that are available to do the job as it comes into production.

Glenn: Do you know what period of time each foreman had for this operation - the dates

[redacted] b6

No, I do not.

Glenn: You don't have that? Which foreman supervised this job?

[redacted] b6

Well, when the 58 program started into being, b6 the primary job of the development for production was given to [redacted] He was with the program way up int the production area and was primarily the key man until we came along and started the production of some 58 type weapons. Then he was pulled out and assigned the job of building the types and the job of the WR work in the cell was assigned to Floyd Wiley.

Glenn: Are these people familiar with their O & I Standards - do they have to read the and initial them?

[redacted] b6

There is a procedure and to the best of my knowledge it is followed to the extent that in each operation there is a book in which the O & I Standards are kept and in the front or somewhere in the book is a sheet that spells out the set of standards that is in the book and this sheet has the signatures of the foreman and all the people who are working on the job. As a person is assigned to the job, his first responsibility is to read and go through the standards and sign off on the sheet.

Phillips: The O & I Standards?

[redacted] b6

Yeah.

Glenn: We have previous testimony that two men held this thing in their lap to put on this cushion installation. Would you happen to know what period of time they did this -- I realize you can't cover all these areas, but ----

[redacted] b6

No, I am not, [redacted] b6

Glenn: b6 [redacted] b6

Glenn: b6 [redacted], this discussion we have had previously about the one day period -- would these new people on the job for training -- in other words, can you train these people in one day to do a job?

[redacted] b6

This one day is the refreshing of the technique by people who have had previous experience -- in some cases, several weeks of time exposed to this in the process of learning. It is the consensus of opinion among the supervision that this is at least a two weeks period of time in order to learn the job from scratch -- to a person who has never seen it. The one day is merely the refresh ing of the technique to a man who already knows how to do the job.

Glenn: Thank you, [redacted] b6

Glenn: Would you identify yourself, your badge, your full name and your badge number and your position, please.

[redacted] b6, badge [redacted] b6 and I'm an assembler.

Glenn: Assembler. You were working in Cell 4 in this area? b6

Yes.

Glenn: And you have worked in that area where this incident occurred? b6

Yes.

Glenn: Now, what were your instructions concerning this job when you were ordered to put on these cushions? You were on the job installing cushions on the pit? b6

Yes.

Glenn: Did you get any special instructions? b6

No, not any special instructions - I watched another fellow for a few times. You know - watched him.

Glenn: Is it quite a tedious job? b6

Yes, it is. Painstaking.

Glenn: The only time that -- did you ever remove this pit from the pedestal and hold it in any other position? b6

Yes, I did.

Glenn: Where do you normally wear your badge - your film badge? b6

I did wear it in this position. I had never been told where to wear the badge until recently in a safety meeting we were told.

Glenn: What position did you have it in before when you had it off the pedestal? b6

I had it in my lap.

Glenn: You had it in your lap? b6

Yes, sir.

Glenn: But your badge was up on your ---- b6

No, it was right here.

Glenn: On the upper part of your breast? b6

Yes.

Glenn: Did any foreman see you hold this pit in that manner? b6

Yes.

Glenn: What foreman was that? b6

[redacted] b6

Glenn: Now, the details of the job, we have those pretty well described. I assume it's the same -- always perform the same operation on this thing. But when you actually put the cushion on the pit, you do not use the shield. You do that by hand?

b6 [redacted] We can't reach around it.

Glenn: But when you do get the cushion put on, you see that the shield is back in place. Is that true?

b6 [redacted] Yes.

Glenn: We're confronted with a little problem also that hinges into this thing slightly -- what about film badge procedure -- are you aware how to leave your film badge at night in the proper receptacle and where it goes?

b6 [redacted] Yes. I have forgotten sometimes and taken it up to my locker though.

Glenn: Try to impress on people that this is quite important in b6 [redacted] operations because it delays the results of our badges coming back. You weren't the only one who left them in the locker. Have you worked with radiation prior to coming to Pantex?

b6 [redacted] No, sir.

Glenn: b6 [redacted] How long have you been employed at Pantex?

Since June 16, 1958.

Glenn: b6 [redacted] And you have worked in Area C or what we used to call Area C?

All the time.

Glenn: b6 [redacted] All the time? Mostly in the cell areas?

Yes.

Glenn: b6 [redacted] As far as you know, you have no previous radiation history?

No.

Glenn: b6 [redacted]

Phillips: b6 [redacted] how many cushions would you normally install in a day?

b6 [redacted] Three is our average - sometimes we would run four and then we would sometimes have some to repair. Take the pad off of it and it takes a good bit of time to remove this silastic 140 off of the PE when it is dried on there.

Glenn: b6 [redacted] Then your repair job takes longer than your original installation?

