

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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INL/ANL-WEST WORK GROUP

+ + + + +

MONDAY
AUGUST 14, 2017

+ + + + +

The Work Group convened telephonically at 10:30 a.m., Eastern Time, Phillip Schofield, Chair, presiding.

PRESENT:

PHILLIP SCHOFIELD, Chair
JOSIE BEACH, Member
JAMES M. MELIUS, Member
GENEVIEVE S. ROESSLER, Member

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3

ALSO PRESENT:

TED KATZ, Designated Federal Official
BOB BARTON, SC&A
RON BUCHANAN, SC&A
DOUG FARVER, SC&A
MITCH FINDLEY, ORAU Team
JOE FITZGERALD, SC&A
BRIAN GLECKLER, ORAU Team
JOHN MAURO, SC&A
JIM NETON, DCAS
STEVE OSTROW, SC&A
MICHAEL RAFKY, HHS
JOHN STIVER, SC&A
TIM TAULBEE, SC&A

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Contents

Welcome and Roll Call..... 5
NIOSH SEC Petition Evaluation for CPP..... 7
Recommended Class Extension..... 7
SC&A Review of CPP Internal Exposure to..... 19
Alpha Radiation Prior to 1963..... 19
Plans for August Board Meeting and..... 73
Status/Path Forward on Ongoing Issues..... 73
Resolution for INL/ANL-W..... 73
Adjourn..... 101

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1 P-R-O-C-E-E-D-I-N-G-S

2 (10:33 a.m.)

3 **Welcome and Roll Call**

4 MR. KATZ: Welcome, everybody. This
5 is the Advisory Board on Radiation and Worker
6 Health for the INL and ANL-West Work Group.

7 And some preliminaries here. The
8 agenda for today, and the material that will be
9 discussed today are posted on the NIOSH website
10 under the Board section, schedule of meetings,
11 today's date. Go to that page and you can look
12 at the agenda, you can see the documents that are
13 being discussed and follow along accordingly.

14 We also have Skype, but that's only
15 for the Members, because it has to be that way to
16 protect privacy. And on Skype, folks who are
17 online with this meeting, are not public members,
18 if you want to follow along, and, actually, Tim
19 is going to show a presentation there, but I'm
20 not sure.

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1 Okay. Board Members, we have Phil
2 Schofield, Josie Beach, Gen Roessler, and Jim
3 Melius. None of them have conflicts of interest
4 of this site, but please, as we do roll call, the
5 rest of the folks, speak to conflict of interest,
6 and let's start with the NIOSH ORAU team.

7 (Roll call.)

8 MR. KATZ: Okay, let me just ask
9 everybody to please mute your phones, except when
10 you're addressing the group. If you don't have
11 any button press *6 to mute your phone, *6 to
12 come off of mute, and don't put the call on hold
13 at any point.

14 And with that, it's your meeting,
15 Phil.

16 CHAIR SCHOFIELD: Okay. I think we'll
17 start off with SC&A, unless somebody has a better
18 idea here.

19 MR. KATZ: Phil, I think you need a
20 presentation, right, from NIOSH first.

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1 CHAIR SCHOFIELD: Oh, okay.

2 DR. TAULBEE: Well, Ted, this is Tim.
3 I actually didn't prepare a presentation for the
4 Work Group. I've got one for the full Board
5 meeting for next week. I can certainly go through
6 that with the Work Group if that's --

7 MR. KATZ: Okay.

8 DR. TAULBEE: -- what you want.

9 MR. KATZ: Well, if you don't feel the
10 need to, then that's fine. I'm not --

11 DR. TAULBEE: Well, I mean, I can give
12 an overview of what we're going to be talking
13 about next week, and that's certainly -- I can
14 certainly do that. I'm not sure if you wanted a
15 presentation, but if you do, we can.

16 MR. KATZ: No, no, no. I'm not trying
17 to drive the train here.

18 **NIOSH SEC Petition Evaluation for CPP**
19 **Recommended Class Extension**

20 DR. TAULBEE: Okay.

1 I guess, first of all, everybody did
2 get a copy of the ER, correct? It is posted on
3 the website, the 83.14.

4 MEMBER BEACH: Yes.

5 DR. TAULBEE: Okay. And what you
6 found in that is that we are recommending to
7 expand the Class from January 1975 up through
8 December of 1980, and the reason is, as we learned
9 in our evaluation, that the site did not
10 implement their routine bioassay monitoring
11 program as quickly as one might have expected
12 given that report in October of 1974.

13 It took some time with, I guess,
14 negotiations with the bioassay lab as to how many
15 samples they could do, but there just didn't seem
16 to be any urgency to that until there was some
17 implementation around 1978, and they saw some
18 additional low-level intakes, and then at that
19 time, they began to really get it in gear in a
20 sense and implemented the bioassay by 1981.

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1 I guess, the most important thing that
2 I would draw the Work Group's attention to is
3 Table 5-2 in the ER, and there it clearly shows
4 that, you know, you go from just a handful of
5 bioassay for plutonium during the years -- let's
6 see, 1976 and '77, there were none, and then
7 you've got a few fecal samples in 1978, '79 a few
8 more, 1980 a few more. But then in 1981 is when
9 you can see it jumps into the hundreds of people
10 being monitored.

11 So, that's why we're recommending
12 extending this Class is that even though there
13 was an evaluation done and a recommendation to
14 institute routine bioassay, it wasn't
15 accomplished until 1981.

16 So, that's the crux of the main reason
17 why we were expanding, or recommending expanding,
18 this Class at this time.

19 The other thing that I would pull, or
20 bring to Work Group's attention is that in 1975,

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1 the sites which backed to one area -- or one badge
2 one area methodology for external monitoring.
3 The reason they did this was that -- well, the
4 main reason they went to the all-area was they
5 had one contractor who was controlling, or
6 managing NGR, as well as CPP, Test Area North,
7 and the Central Facilities, and they both got the
8 contract again in 1975, and individual
9 contractors didn't want to be responsible for
10 dose at other facilities, and the only way to
11 track that was to go back to the external
12 monitoring of one badge one area, and so we found
13 the documentation of that, and it certainly
14 appears that way from the record and the review
15 that we did, and so in the report, we included a
16 table showing, again, the monthly reports those
17 that we had with a number of badges to try and
18 show the completeness inside the Evaluation
19 Report this time instead of doing it after the
20 fact.

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1 So, those are the two things that I
2 wanted to point out to the Work Group, and answer
3 any questions if you have them.

4 (No audible response.)

5 DR. TAULBEE: Hearing no questions,
6 then I'll be happy to -- or, again, I'll be
7 presenting this next week at the Board meeting to
8 the full Board as we do generally 83.14s, and --
9 well, actually, all of the SECs, and I can
10 certainly address any questions then if you have
11 them as well.

12 So, with that, Phil, I'll send it back
13 to you.

14 CHAIR SCHOFIELD: I don't particularly
15 have any questions unless somebody else does.

16 MEMBER BEACH: Tim, this is Josie.
17 I'm sorry I didn't jump in. What was the -- can
18 you remind me what the cutoff date was for the
19 original ER? I know you're only going up to '80s
20 -- '80s here.

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1 DR. TAULBEE: The original ER asked
2 through 1970, and when we got to 1970, we saw
3 that there was still an infusibility, so we
4 continued on until the first opportunity where we
5 thought it might change, and that was with that
6 report talking about implementing a routine
7 bioassay, and so that was why we cut it off in
8 December of 1974, December 31, 1974, and we
9 continued, or we indicated at that time that we
10 would look at further depending upon when they
11 implemented the bioassay, the routine bioassay.

12 If they had implemented it in January
13 of 1975, we would not be recommending an SEC
14 extension here under the 83.14. So, the original
15 petition though only went through December of
16 1970.

17 MEMBER BEACH: Okay, that's what I
18 thought. Thank you.

19 CHAIR SCHOFIELD: Anybody have any
20 questions for Tim?

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1 MR. BARTON: Yes. This is Bob Barton.
2 Could you talk just a little bit more about, I
3 guess, kind of the characteristics of the
4 plutonium change? I mean, actually, we have over
5 200 urinalyses from 1981, and almost 300 fecal
6 samples.

7 Do we know an idea of how many workers
8 were actually in that routine program? I mean,
9 how does that really break out from total samples
10 to like the number of actual workers we're
11 talking about?

12 DR. TAULBEE: That I don't have at the
13 top of my head here. I mean, in general, here if
14 you can -- let me go down here and look at the
15 external monitoring here in that time period.

16 It looks like there were -- I'm
17 looking at Figure 5-1 now. Just a second here.
18 It looks like there were about -- well, by 1981,
19 it looks like there were about 1,200 monitored
20 workers, so we're looking at about 20 percent of

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1 the workforce.

2 And keep in mind, CPP is quite large.
3 You've got the calciner running at this time
4 period, and so you've got a lot of mixed fission
5 products going on. The plutonium exposure is
6 really limited to that separations building.

7 Not everybody worked there, so you had
8 some -- you had the calciner operation, you had
9 the spent fuel pool -- I can't remember the
10 building number, I want to say it's 603, but that
11 could be wrong, where they received all of the
12 fuel, so there's kind of three major operations
13 going on there at that same time, so the plutonium
14 exposures are really limited to the, the main
15 processing building, the 601 facility.

16 They also broke out a separate kind of
17 engineering area during this time period that was
18 in another building, so there were a lot of people
19 there on site, but not all of them going into
20 CPP, so they were monitoring the operations folks

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1 that were routinely gaining access.

2 We have coded this data by the way,
3 but we are in the process of checking it for
4 completeness and accuracy, and once we do, then
5 we'll have a better idea of the demographics of
6 the individual workers that were monitored from
7 urinalysis and fecal.

8 I don't know if that answers your
9 question at all, but I hope it does.

10 MR. BARTON: Yes. Obviously, you guys
11 are still working through the, like you said,
12 kind of parsing out the demographics.

13 I mean, are these samples -- do they
14 actually delineate the area within CPP, or do we
15 just know that they were in CPP when they
16 submitted these samples?

17 DR. TAULBEE: Mitch, do you happen to
18 know that?

19 MR. FINDLEY: They were working at
20 CPP, Tim.

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1 And, Bob, to elaborate a little bit on
2 what Tim said. They typically tried to focus the
3 analyses for plutonium on those that may work
4 with materials that didn't have the mixed fission
5 products in them, so these were the chemists,
6 analysts, decon technicians in certain areas,
7 that types of, types of people, and those were
8 actually the list of personnel that were
9 generated and sent to RESL each month, as far as
10 who needed to be included in the bioassay
11 program.

12 MR. BARTON: I see. Thank you.

13 MEMBER BEACH: Well, and this is
14 Josie. I kind of had a question on that also.
15 Your cutoff is 1980, and I can see on your Table
16 5-2 that the urinalysis and the fecal increased,
17 but then I see they went down again in '86.

18 I guess, my question is, how do you
19 know that they captured everybody that actually
20 needed to have the sampling after, of course,

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1 1980?

2 DR. TAULBEE: Well, you know --

3 MEMBER BEACH: Well, I ask that, Tim,
4 because you say CPP was a large operation, and -
5 -

6 DR. TAULBEE: But until we go through
7 and we look at exactly which jobs people were
8 doing, I guess, there's no way for us to really
9 answer that at this time exactly. I mean, by
10 just looking at the numbers, I mean, and as Mitch
11 pointed out, they were trying to sample the
12 people that had a potential for a plutonium or an
13 actinide-type of an exposure without an exclusion
14 product one, and, you know, you see the numbers
15 jump tremendously here. I mean, it's a factor of
16 10 or 20.

17 MEMBER BEACH: Well, yes, I see that.

18 DR. TAULBEE: And the other thing that
19 I would say here about 1986 is, you see a decrease
20 in the urine, but an increase in the fecal, so it

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1 went more towards fecal sampling at that point in
2 time, so I -- you know, like I said, unless we -
3 - until we do a, you know, kind of case-by-case
4 type of evaluation of what was their job and
5 looking at that, at that level of detail, then,
6 you know, we've got the list of the people who
7 were provided -- or who were requested to leave
8 a sample, and, you know, as Mitch pointed out,
9 those tended to be the people who could be working
10 with just actinides and not have a mixed fission
11 product component.

12 MEMBER BEACH: Phil, this is Josie. I
13 don't have anything else right now.

14 DR. TAULBEE: Okay. Phil, hearing no
15 other questions, I'd send it back to you then.

16 MEMBER BEACH: Phil, are you on mute?

17 CHAIR SCHOFIELD: Yes, I am.

18 (Laughter.)

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1 **SC&A Review of CPP Internal Exposure to**
2 **Alpha Radiation Prior to 1963**

3 CHAIR SCHOFIELD: Yes, I was on mute.
4 Since there are no other questions at
5 this time, I'd like to have SC&A, their review of
6 CPP internal exposures for the alpha radiation
7 prior to 1963.

8 And one question I have right off the
9 bat on that is, if they have any real idea if
10 there was much plutonium used going through the
11 process at that time?

12 MR. BARTON: I don't know.

13 Tim, do you want to tackle that one,
14 or I can talk a little bit about it if you want?

15 DR. TAULBEE: I can -- I can tackle a
16 little bit of it.

17 There wasn't any effort to separate
18 out the plutonium prior to the 1963 time period.
19 In 1963 is when the lab started doing some
20 experimentation with doing the separations in
21 preparation for a campaign that started in 1965

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1 and continued through 1972, so while there could
2 be some plutonium coming through in the sampling,
3 the sampling would also be containing the uranium
4 and, I believe, that most of the alpha that you
5 see, especially, in the bottling room that SC&A
6 talks about is uranium-235 in a nitrate form
7 during that time period.

8 CHAIR SCHOFIELD: They looked at the
9 -- how far did you guys get through on that
10 looking for maybe the exposure records, not just
11 with people, but like in some of the rooms and
12 stuff for alpha contamination which would be an
13 indication where all this was used?

14 MR. BARTON: Well, so I don't have a
15 formal presentation, but what I did do is I went
16 through the report and kind of pulled out the
17 slides and tables, which I can put up on Skype,
18 and we can kind of go through them, and you'll
19 see a lot of the logbooks that we were able to
20 pull during data capture, and there's room survey

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1 logs, some air sampling sheets that are in that
2 report.

3 These are really examples that we
4 pulled when me and Joe were out there, and Josie
5 and Gen Roessler too, and really kind of
6 concentrating our efforts on boxes that had not
7 really been looked through yet as part of the ER
8 process, and so that sort of forms a basis of
9 this report.

10 I don't know. Would it be beneficial,
11 I can kind of go through the report and maybe
12 stop after each finding, and then we can discuss
13 them each in turn, or we can go through the whole
14 thing and discuss it at the end?

15 I don't know what's going to be most
16 beneficial, but I think it might answer at least
17 some of your questions right off the bat to sort
18 of go through the report, and then we can talk
19 about it as we go.

20 CHAIR SCHOFIELD: That might be

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1 helpful. I know it would be to me.

2 MR. BARTON: Okay. Let me see if I
3 can get this up on Skype. And if anybody's on
4 that, can you just let me know when, if anything
5 pops up?

6 DR. MAURO: It just showed up on mine.

7 MR. BARTON: Okay.

8 DR. OSTROW: Yes, this is Steve. It
9 showed up on my computer also.

10 MEMBER ROESSLER: Mine says it's
11 loading. There it is.

12 MEMBER BEACH: I got it.

13 MR. BARTON: Okay, great. Alright,
14 so, obviously, we're talking again about CPP, but
15 prior to 1963 where the current SEC evaluation or
16 recommendation is. And as you know, the purpose
17 of CPP was obviously to kind of take, you know,
18 uranium that had already been run through the
19 reactors and strip away the undesirable
20 contaminants and fission products, some of those

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1 transuranics, and be able to essentially reuse
2 the uranium.

3 Now, the main question is is, what --
4 how do you bound any exposures to the alpha
5 component of the source term? And currently, as
6 we understand it, and as it's in the INL TBD,
7 it's basically a ratio method.

8 There's very extensive fission
9 product bioassay at CPP pretty much throughout,
10 and so if you take those fission products and
11 apply a certain ratio, you can kind of back
12 calculate to what the, the alpha component is
13 based on those fission products, but we asked
14 ourselves the question, "Well, are there any
15 situations where you're going to have people who
16 were exposed to just, you know, sort of the alpha
17 component where the fission products have already
18 been stripped away that wouldn't allow you to
19 really use a method, because you just don't have
20 the fission product component?"

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1 I guess, I'd note here that SC&A
2 released the report back in January that's sort
3 of a companion report to what we're about to talk
4 about. That one was done by Ron Buchanan. It's
5 entitled, or titled, "SC&A's Evaluation of
6 Cesium-137 and Strontium-90, Fission and
7 Activation Product, and Actinide Values Using INL
8 Monthly and Annual Waste Reports in Relationship
9 to Assigning Intakes."

10 So, that looks at the specific ratio
11 method and what data is out there to support those
12 ratios. As I said, that's sort of a companion
13 report. This one's more looking at, are there
14 any situations where using a ratio might not be
15 appropriate?

16 So, the way SC&A went around, you
17 know, tried to wrap around that problem was we
18 look at, obviously, the SRDB documents that are
19 already there. They are some survey data and a
20 couple of incidents, which we're going to talk

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1 about, and there was the additional data capture
2 that we were involved in back in January and March
3 of last year.

4 There was also some focus interviews
5 with former workers. Now, the interviews weren't
6 only focused on the issue of CPP prior to 1963,
7 but we did specifically ask them questions about
8 alpha emitters during that timeframe to try to
9 glean some information. Those interviews were in
10 person in January and November, and by telephone
11 in February, April, and December of last year.

12 And then, the last thing we did was we
13 went into some claim files and looked
14 specifically at job titles, such as chemists and
15 other laboratory type personnel, or people who
16 would be involved in the end stages of the product
17 sampling and packaging, and -- you'll see why,
18 but it's sort of intuitive.

19 Those are the people who if there was
20 a potential for exposure to alpha emitting

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1 material that wasn't sufficiently comingled with
2 fission products that's pretty much where you'd
3 look first.

4 So, the first slide we're looking at
5 here -- and, again, this is from our data capture.
6 This is a health physics daily shift report. And
7 as you can see there's spaces for 36 different
8 entries.

9 If you look at the bottom of the page
10 here, this one was from January 1955. It was on
11 the third shift with Crew C. And I called a
12 couple of things out here in blue.

13 And for those, I don't know if there's
14 anyone on the phone who doesn't have access to
15 Skype, but this report is on the website. And
16 right now, we're looking at Section 2, and it's
17 on page 11.