Oh, yes, yes.

Glenn: b6 [redacted] And then you can't use the shield again, is that true?

b6 [redacted] Can't use it.

Phillips: b6 [redacted] before you begin the job of installing the cushions, are you given time to read the operation inspection standard?

b6 [redacted]

I've never read the standard myself. I suppose I have plenty of time to do so. I followed the operation as the previous to me showed me to do. He didn't show me how to hold it in my lap -- I did do that on my own, now. Because we were having trouble with these pads when I went out there. There's a 40/1000 tolerance on that radius and we were having trouble holding those together and also with air bubbles. It was the primary reason that ---

Glenn: b6 [redacted] Were you rotated off of this job?

I stayed two weeks.

Glenn: b6 [redacted] You stayed two weeks on the same job?

Yes.

Glenn: We're speaking about this one particular job now and this was in the cell installing cushions?

b6 [redacted] That's right.

Glenn: Well, now, when you would come back again after your rotation period - by this rotation period, do we mean that these people were rotated within the cell area or they were rotated to another area?

b6 [redacted] They were rotated on this job in the cells as far as I know. Now, we have all been in there -- the same ones for quite sometime.

Phillips: b6 [redacted] is it harder to get some inspectors to buy installed cushions than it i others?

b6 [redacted] Yes, it is.

Glenn: b6 [redacted]

Dufek: b6 [redacted] Did you ever go over your two weeks on the job?

Oh, I went out there for a small amount of time to watch this fellow put them on -- you know, breaking me in. And then I was out there for two weeks.

Glenn: Were you required to read the O & I standard as to what procedures you would use to install this?

b6 [redacted] No, I didn't read them.

Glenn: And also you are not too familiar with safety regulations that are posted in the cell. Have you read those?

b6 [redacted] Describe for this particular job?

Glenn: b6 [redacted] No, there is a set of General Safety Regulations.

Oh, yes - I am familiar with those - now, I have read those.

Glenn: But the O & I standards, normally you don't read - you are instructed as to how to do this. Let's put it that way - O & I standards that would come out for your assembly operations.

b6 [redacted] Normally we do on most every job that they move us to, you know, when we are not familiar with it. But this job, being in the cell there most of us would run by there and we had become quite familiar with it.

Glenn: b6 [redacted]

Right.

We became quite familiar with the job because we passed by it every few minutes -- going in and out for parts and first one thing and another.

Glenn: b6 [redacted]

As you rotate, does the next man that follows you if he hasn't been on this job -- is he required to read any standards?

Yes, he is supposed to read the standards.

Glenn: b6 [redacted]

But, if the man ahead of him was making a mistake and he instructed this man in the same mistake?

He would probably be making the same mistake.

b6 [redacted]

Glenn: [redacted] will you give us your name, position and badge number, please.

[redacted], Area Safety Engineer, badge [redacted]

Glenn: [redacted] do you have a record of [redacted] dose records?

[redacted] For what period? I have it for July 1964 thru January 1965.

Glenn: Would you give us those, please?

[redacted] His dose record was .13 rems for July 1964; .33 rems for August 1964; .134 rems for September 1964; .04 rems for October 1964; .83 rems for November 1964; .16 rems for December 1964, and 2.95 rems for January 1965. For February 1965 we have a partial report which is .24+ rems.

Dufek: That brings the total to 3.19 rems.

Glenn: Do you have the neutron dose background for other operations in the area?

[redacted] The neutron dosages were taken with an Eberline Neutron Counter on three programs, including the program in question, and these readings were taken at the surface of the item which will give you about five times the dose you would get at a foot.

Glenn: Item being the pit?

[redacted] Item being the pit. And when I say about five times a dose at the pit's surface, that means thru the pit container.

Glenn: You mean your shipping container?

[redacted] Yeah. That's an approximation.

Dufek: You're speaking of the surface of the container and not the surface of the item?

[redacted] That's right.

Dufek: Your surface readings here -- is that at the surface of the pit?

[redacted] This is it - this reading I will give you here will be at the surface at the pit.

Dufek: I see. And then one five inches away?

[redacted] And then about a foot away.

Dufek: It will be five times less.

Glenn: You know about the period of operator's assignment and their rotation in this operation whereby the cushion is put on the pit?

[redacted] Yes, there was a rotation assignment started at the first of 1965.

Dufek: On the two weeks basis?

[redacted] Prior to that it was on a one week's basis which began about November.

Glenn: Do you know why they changed the rotation time?

[redacted]

DOE b(3)

Glenn: Can you give the surface dose rate of the item of the pit gamma and neutron total -- surface dose rate?

[redacted] Total gamma neutron -- on item in question?

Dufek: The item in question -- MC 1493.