18 And I called out a couple of lines
19 here, lines 6, 7, 9, and 10 for location 207.
20 It's a little hard to read, which is why I tried

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1 to blow it up into a PowerPoint slide, but as you
2 can see, those rooms were -- there's a
3 contamination survey that was done. That's sort
4 of that second column with a check, the next
5 column over.

6 Consultation or special services,
7 that's what's checked there, and then count the
8 number of smears that were taken, the number of
9 smears that were counted, and then over at the
10 far right, you'll see under remarks and
11 explanations, they found wall contaminations, and
12 there's the alpha after, floor contamination,
13 again, alpha, and then as you notice -- so that's
14 entry six and seven, and then down at nine and
15 ten, it appeared they went back during the same
16 shift and took more samples.

17 So, this is sort of the format of one
18 of the records that we were looking for. These
19 things were contained in really large
20 compilations of logbooks, and so we went through

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1 them and we pulled a few examples, which we
2 summarized basically in our own table form, which
3 is going to be the next slide.

4 This is Table 1 in the report. It's
5 on page 12. So, this shows, again, these are the
6 alpha contamination surveys. You can see there's
7 an alpha incident, there's a contamination of the
8 hands. These -- the ones you're looking at right
9 now are from 1953 to 1954. You see there's a
10 column labeled area, and you have LB-1 and LB
11 Halls, which seemed to be laboratory locations.

12 If you look specifically at example
13 five in this table, you can see that an incident
14 report was completed as a result of that
15 activity. We could not locate that incident
16 report, so we're not really sure where that is or
17 if it was kept.

18 So, on the next one, we're still
19 looking at more of these examples from the Health
20 Physics log sheets. These are from 1954.

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1 If you look at example nine, there was
2 a spill, then later in the shift, they surveyed
3 it again before cocooning a hood, which I assumed
4 to mean they wrapped it up in some packaging
5 possibly for potential disposal or maybe just
6 keep it in place until it could be
7 decontaminated. I don't really know.

8 Example 11 on this sheet, again, this
9 is from Room 207, which would be the example we
10 provided before. Again, there was a spill.

11 If you go to the next one -- and,
12 again, these are all examples, which are in the
13 report, and that we found in the shifts,
14 essentially, activity shift logbooks to document
15 what each, each shift was doing.

16 So, now, again, we're looking at --
17 this is on page 14 of the report. Again, you
18 have alpha contamination found, they're surveying
19 some tools, there's a survey in the final product
20 bottle room. These are, again, 1954 to 1955.

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1 If you look at example 18, there was
2 an explosion, then they used a Samson meter,
3 which is an alpha meter, but also a GM meter, but
4 we note here that there was also a
5 decontamination survey the very next day after
6 this explosion event, and they only used the
7 Samson meter at that one, so I assume that they
8 only found alpha the first time, and so went back
9 after decon to see if there was any alpha
10 remaining. And, obviously, there was an incident
11 report compiled over this, but we were not able
12 to find that either.

13 Okay. And the last entry is on --
14 this table, again, this is Table 1 from the
15 report. Sort of more of the same. We have
16 contaminations, possible spills, and, again,
17 similar locations. We have Room 207, we have
18 laboratory areas, and also noted activities in Q-
19 cell and E-cell.

20 Another type of record we found was

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1 more descriptive about individual activities.

2 It's loading up on my screen, so it
3 may take a second for you folks, but this is a
4 little bit more descriptive than those logbook
5 entries that I was just showing you, and this
6 really talks a lot more about it.

7 Here's one example that we pulled.
8 This is -- this is in Lab 32. This is from 1954.
9 It doesn't say it on this sheet, but this is,
10 this is a log from 1954, and it says, to the best
11 of my ability, "Got to checking around LB-32
12 after floor plan showed quite a bit of alpha
13 contamination. Took smears off of walls,
14 equipment, etc., all extremely contaminated. The
15 only thing this could be due to is airborne
16 contamination. To add to the problem, most of
17 the activity is U-233, which is three to four
18 times more hazardous than U-235. Started a 24-
19 hour air sample and roped off the area, about 15
20 smears taken and counted."

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1 So, again, this is sort of a different
2 type of record that documented HP activities was
3 going on, then obviously gives a lot more
4 information, so just like we did before, we kind
5 of summarized some examples of these into a
6 table, and, hopefully, that table is popping up.

7 So, what we're looking for -- for
8 those following just from the report, this is
9 Table 2 on page 17. Again, you have the lab
10 areas, the PM area, which I assume is the product,
11 product area.

12 You see example six here was an air
13 sample that they counted for alpha, and had no
14 significant beta-gamma counts.

15 Example seven had a -- it says,
16 "Routine Area Survey. Found several hot spots.
17 Reported same. Forty-one smears taken, and
18 counted for alpha-beta-gamma. Found an alpha
19 contamination at LB-32 again." And again was
20 underlined in the actual record. That's not

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1 something we added.

2 So, that brings us to Finding 1, which
3 should pop up on your screens, and I'll read this
4 one.

5 "SC&A found multiple examples and
6 sampled HP logbooks that indicate alpha
7 contamination was detected without corresponding
8 indications that beta-gamma contamination was
9 also present. This is indicative that they were
10 certain situations and locations at CPP in which
11 alpha contamination may have existed that was not
12 comingled with fission and activation product
13 material."

14 So, I guess, I'll ask, do we want to
15 stop here, are there questions so far, or I can
16 keep going?

17 CHAIR SCHOFIELD: Does anybody have
18 any questions?

19 (No audible response.)

20 MR. BARTON: Okay. Hearing none, we

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1 can move on.

2 Another thing we found, move on to --
3 moving on to the next slide shortly. We found
4 some alpha monitoring in the Product Bottle Room.
5 These were smears essentially taken on the
6 uranium bottles to check for contamination
7 presumably on the outside of the container.
8 These are from 1954.

9 And, again, if you're looking at the
10 report, you know, what we're seeing right now is
11 Figure 3 on page 19, and, again, Figure 4 on page
12 20.

13 So, as you can see here, I called some
14 things out in red. Obviously, they're analyzing
15 for alpha. It's in the -- it's a product bottle
16 smear. You can see some notes that some of them
17 were taken after the bottle itself had been
18 decontaminated. There's some indications in some
19 of the other samples that they should be
20 decontaminated.

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1 As you look in the bottom left, you
2 can see that bottle 108 was rechecked, and that's
3 one of the ones called out that needed to be
4 decontaminated, and it was clear it was okay.

5 So, we'll head into the next slide.
6 Again, this is -- this is the next day again we're
7 analyzing for alpha. You see there's a couple of
8 checkmarks here. I assume that that meant
9 decontamination was necessary, and that's only
10 because directly below that, you can see that
11 rechecks were taken for bottles 101 and 155,
12 which were the ones checked off above, and so
13 they were actually rechecked again during the
14 same day, again, presumably after they had been
15 decontaminated.

16 Figure 5 in the report, it has an air
17 sample from 1954. Again, this is the Product
18 Bottle Room. The result appears to be five-
19 times-ten-to-the-minus-11, and has a uC for
20 microcurie. It doesn't say per milliliter, but

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1 that's kind of -- or per cc, but that's pretty
2 much assumed just based on the surrounding
3 records that we looked at, I mean, don't report
4 air samples as simply an activity, it's always
5 got to be normalized at some volume, and the
6 volume that always appeared was per milliliter.

7 So, again, here they were taking air
8 samples during -- in the final product room.
9 Again, this was from 1954.

10 So that will bring us to Finding 2,
11 which reads, "SC&A found examples of alpha
12 monitoring taking place in the Product Bottle
13 Room, including smear surveys of product bottles
14 and bird cages, as well as air monitoring for
15 alpha. This is evidence that alpha
16 contamination, including airborne contamination,
17 was a concern to the HP staff for this area.
18 Given the nature of routine work activities
19 encountered in the Product Bottle Room, it is
20 unlikely that workers in this area would also

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1 encounter the fission products," because the
2 whole point was to pull them off, "that are
3 commingled with the enriched uranium."

4 So, that is Finding 2. Again, if
5 anyone has any questions or wants clarification,
6 please just jump in and stop me.

7 Another thing that we found during
8 data capture, and also there were a few of these
9 on the SRDB, were area survey maps. And here's
10 one example. And, again, these are the types of
11 activities that were kind of described previously
12 on those log sheets of going to different areas
13 and performing contamination surveys.

14 So, as you can see here, and it may
15 be difficult, but you can see there's several
16 things called out in counts per minute. And then
17 you'll see the little alpha symbol after the
18 results. So these were in a glove box, a sink,
19 and a hood, and then there's sort of unidentified
20 area. It kind of -- I'm not sure what that would

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1 be, maybe a desk or something like that, towards
2 the bottom. So this is one example.

3 Moving on. That was from 1961. This
4 one's from 1955. This one is specifically
5 looking for alpha, as you can see in the top-
6 right corner, an alpha contaminations survey.
7 And we kind of circled this area by the hood in
8 the upper-right corner. And I'm just going to
9 head right to the next slide, which kind of blows
10 up that section, because it's pretty hard to
11 read.

12 Okay. So, again, I'm looking at a
13 same hood. And you can see there was a 31 count
14 per minute alpha on a smear. Around the hood, it
15 was up to 1,500 dpm per 100 centimeters squared,
16 which the radiation control guide for alpha was
17 20 dpm per 100 centimeters squared, so that
18 result in that hood was about 75 times higher.

19 But there's also a note here that the
20 blotting paper that was used should be changed.

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1 And you'll see, when we get into some of the
2 interviews, they described how the HP staff would
3 use blotting paper pretty regularly to try to
4 hold down contamination levels.

5 DR. TAULBEE: Bob, can I comment here?

6 MR. BARTON: Sure.

7 DR. TAULBEE: Okay. The 1,500 dpm,
8 that was taken with the Samson, so that's a direct
9 reading, not a removable. The 31 dpm or cpm --
10 I think, it's cpm -- was what was removable, not
11 the 1,500.

12 MR. BARTON: Okay.

13 DR. TAULBEE: So, the Rad Control
14 Guide was for 20 for alpha for removable.

15 MR. BARTON: Okay. And then,
16 obviously, that 31 would have to be converted to
17 a certain area, and from counts to
18 disintegration. So I'm not sure what that would
19 actually come out to, but good to know that that
20 was a direct reading. In either case, 31, even

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1 if it directly goes from that counts per minute
2 to dpm per 100 centimeters, it's still above, but
3 not 75 times above. So, thank you for that
4 clarification.

5 Another example, this is within the X-
6 Cell, and they're doing alpha/beta/gamma surveys.
7 You have one unlabeled result on the floor there,
8 so we're not really sure what that is. Most of
9 the other reported results are simply alpha, but
10 there was one beta/gamma result on the, I
11 believe, that's the floor, the bottom left. I
12 assume that's in front of a process cell or
13 something like that, but, again, the only thing
14 reported here is alpha. And that was in 1961.

15 Another 1961. Again, this is -- the
16 survey type was kind of -- I don't know if it's
17 cut off on your screen. It's slightly cut off on
18 mine, because it says I'm presenting. But the
19 survey type was, again, a routine contamination
20 and radiation survey, and you have a couple of

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1 areas where we have 110 dpm alpha, 70 dpm alpha,
2 and those areas are suggested to be cleaned.

3 This one's from 1960. And, again, you
4 have 40 counts on furnace and the face of a hood,
5 and the floor was marked as okay. Again, I can't
6 quite see if this was alpha-specific. I think
7 this was another one. I don't know if everyone
8 can see what type of survey it is. Again, it's
9 cut off on my screen, unfortunately. But, again,
10 this is another instance where they came in and
11 they found some alpha. And it didn't actually
12 say "recommend cleaning," but did check out that
13 the floor was okay.

14 Head to the next one. Okay, here we
15 go. Again, this is a radiation contamination
16 survey. And there are several locations on the
17 floor where they noted alpha contamination. You
18 have contamination found on a stool, and also
19 notes here that all smears for beta/gamma were
20 less than 50 counts per minute. And then a note

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1 that all of the locations are shown for alpha.
2 And that was in 1957.

3 Another one. This is just a
4 contamination survey. And, again, here you have
5 one that was measured for both alpha and beta,
6 and the alpha counter is more larger than the
7 beta component in the hood, and then over on the
8 other side, you see that an alpha result 890. It
9 doesn't say dpm, cpm, or anything, but it does
10 say that area needs to be mopped.

11 This is in LB-32, and this is actually
12 the location where we had an example where they
13 said they found uranium contamination again.
14 This is in 1954. We even see there's several
15 values in here. Now, it doesn't say what they -
16 - I mean, there's some counts per minute results
17 circled. There's this dpm is 100 centimeters.
18 It doesn't necessarily specify there if it's a
19 Samson, so I'm not sure. It might be that there's
20 a direct reading, and so it might not be a

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1 removable, but we really don't know. But, again,
2 you have it around the hoods, you have one spot
3 right on the floor, lab benches, the sink right
4 near the cabinets. And this survey was
5 specifically for alpha contamination.

6 That brings us to Finding 3. "SC&A
7 identified several area contamination survey maps
8 from 1954, '55, '57, and '60, and '61 that
9 indicate that alpha contamination may have been
10 the primary radiological concern for certain
11 locations at the time of the survey. In many
12 cases, the survey is a general contamination
13 survey that did not detect beta/gamma activity,
14 but directed that the identified locations with
15 alpha contamination be cleaned up."

16 So, those are some examples of the
17 survey maps that we were able to find during data
18 capture.

19 The next thing we're going to look at
20 is some air sampling that we were able to find.

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1 These were all for the 216 lab, and these are --
2 let's see, these are 1954.

3 And, again, they found U-233. And
4 there they were specifically measuring for alpha.
5 And, again, there's a notation there,
6 handwritten, that says, "The contaminant is U-
7 233, and is likely in the form of U-308, uranium
8 oxide."

9 We'll look at another example. Here's
10 another one again where they found U-233
11 concentration. Again, this is -- well, I don't
12 believe it specifically says it here, but this
13 is, again, for the 216 laboratory, and, again,
14 from 1954.

15 This one here is, again, 216 area,
16 1954, and they actually measured for both long-
17 lived alpha and beta. And, in this example, they
18 did have measurable alpha contaminations in the
19 air, but the long-lived beta measurement was
20 zero.

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1 Here's another example where they did
2 both alpha and beta. And the ones I've called
3 out, again, are for 216. And so that's sample
4 six. And as you can see towards the bottom here,
5 they report the results. You have long-lived
6 beta of 8-times-7-to-the-minus 13 microcuries per
7 cc, and long-lived alpha 9.6 times 10. And the
8 number is a little hard to figure out. It's
9 either 10-to-the-minus-12 or 10-to-the-minus-13.
10 In either case, it's a little bit higher than
11 that beta measurement.

12 Looking at Finding 4. "Based on a
13 limited set of air samples in Room 216 from
14 November of 1954, it is apparent that there was
15 airborne alpha activity present. Evidence
16 suggests the airborne alpha activity was U-233 in
17 the form of U-308. In two of the three examples,
18 the airborne long-lived alpha activity bounded
19 the airborne beta activity."

20 Now we're going to talk a little bit

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1 more about the interviews. And I just want to
2 kind of say that finding interviewees is
3 obviously a little difficult just because of the
4 timeframe we're talking about at CPP, you know,
5 prior to 1963, but also the level of technical
6 information about different source terms and
7 exposure potentials that you might have.

8 It is very difficult to find people
9 with direct knowledge of that. The interviewee
10 on the screen here is obviously one of those
11 people that was very, very helpful in
12 establishing the conditions.

13 Here's one quote I pulled from the
14 interview, which I'll read out. And just for
15 those following, the quote I'm looking at is, I
16 believe, on page 36.

17 It says, "The analytical lab did U and
18 Pu separations on third cycle process samples in
19 the 1950s for process control. The lab was
20 surveyed at every shift. Plutonium-238

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1 contamination was found on a lab bench. It was
2 found, reported, and cleaned up because of the
3 shift surveys. When alpha contamination was
4 discovered in the lab, the entire crew was sent
5 for urine bioassay looking for U and Pu. Alpha
6 bioassay was done when conditions indicated.
7 Alpha contamination was not seen often. Alpha
8 bioassay would be done if alpha uptakes were
9 suspected, mostly for lab personnel. The highest
10 potential for internal alpha exposure was the
11 third cycle extraction."

12 Another quote from the same
13 interviewee. He tried to make management and
14 workers aware of Pu. He gave the interview team
15 a copy of a document titled, 'Why Concern for
16 Plutonium at an Enriched Uranium Processing
17 Plant?' "This was a presentation he gave to
18 operation staff in the cafeteria about 1959. It
19 was not well understood. Fission products were
20 the controlling dose issue. The technical staff

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1 believed the controls were adequate for alpha
2 contamination, and the survey equipment was
3 capable of detecting alpha contamination. Pu was
4 only present in small amounts, but it was
5 recognized that it doesn't take much to create a
6 problem."

7 Now, this interviewee did provide a
8 presentation, as it's shown here, "Why Concern
9 for Plutonium?" The presentation itself, we
10 believe, was probably not from 1959, based on a
11 couple of pieces of information that were
12 included in it. It was likely more from later
13 maybe the late 1970s or later on. So it's not
14 really clear to us whether he did give a
15 presentation in 1959. Unfortunately, the raw
16 interview notes we were not able to locate, so
17 all we have is the summary, and the summary has
18 this quote in it.

19 Here's another. This person was an HP
20 in the mid-1950s, then they switched to a

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1 supervisor in '60s. And I believe this quote is
2 on page 39.

3 This person was aware of one location
4 at CPP where alpha contamination was a concern.
5 Not certain of the specific location now; it may
6 have been the uranium packaging area or an
7 analytical laboratory. He only recalls alpha
8 contamination events happening about three to
9 four times during his five years. He doesn't
10 recall the details clearly.

11 This is an interview with a chemical
12 operator that began in the late '50s. This quote
13 is from page 38.

14 He wasn't very knowledgeable of HP
15 instrumentation. He recalls taking a sample of
16 the end product, which contained uranium.
17 Several people were there. Security had to open
18 the door/vault to access the sampling area. He
19 doesn't specifically recall HP monitoring, but
20 they were probably there. So, again, that's sort

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1 of the sampling of the end product.

2 This interviewee was a
3 chemist/laboratory tech in the analytical lab
4 Shift Cell and X-Cell during the 1950s. He
5 describes a lot of the HP practices and
6 activities. This quote that we're looking at is
7 on page 37.

8 "In the Shift Lab, blotter paper would
9 be placed on benches and floors. Even the
10 interior of the hoods would be papered down. All
11 of this was done to control contamination and
12 keep the work surfaces as clean as possible.
13 Health Physics did smears at the end of the shift.
14 They, being the analytical lab, always prepared
15 blotter paper for the next shift as directed by
16 the HPs. Papering was done quite frequently."