Phillips: This is classified on tape so you can use any terminology you want to.

[redacted]

Glenn: Do you know the energy of the gamma by a spectrometer?

[redacted] I do not.

Glenn: On your other programs, what similar problems can exist?

[redacted] Yes, we have two other programs that the problems as far as total neutron and gamma readings are approximately the same.

Dufek: [redacted] this CP1 Counter measures all the radiations from 6 Kv up to about 1.3.

Glenn: How about the shield in use, [redacted] was it practical? We have had some tests -- on this one operation that they said it was just impossible to use -- we kinda had the feeling that the attitude was part of it.

[redacted] The attitude on the part of the operator probably was part of it; however, I can see some of their problems in using the shielding that they were using.

Glenn: [redacted]

Phillips: [redacted] could you identify the film badge vendor that provides us with service?

[redacted] That's the Landauer Company of Matteson, Illinois.

Phillips: The dose rate you gave on [redacted] for this calendar quarter -- that would be January and part of February -- were what again?

[redacted] For January 2.95 - that's correct thru January - and then we have recorded .24 for February.

Phillips: Which totals 3.19?

[redacted] That would be right.

Phillips: This "plus" for February -- he wore a badge for two or three days?

[redacted] He was issued his second two weeks badge early -- it was issued on the 9th of the month.

Phillips: He was taken off this operation on the 9th but he was not completely removed from the cell area? He was removed from the cell on the 9th and ------

[redacted] Yes, he went to another area.

Phillips: He was in 24 Building Assembly for anoth[redacted] So then it would be that reading of the day to add to that [redacted] ther than

[redacted] b6

No. We had about four that just barely got over 100 mrem per week.

Phillips: [redacted] b6

Well, with the same kind of dose rate on those items, why isn't the exposure problem on those two programs like the one on the 58? DOE b6

Dufek: [redacted] b6

You mentioned that you saw [redacted] back in the area -- do you know how long he worked there at that time?

The supervisor said he would remove him from the area right then. He was gone by noon, I understand, and that was in the morning.

Dufek: [redacted] b6

What would you estimate the time that he did work there that day?

Not over four hours -- it would be less than four hours. DOE

Glenn: [redacted] b6

No.

Dufek: [redacted] b6

[redacted] what is your opinion as to the reason that some people can do this same job and get considerably less exposure than [redacted]? b6

I wouldn't want to tie it to [redacted] b6 alone. We got some people in the area that can perform this operation with a great deal more agility and they have more of a mechanical aptitude, I'm sure. They put their minds to it and get the job over with and move away from the item. Others, possibly [redacted] b6 I haven't observed him any more than I have some of the others that seem to be slow --- spend more time up near the item, apparently piddling after the cushion is installed, probably because they want to be sure they do their work properly

[redacted] b6

UNCLASSIFIED [redacted]

To File
From: J. V. [illegible]
Subject - Minutes of the Investigating Committee

A meeting was held on March 2, 1964 beginning at 9:00 AM to attempt to get the report in a draft form for presentation to Mr. Blackwell for approval.

The draft was completed and Mr. Dufek was to contact Mr. [illegible] for a cleared typist to be typed for clarity and correction [illegible].

The [illegible] Standards should be available late today or early tomorrow. The photographs should be delivered by noon tomorrow.

There were no interviews

The meeting adjourned at 3:45 P.M.

[redacted]

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[illegible] [redacted]

To - [illegible]
[illegible]

[illegible] on Nov. 3, 1965 at 12:45PM with all members present.

The typed draft report was reviewed by all members and some additions and changes were made. The exhibits had been received and one copy of each exhibit was prepared for informal presentation to Mr. [illegible].

There were no interviews

The meeting adjourned at 3:45PM

UNCLASSIFIED

[redacted]

UNCLASSIFIED [redacted]

Feb. 24, 1965

To - File
From - J. V. Glenn
Subject - Minutes of Investigating Committee

Feb. 24, 1965

The meeting opened at 1:00 PM in Room 207 of Bldg 12-36. Committee members present were Glenn AEC/AAO; Phillips & Dufek M+A-S.M.Co.

b6 [redacted] was the first witness called. The questions and answers were recorded. The interview stopped on number 77 on the recorder.

b6 [redacted] was interviewed next, he was the foreman in charge when the exposure became known (Cell 4, [illegible] area). The questions and answers were recorded. b6 [redacted] Testimony started on number 75 of the recorder and ended on number 153

It was arranged for the committee to meet wit b6 [redacted] in Cell 4 at 9:00 AM on Feb. 25, 1965 to review the operation. Pictures will be taken.

The Committee will meet again at 1:00 PM same location on Feb. 25, 1965.

Meeting adjourned at 2:45 PM.

UNCLASSIFIED [redacted]