17 Just trying to move to the next one.
18 Here we go. Here's -- again, this was an HP at
19 CPP, and this describes, again, some of those
20 contamination control activities, which, you

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1 know, we talked about before by going around and
2 surveying the different laboratory areas and some
3 of those activities we talked about, but just
4 some of the general things.

5 When you entered CPP, you changed into
6 anti-Cs. On the way out, they showered, and
7 walked through a monitor. The floors were
8 cleaned every day. Air samples and smears were
9 taken. Blotter paper was used, and operations
10 workers would help police and keep the area
11 clean, and they also had to clean up when
12 contamination was found.

13 So, this brings us to Observation 1.
14 "Based on five identified interviews with former
15 CPP workers having some knowledge of radiological
16 operations, it is apparent that the HP staff were
17 aware of, and took steps to control, alpha
18 contamination in certain areas of the plant.
19 These areas include the laboratories and other
20 product areas where the interviewees indicate

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1 that an incident-based internal monitoring
2 program was employed for alpha emitters, but it
3 is unclear what levels of alpha contamination
4 would actually trigger special bioassay samples
5 versus more common decontamination activities."

6 So, the next thing we did --

7 MEMBER ROESSLER: Bob, let me ask a
8 question before you go on?

9 MR. BARTON: Sure.

10 MEMBER ROESSLER: This is Gen. On
11 page 37, you mentioned -- well, I'm wondering,
12 has the interviewee seen your report?

13 MR. BARTON: Not to my knowledge.

14 MEMBER ROESSLER: Okay. They have
15 not. And you said you didn't have the original
16 notes, only the summary, and I'm just wondering
17 if it would be appropriate since there's some
18 questions in there to let the interviewee see the
19 report and verify pretty much what you're
20 concluding there?

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1 MR. BARTON: I don't know what that
2 process would necessarily be.

3 MEMBER ROESSLER: I don't either. I
4 know that this interviewee has been called in
5 several times, and I don't know how important
6 that would be, but it just seemed like there's
7 some questions hanging there.

8 DR. TAULBEE: This is Tim. I think
9 the, the areas where you're making some
10 assumptions, Bob, based upon the summary, I think
11 we can get clarification on that from the actual
12 interviewee.

13 I don't think it would be appropriate
14 though, Gen, for the interviewee to review the
15 documents in that the interviewee is actually --
16 we got approval or a waiver to interview him,
17 because of his, because of, you know, the unique
18 experience here, but I don't think the review of
19 the document is appropriate, but I do think the
20 clarifications, some of what Bob has, you know,

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1 indicated he's not sure what this meant, we
2 certainly can go back to the interviewee and ask.

3 MEMBER ROESSLER: Probably at this
4 point in time until we have a time to study this
5 a little further, it's probably not appropriate,
6 but I was just wondering what procedure might be
7 if there were questions.

8 DR. TAULBEE: I think we could just do
9 a follow-up interview with the, with the
10 individual.

11 MEMBER ROESSLER: Okay. I think
12 you've clarified that, so thank you.

13 MR. BARTON: Okay. Very good. So,
14 those were, those were the interviews that were
15 conducted in 2016. One of them, the interviewee
16 we were just discussing, I believe, was actually
17 2014, but another thing we did, as I discussed at
18 the beginning, is we went into claim files,
19 specifically job titles, most likely to have the
20 potential to be working in these laboratory areas

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1 or otherwise job titles that may have come into
2 contact with the alpha material that may not have
3 been comingled, so these are your lab techs,
4 chemists, chemical engineers, research
5 engineers, scientists, those sorts of job
6 categories.

7 We found that 62 fit those job
8 criteria, and were obviously employed during the
9 period of interest. Of those 62, 32 had some, or
10 all of their employment, at CPP based on their
11 records. Only 1 of those 32 had any uranium
12 bioassay, and we'll show that.

13 Again, this is, this is for one of the
14 claimants, and this is from 1959. You can see,
15 these are actually two records that I kind of
16 placed together, so they're two separate records.
17 The top part, again, December 1959. It's not
18 actually labeled as routine or special, but as
19 you'll see on the next slide, it was actually a
20 routine bioassay just based on the date. And

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1 then the -- the bottom one is a special -- we'll
2 follow a sample, because the first one showed a
3 positive result.

4 A little bit about this claimant. He
5 spent the first few years as a chemical analyst,
6 and analyzed samples from the plant, and quality
7 control, they prepared standards to check the
8 accuracy of samples sent from plant. They
9 describe using radiation work permits.
10 Specifically, they say radiation work permits
11 were required when he worked with U-233, and
12 other types of special jobs, but he did not work
13 under one routinely. So, again, this person
14 submitted U-233 urine results from 1959.

15 And I'm just going to go to the next
16 page. This is actually also from the claim file.
17 And as you can see, that top result was a routine
18 as shown in their chronological record of medical
19 care, but then there's also, and they're called
20 out special samples required later in that month,

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1 and also in January follow-up samples, and then
2 there was another routine sample in February of
3 that year.

4 So, we couldn't find any specific
5 incident that this person was involved in, but it
6 seems like they were on a routine program, or
7 maybe there was a bioassay required by a work
8 permit, and then when they took that routine
9 bioassay when they realized they needed some
10 follow-ups.

11 Now, in the original DOE file, only
12 one of the follow-ups was included, so really
13 there was a routine sample, and then three
14 follow-ups, so one of the follow-ups was
15 included.

16 NIOSH was actually able to identify
17 another using a technique that I believe is
18 called, "Optical Recognition Imaging," and
19 essentially when they capture records from a site
20 and they can match names or other identifying

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1 information, a lot of times, they'll hotlink that
2 into a claim file.

3 So, DOE provided two of the records,
4 NIOSH on the third, and then there's a fourth one
5 that we couldn't find anywhere. It wasn't found
6 by the Optical Recognition, and it wasn't in the
7 DOE records, so we're really not sure what
8 happened to that one.

9 So, that kind of brings us to Finding
10 5. "SC&A identified a single example in which
11 internal monitoring for uranium, specifically, U-
12 233, occurred out of the 32 reviewed claims who
13 held job titles with the potential for laboratory
14 work at CPP. Two samples were provided in the
15 claim monitoring record; however, a log of all
16 medical treatment indicates that two additional
17 follow-up samples occurred, which are missing
18 from the dosimetry records supplied by DOE. One
19 of those two follow-up samples was located via
20 the NIOSH process known as 'Optical Recognition

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1 Imaging.' The disposition and availability of
2 the other samples is unknown."

3 So, that was 1 of the 32 claims, so
4 the other 31 claims did have accepted beta/gamma
5 internal monitoring, and also sometimes iodine
6 was included in that specifically, but, again, no
7 alpha monitoring.

8 So, that brings us to Observation 2.
9 "Thirty-one to thirty-two claimants who worked at
10 CPP prior to 1963 and had job types most likely
11 to be associated with laboratory work did not
12 have any internal monitoring results to uranium
13 or other transuranic material, either special or
14 routine. It cannot be inferred from the
15 available claimant files whether these workers
16 should have been monitored and were not, were
17 monitored and the records are unavailable, or did
18 not experience any exposure potential to uranium
19 warranting routine monitoring."

20 Now, during -- when we're going

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1 through these 32 claim files, we noted that on
2 the dosimetry, the internal dosimetry records,
3 obviously, there will be results for other people
4 that are not the claimant. And we noticed a lot
5 of them actually had routine uranium, and so we
6 took note of those when we saw them.

7 You know, I'm going to put a table up
8 here. So, you're looking directly at the report.
9 It's Table 3, and it should be on page 43. It's
10 on the left side. Obviously, there's not going
11 to be any names.

12 But, as you can see, these are the
13 samples that we were able to associate with these
14 people. Just based on looking at other
15 claimant's records, not the specific dosimetry
16 files for these workers.

17 And, as you can see on some of them
18 are spaced -- and, again, all the ones in that
19 far right column, if they don't have the
20 asterisk, they're all labeled as routine samples.

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1 The ones with the asterisks, and there's only a
2 few of them, were actually special samples taken.

3 For a lot of the workers, they're
4 fairly evenly spaced for this period. And,
5 again, these aren't complete internal dosimetry
6 files for these workers. These are just we
7 noticed their name as a routine uranium sample,
8 and so we took note wherever that happened during
9 the course of the claimant review.

10 So, some of them appear to be on maybe
11 a quarterly schedule. Reference numbers 2, 8, 9,
12 11 through 13. Some looked more like six months.
13 The fact that these are really routine sort of
14 indicates that there was a group of workers who
15 Health Physics believed could have the potential
16 for more of a chronic exposure, and so should be
17 monitored on a routine, and not a special or
18 incident basis.

19 So, that brings us to Observation 3.
20 "During its review of claimants, who may have

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1 worked in the laboratory areas of CPP, SC&A
2 identified several non-claimants who appear to
3 have been part of a regular routine monitoring
4 program for uranium. This is logically
5 indicative that a group of workers existed at CPP
6 who had the potential for chronic rather than
7 episodic exposure to uranium that was of
8 radiological concern to the health and safety
9 staff."

10 Okay. Moving on. The last thing
11 we're going to talk about is a couple of
12 incidents, because we wanted to go through the
13 SRDB and see what was documented there. We really
14 only found two of them.

15 The first one was airborne U-235 in
16 the Z-cell in January of 1958. The Z-cell itself,
17 the way it's described in the TBD, it says, "The
18 Z-cell was the last stop for CPP-601's final
19 product concentrated liquefied uranyl nitrate.
20 For a time, the liquid was stored and packaged

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1 for shipment in L-10 bottles at the facility set
2 up within the Z-cell. So, during this incident,
3 an alpha proportional counter measured an air
4 concentration that was 10,000 times the maximum
5 permissible concentration. Smears showed
6 positive alpha on the floor near the sump, the
7 stairs leading to the bottom of the cell, and the
8 product room near the exit of the cell. Bioassay
9 samples were taken for five of the workers
10 involved and were positive, but follow-ups were
11 below the detection limit, which was one times
12 ten to the minus five grams per liter."

13 And what you're seeing now are actual
14 quotes from the incident report.

15 "The consequences of this particular
16 incident are not especially alarming except that
17 the situation could well have been more serious.
18 Perhaps operational procedures with respect to
19 this area of work should be reviewed to avoid
20 future like incidents, since hazards from

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1 ingested and/or inhaled uranium are present."

2 And, then a follow-up report to that
3 incident, follow-up to the incident report noted
4 the following changes were made.

5 "A rotameter was, should be installed,
6 air spargers -- measure the amount of air to the
7 spargers from front excessive sparging, the flow
8 of air was increased, and the procedure for any
9 further mixing experiments was changed to pull
10 only one sample at a time when those are in
11 operation."

12 So, there was some recommendations
13 made, and as a result, they did make some changes.

14 The only other incident we found was
15 a product solution spill that was actually in the
16 access corridor in December 1958. And what they
17 were doing is there was a maintenance activity,
18 there was a blocked plug in one of the lines.
19 The product line from X-Cell and Z-cell, they had
20 to remove about 100 feet of the line, but they

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1 didn't realize that there was an auxiliary pump
2 that had been left on, which was still tied in
3 when they went to go cut and to replace that
4 section.

5 Here's a couple of quotes from that
6 report.

7 Hold on a second. I lost a slide.

8 Alright. I'm sorry. I was supposed
9 to read Observation 4 before talking about that
10 other incident, so just to wrap up that other
11 incident.

12 "A documented 1958 incident involving
13 airborne U-235 alpha activity in the Z-cell
14 indicates that HP was notified immediately and
15 appropriate actions were taken, including air
16 sampling, area swipe contamination surveys, and
17 worker nasal wipes. Multiple bioassay samples
18 were collected in the days immediately following
19 the incident. Analysis of the available bioassay
20 related to the incident indicates that exposures

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1 were likely minimal. This incident was also
2 discussed in NIOSH 2015b," which I believe is one
3 of the SEC ERs.

4 And, so, again, back to the, the spill
5 from cutting the line. These are quotes from the
6 incident report.

7 "Most of the solutions caught in a
8 plastic bag with some spilled on the floor and
9 some splashed on a maintenance fitter, who cut
10 into the pipe. That person's coveralls were
11 gathered up in a plastic bag and spilled liquid
12 was cleaned up, and all were taken to the product
13 room for a full recovery," so were able to reuse
14 it.

15 And these were the recommendations
16 based on that incident. "Don't start a critical
17 job without having the written work request in
18 the hands of the maintenance foreman; all work
19 requests contain written precautions. If to be
20 checked back by operations, approvals by safety,

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1 safeguards, etc. when special hazards exist; if
2 there are critical hazards, maintenance should be
3 advised how to do their job safely; and add
4 details of HP and safety procedures on the HP and
5 safety permits; and then adhere strictly to the
6 tag out procedure."

7 So this leads us to Observation 5.

8 Oh, I would also note that while that
9 incident report didn't specifically say that
10 internal monitoring should have occurred, we were
11 able to find monitoring for at least one of the
12 workers who was involved, but we don't know if
13 the other workers who were involved in the
14 situation were similarly monitored. We just --
15 we were able to find at least one of the names
16 that was included in the bioassay records.

17 So this takes us to Observation 5, and
18 this is the final observation.

19 "A documented incident in December
20 1958 describes a product line maintenance

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1 activity that resulted in a spill of U-235 in the
2 access corridor of CPP. The activity involved an
3 HP permit, and also had -- an HP presence in at
4 least one of the two maintenance locations," so
5 they were cutting in two ends of this pipe, and
6 the HP was at one end.

7 "Follow-up reports indicate HP and
8 safety permits required more detail to avoid
9 future incidents. Although not specified in the
10 incident report, SC&A located at least one
11 special uranium sample that was taken for a pipe
12 fitter who was involved in the spill."

13 So, after all that, our summary
14 conclusion is, "We identified several example
15 locations and time periods for which alpha
16 contamination was identified and does not appear
17 to be directly comingled with fission and
18 activation product material. Reconstruction of
19 internal exposures to alpha material by ratioing
20 to calculated intakes of fission and activation

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1 material would not be technically appropriate for
2 at least some of these workers, activities, and
3 locations within CPP."

4 So, that is the summary of our report
5 evaluating the potential for alpha exposure to
6 CPP prior to 1963. Be happy to answer any
7 questions or clarify any points or whatever I can
8 do to help move the conversation.

9 MEMBER BEACH: I think you've stunned
10 everybody, Bob.

11 CHAIR SCHOFIELD: I don't have any
12 questions, but maybe someone else might though.

13 MEMBER ROESSLER: This is Gen. I
14 don't have any questions, but I'm looking through
15 your summary statement that you showed on the
16 slides in the report. The report's a little hard
17 to read, because of all the blackouts. Is that
18 in the reports?

19 MR. BARTON: Yes, I believe that's in
20 the executive summary.

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1 MEMBER ROESSLER: Okay. It's not at
2 the end, which is where I was. Okay. I just
3 wanted to make sure it was in there.

4 MR. BARTON: Yes, it does. It appears
5 on page -- the bottom of page seven, which is the
6 executive summary.

7 MEMBER ROESSLER: Okay. I see it.
8 Okay. Good. Okay.

9 MEMBER BEACH: Bob, this is Josie. I
10 found your report to be very thorough, and I don't
11 have any questions at this time other than
12 waiting for NIOSH's response.

13 DR. TAULBEE: This is Tim at NIOSH. I
14 don't have any questions at this time either, but
15 we are developing a response to this just so the
16 Work Group is aware that we are doing that.

17 MEMBER MELIUS: Yes. Tim, this is Jim
18 Melius. Any idea on timing on that response?

19 DR. TAULBEE: Well, that's a good
20 question there, Dr. Melius.

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1 MEMBER MELIUS: It sure is.

2 DR. TAULBEE: Trying to get this into
3 the discussion of priorities again, --

4 MEMBER MELIUS: Yes.

5 DR. TAULBEE: -- and that was one of
6 the things I wanted to make sure we touched on
7 before we finished today was to talk about the
8 priorities in a sense.

9 So, do you want to jump into that now
10 as to how soon you guys want to see this or --
11 would it better for me to tell you what all is on
12 our plate that we're trying to get off, and then
13 you can kind of order, reorder them as you see,
14 you would like to see them? Would that be
15 helpful?

16 MEMBER MELIUS: Tim, for me, yes,
17 definitely, and also, hear the same from SC&A.

18 MEMBER BEACH: Well, this is Josie. I
19 was going to ask later, but it would be nice to
20 have something in writing updating priorities,

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1 because it's -- this is becoming a bit of a large,
2 large items that we're, we're prioritizing, and
3 I don't -- I just don't want anything to get lost,
4 so --

5 DR. TAULBEE: Okay.

6 MEMBER BEACH: I don't know if that's
7 NIOSH's or SC&A's. Our matrix is a little
8 unusual, so it's a little harder to kind of keep
9 track of everything.

10 DR. TAULBEE: What -- why don't we
11 take -- NIOSH, why don't we take a stab at it
12 first as to what we've all got on our plate and
13 what we are responding to, and then SC&A can add
14 to it from that standpoint, so why don't we commit
15 to get you a draft, I guess, our kind of priority
16 list following a little bit of discussion here
17 today, because I did want to update you guys a
18 little bit on the data capture that we did for
19 the burial ground.

20 Would that be acceptable then?

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1 MEMBER BEACH: Yes. Tim, this is
2 Josie. I think there was a draft or there was a
3 priority's list out there, so you might start
4 with that, or at least include some of that. That
5 was a couple of meetings back.

6 DR. TAULBEE: Okay. Alright, we will
7 certainly do so, okay.

8 Well, I guess we should make sure
9 there aren't any other questions on Bob's
10 presentation here first. Are there any other
11 questions for Bob?

12 MR. BARTON: It looks like I'm getting
13 off easy today.

14 (Laughter.)

15 **Plans for August Board Meeting and**
16 **Status/Path Forward on Ongoing Issues**
17 **Resolution for INL/ANL-W**

18 DR. TAULBEE: Okay. Well, as you know
19 from our last meeting, the 83.14 for the burial
20 ground was -- puts just under the 83.14 for the

1 CPP evaluation, which we have now delivered to
2 you all, and so we have been working on the 83.14
3 for the burial ground, and we went out and
4 conducted a data capture. Mitch and Brian went
5 out and collected data.

6 And one of the interesting things that
7 was found is that there's some air sampling data
8 out there for the burial grounds during that time
9 period when these recoveries were taking place.
10 We requested that data.

11 Now, is this is sufficient to support
12 dose reconstruction? We don't know yet, but we
13 have not received that data back from the site.
14 This data capture took place the last week of
15 June, and it was targeted for the burial grounds.

16 So, from that standpoint, the 83.14,
17 once we get that data, then we'll know better
18 whether or not we're going to be recommending an
19 83.14 or not from that based upon the, those
20 retrieval operations that took place. So, that's

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1 kind of the status of that particular effort.

2 At the same time -- well, shortly
3 after that data capture is when we received the
4 CPP, or the reports that Bob just talked about,
5 so that's on our plate to respond to.

6 The ANL-West air monitoring that was
7 brought up, I guess, a year ago in November maybe,
8 I think that was when, but we had a Work Group
9 meeting and discussed that one. You guys had
10 indicated that after the 83.14, that we would
11 then go with the ANL-West air monitoring, and
12 then responding to the burial ground report by
13 SC&A. That was the current path.

14 I wanted to know where the CPP
15 evaluation that we just received last month falls
16 into your priorities. Do you want us to do that
17 before the ANL-West and the burial ground
18 response, or where do you want this?

19 MEMBER BEACH: Well, my guess I wonder
20 where we at for the, the CPP SEC from '63 to '70.

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1 It's still to be determined. Can anybody kind of
2 give us an update on that?

3 DR. TAULBEE: I think that's the next
4 agenda item with the V&V.

5 MEMBER BEACH: Is it?

6 DR. TAULBEE: I believe so.

7 MEMBER ROESSLER: It's not stated on
8 the agenda.

9 DR. TAULBEE: Oh, I'm sorry. It's not
10 on there.

11 MEMBER BEACH: No, it's actually not,
12 so --

13 DR. TAULBEE: I apologize. I thought
14 that was on a draft again that I saw. Okay.
15 Well, the one big news I can give, and then I'll
16 give it over to Bob, we did receive word last
17 week that the site has finally completed all of
18 the coding of all the temporary badges that you
19 can now begin to do that V&V, and Bob sent out a
20 memo about that.

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1 Go ahead, Bob.

2 MR. BARTON: Yes, that's right. If
3 you remember the last meeting, we had presented
4 a proposed path to try to perform the V&V
5 activities. What we had done is we'd gone through
6 a set of visitor cards, mostly from 1968, 1969,
7 and early 1970, to identify claimants who were in
8 those files.

9 Also, with a caveat that those same
10 claimants would still require dose
11 reconstructions regardless of the SEC either
12 because they didn't have an SEC cancer or, I
13 believe, medical dose reconstruction still had to
14 happen, even if you have qualified for the SEC,
15 but you have non-SEC cancers in addition, I
16 believe, a dose reconstruction still happened.

17 So, at that time, we had a little over
18 30 claimants that we identified from those
19 visitor cards, and there was about 50, or, you
20 know, a little over 50 samples that we would be

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1 able to check, and the Work Group requested that
2 we try to expand the pool of potential claimants
3 and the number of samples that could be used in
4 a sort of V&V analysis.

5 Unfortunately, we don't have the
6 visitor cards for the remaining years. As I said,
7 the visitor cards we examined were from the late
8 1960s, but we do have temporary badge reports,
9 which are a little different in that they're a
10 listing of a number of workers instead of a
11 visitor card, which obviously only has one worker
12 on it.

13 One drawback to the temporary badge
14 reports is that they do not include a security
15 number, which is really a direct link between
16 that temporary badge or non-routine badge, if you
17 like, and the worker that we would like to be
18 checking, but nonetheless, we went through those
19 temporary badge reports and attempted to match
20 those workers and those to our claimant database,

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1 and, obviously, it's mainly based on the name,
2 but also when the sample was taken and how that
3 lines up with their actual covered employment,
4 does it makes sense that that could be that
5 person, and also their employer.

6 And, let me see. Would it be helpful
7 if I put that memo up on the screen, or does
8 everybody have it from the website?

9 MEMBER BEACH: That'd be helpful.

10 MR. BARTON: Okay. Just give me one
11 moment here. It always seems to go a little slow
12 when you need it. You can keep talking while I
13 try to work to get that up there.

14 That's actually -- through our
15 expansion activities, we went from about 32
16 claimants to 137 claimants based on the
17 combination of the temporary badge reports and
18 those visitor cards, and so we have 137 that we
19 can check, and also we found additional claimants
20 that really would qualify for the SEC, so it

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1 wouldn't necessarily require dose
2 reconstruction.

3 Now, why that's important here,
4 remember we're trying to -- if we're going to use
5 the resources of the site to sort of research the
6 histories of these people, we'd prefer to keep it
7 with ones that we'd be researching anyway,
8 because dose reconstruction would be required,
9 again, with our list of any SEC determinations,
10 but there is another group, so if we include
11 those, those workers who we identified, you would
12 have a pool of 228 total workers.

13 That seems really high considering
14 that based on past experience, it does take a
15 little while for the site to respond with the
16 full dosimetry histories for these workers. An
17 estimate was given that, you know, for, for maybe
18 20 workers, you might be looking at a month, month
19 and a half. For 40 workers, maybe you're looking
20 more at like two months.

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1 So, what we did, and this in the most
2 recent memo, is we actually went through and sort
3 of picked off or parsed those claimants we're
4 able to identify sort of based on how useful we
5 felt they would be to any sort of V&V analysis,
6 and we essentially have three groups that we
7 split those 137 claimants in. And the first 2
8 groups are 30 claimants each.

9 I'm still, still trying to get that
10 table in front of you guys. I'm having a little
11 difficulty today, but in the first group, which
12 I would say are the higher priority ones, because
13 I believe we're going to get the most out of
14 having those claimants researched, and then
15 checked again, the responses we get from INL.

16 In those 30 claimants, you have 34
17 total visitor badges, and those include the
18 actual number, so it's a direct link between the
19 visitor badge and the claimant. Six hundred and
20 eighty-eight temporary badges among those thirty

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1 claimants, so we found some people that they
2 really had temporary badges.

3 Like, I think, the highest one, we had
4 a worker who had 135 total temporary badges
5 issued to them at CPP during this period. So, in
6 that first group, you have essentially 30
7 claimants with a total of 722 non-routine badges
8 that we can check.

9 The second group, those numbers go
10 down among the second group. We only have one
11 visitor badge among them that has the S number,
12 about half the number of temporary badges of the
13 first group, so about 350 temporary badges.

14 For group 2, we have about 354 total
15 badge, total non-routine badges to be able to
16 check, and then there's the remainder group,
17 which was -- it's the remainder, so that's 77
18 that were left that would require dose
19 reconstruction.

20 Two there -- you'd have two visitor

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1 badges that we can check, about 184 temporary
2 badges, so that's a total of 186 badges among 77
3 claimants. And, again, you have to think about
4 it that it's generally lower the number kind of
5 claimants we're going to get it from the site, I
6 don't believe it's actually the number of badges
7 that would really slow them down, but maybe
8 that's, that can do it too.

9 But not only the number of badges, one
10 thing we kind of looked at when we were analyzing
11 these groups was, did we see, observe name
12 variations, because that would be a very
13 important thing when you're trying to code from
14 these temporary badge reports and visitor cards
15 is if you see slight changes in the spelling,
16 would be important to see how those are dealt
17 with in the new database.

18 The other thing that we wanted to try
19 to get is a little bit of diversity among the
20 employees. We wanted to see some subcontract

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1 employers, employees, as well as the prime
2 contract.

3 So, the group one, which is a group,
4 again, we feel is going to be most beneficial to
5 look at first, about three-quarters of them were
6 employed by the prime contractor, and about a
7 quarter by subcontractors, and half of them, we
8 actually saw some variations in the name, so that
9 would be something that I think would offer a lot
10 of, at least, qualitative information to the Work
11 Group.

12 And when you see a name variation, and
13 they worked for the same contractor in the same
14 covered period, to see how that was dealt with
15 during the coding process.

16 So, what we recommended was that to
17 sort of do this in a graded fashion where we'd
18 request from the site the records for the group
19 one claims, and then we'd get those back and those
20 could be processed on our side very quickly just

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1 to verify whether or not those badges we noticed
2 are in fact now included in the claimant
3 dosimetry files, so once we get those records
4 back from the site, it will be a very quick
5 turnaround to be able to report back to the Work
6 Group, and then we can either send out group two
7 if we feel more analysis should be done, or we
8 could send out group two as soon as group one is
9 done. I guess that's really at the behest of the
10 Work Group.

11 So, that's where we're at with that.
12 We expanded. We have the names and Social
13 Security numbers ready to go.

14 As Tim said, just the coding effort
15 was really just completed last week, so, I guess,
16 our recommendation now would be that we send off
17 the group one claims, and see what we get back,
18 and then at that time, we can either ask for the
19 group two, or if the Work Group elects, we can
20 send off group one, and then have group two sent

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1 off immediately after group one comes back before
2 we're actually able to make any determinations on
3 it. If we're only given the 30 claims, it seems
4 insufficient.

5 MEMBER MELIUS: This is Jim Melius.
6 Yes, I'd go with option two that you do group
7 one, and as soon as you get those back, you send
8 out group two, because otherwise, we're just
9 going to lose time. By the time we set up the
10 Work Group, call, and you do the analysis, we do
11 Work Group call, and so forth --

12 MEMBER ROESSLER: I agree with Jim in
13 that.

14 MR. BARTON: Okay. I have a note,
15 again, that these are claimants for whom the site
16 will be, or should be researching these dosimetry
17 files anyway, so you're right. As far as the
18 question of timing, they'd be doing the work
19 anyway, so it might be smarter to do them
20 sequentially like that.

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1 DR. TAULBEE: When you send that
2 request to the site, could you cc me on that,
3 please?

4 MR. BARTON: Well, actually, that was
5 going to be a question, because I'm not sure of
6 the steps on how we go about making those
7 requests. I don't know if that's something that
8 should probably go through NIOSH's channel, given
9 that we end up on NOCTS, the result would likely
10 end up on NOCTS anyway, so I guess -- I don't
11 know what the proper procedure would be to, to
12 make that request, so I was hoping for a little
13 guidance on that.

14 DR. TAULBEE: Okay. Let me get back
15 to you on that, because I think you all are
16 correct. It would probably be the most efficient
17 for us to get our regular claims processing group
18 to get them, and then we can put them and identify
19 them to you when we receive the responses, but
20 I'll get back to you, hopefully, later today on

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1 that.

2 MR. BARTON: Okay, great.

3 MR. KATZ: Yes, Tim, this is Ted. I
4 think that's a good idea also, because you have
5 sort of a well-established quality process for
6 getting this kind of data from the sites.

7 DR. TAULBEE: Yes.

8 MR. KATZ: Thanks.

9 MEMBER BEACH: Tim, when do you think
10 we could expect a draft of the priorities of most
11 of which we discussed?

12 DR. TAULBEE: I'm hoping later this
13 week, if not sooner. I don't know what the rest
14 of my team's schedule is for this week.

15 MEMBER BEACH: And then I have a
16 tasking question if that's appropriate, Phil, now
17 or there's more to go through?

18 MEMBER MELIUS: We still have one --
19 Tim had a prioritization question.

20 MEMBER BEACH: Okay.

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1 MEMBER MELIUS: It's whether he --
2 whether they respond to the SC&A report or
3 whether they follow-up on the ANL-West issue.

4 Was that correct? Tim, was that your
5 question?

6 DR. TAULBEE: Yes, it is.

7 MEMBER MELIUS: Yes, okay.

8 DR. TAULBEE: I mean, because right
9 now, we're in kind of a -- well, I wouldn't say
10 a low, but we're working -- we're waiting on the
11 data for the 83.14 from the burial ground, so
12 until we get that data, we can't be working on
13 either INL or ANL-West or the CPP one or the
14 burial ground's follow-up, the SC&A's burial
15 ground report, so I guess it's between those
16 three, but I would think the top, the first two
17 I mentioned, the CPP and ANL-West, are you all's
18 top priorities.

19 MR. STIVER: Yes, Tim, this is Stiver.
20 That's what I recall from the last fall when you

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1 set up a list of priorities under the report on
2 the air sampling at ANL-West, and then following
3 up after that with a response to the burial ground
4 paper.

5 DR. TAULBEE: Okay. So, I guess, then
6 the question for the Work Group is CPP or the
7 ANL-West air monitoring.

8 MEMBER MELIUS: And what if we throw
9 it back to you? What's your preference?

10 DR. TAULBEE: I guess, my preference
11 would be the CPP only because I'd like to try and
12 get this one wrapped up.

13 (Laughter.)

14 MEMBER MELIUS: Yes, I would agree, I
15 think.

16 MEMBER ROESSLER: Yes, I agree too,
17 although, I'm not strong on that.

18 DR. TAULBEE: Okay. Alright, then we
19 will go ahead and move that one to the -- move it
20 up into the current slot, and readjust. And,

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1 again, I hope to send out kind of this priority
2 memo to the Work Group by the end of the week.

3 MEMBER MELIUS: Okay.

4 CHAIR SCHOFIELD: Will this report be
5 ready in time for the meeting in Santa Fe?

6 DR. TAULBEE: Phil, this is just a
7 memo of the priorities. That's all.

8 CHAIR SCHOFIELD: It's just going to
9 be strictly a memo to the Work Group then?

10 DR. TAULBEE: Yes.

11 CHAIR SCHOFIELD: Okay.

12 MEMBER BEACH: So, no, it won't be
13 ready, right, Phil? Okay. So, can I ask about
14 tasking the 83.14 that we just reviewed, Tim?
15 Can that be tasked to SC&A to review it?

16 MR. KATZ: This is Ted. Yes.

17 MEMBER BEACH: Okay.

18 CHAIR SCHOFIELD: Seems a logical
19 step.

20 MR. KATZ: If the Work Group wants

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1 that done, that's fine.

2 MEMBER MELIUS: Yes, but the only
3 question I have on that is that in cities, they
4 were going to do more work on that. This whole
5 question of, you know, who's being monitored in
6 post-'81 and so forth.

7 DR. TAULBEE: Actually, we weren't
8 going to unless given a specific question about
9 that. I mean, is that --

10 MEMBER MELIUS: You sound like --
11 okay. You sound as if you were planning on it
12 that's why --

13 DR. TAULBEE: No, no, no, no.

14 MEMBER MELIUS: Okay.

15 DR. NETON: This is Jim. This is an
16 83.14, you know, we identified the infeasibility
17 through a certain date, and we need to just go
18 ahead with that, and then we can proceed later to
19 identify any additional infeasibilities.

20 MEMBER MELIUS: Yes, but we've got the

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1 Class Definition issue, right?

2 DR. NETON: Yes, that's true.

3 MEMBER MELIUS: That's what make this
4 one different, and I don't think that's going to
5 get resolved for a couple of months.

6 DR. NETON: Good point.

7 MEMBER MELIUS: Yes. So, yes, I
8 guess, it makes sense then for -- I mean, I think,
9 there are issues that, that have been raised or
10 questions anyway, so to have SC&A go through that
11 would make sense, but not in relationship to the
12 card timeframe of the report. I don't know.
13 Maybe it doesn't make sense until we get a better
14 handle on --

15 MR. KATZ: Yes, Jim, I'm -- yes, Jim,
16 I'm unclear what the, I guess, focus about SC&A's
17 review would be at this point.

18 DR. NETON: I think the only issue is
19 probably the cutoff date, right?

20 MEMBER BEACH: Yes, I think, that's -

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1 -

2 DR. NETON: Yes, that's been --

3 MR. STIVER: That would be the first
4 thing we'd look at would be the cutoff date, yes.

5 DR. TAULBEE: Well, this is Tim.
6 Under the 83.14, we tend to, you know, we've
7 identified an unfeasibility. If there's an
8 additional unfeasibility after the cutoff, that
9 cutoff date is not good in a sense, then we would
10 do another 83.14.

11 MR. STIVER: Right.

12 DR. TAULBEE: So, on this one, you
13 know, we're stating that there's an unfeasibility
14 here, and there's things that we can't do, so,
15 you know, we can expand the Class at a later time.

16 MR. STIVER: Right.

17 MR. KATZ: Tim, this doesn't -- if
18 SC&A reviews this, this doesn't delay the process
19 on this current 83.14 Class as defined, so it
20 wouldn't delay you, Tim, in any way. It's just

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1 -- I think, the only thing hanging out there for
2 this 83.14 is the same thing that is on the
3 original CPP, which is the Class Definition
4 thing, and so there's not more for them to do on
5 that I don't think, but that's why I was saying,
6 I'm not sure what the focus is, but if they're
7 looking at whether that end date is appropriate,
8 it doesn't mean that that holds anything left in
9 terms of the Board acting on this 83.14 when it's
10 ready to with respect to the other issue in the
11 Class Definition whether these people can be
12 identified.

13 MEMBER MELIUS: Yes, but it, I mean,
14 it does raise some -- one is, what else is SC&A
15 working on, so how much of a priority do they
16 give to this?

17 MR. KATZ: Right.

18 MEMBER MELIUS: Secondly, I don't
19 think we have an active petition that covers this
20 time period, right?

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1 DR. TAULBEE: Yes, we do.

2 MEMBER MELIUS: We do? Does it cover
3 -- goes beyond this time period then?

4 MR. TAULBEE: Oh, does not go beyond
5 this time period. No, not beyond this period.

6 MEMBER MELIUS: Yes, and so it gets a
7 little -- I mean -- I'm just not sure how much of
8 a priority -- I guess, personally, I'd rather get
9 a better handle on what priorities are for both
10 NIOSH, and then SC&A at this point and how we get
11 everything coordinated before we go ahead and do
12 additional tasking.

13 MEMBER BEACH: So, how about tasking
14 SC&A to update and review the matrix for, for
15 INL, kind of get a handle on all these different
16 areas?

17 MEMBER MELIUS: I thought we were
18 already doing that. I think we're getting what
19 work NIOSH had underway, and then at the same
20 time, we'd see what work SC&A had underway and -

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1 -

2 MEMBER BEACH: Yes. Yes, I guess
3 you're right.

4 MEMBER MELIUS: -- get it coordinated.

5 MR. KATZ: So, I guess, what I'm
6 hearing is just maybe hold your horses, let's get
7 this CPP Class Definition thing sorted out, the
8 V&V did or whatever Bob's next step is first.
9 Certainly that's super important since CPP is
10 sitting there until that gets done.

11 MEMBER MELIUS: Yes. We're going to
12 have a Work Group meeting, you know, at least at
13 the time within a couple of months, and maybe
14 we'd want to do one sooner, or, you know, a quick
15 call, because of the -- when we get the
16 information on what's active and so forth.

17 MEMBER BEACH: That makes sense.

18 MR. KATZ: Okay then. Is that a wrap?

19 CHAIR SCHOFIELD: I think that's a
20 wrap.

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1 (Laughter.)

2 DR. OSTROW: Hi. This is Steve
3 Ostrow. We're talking about schedules. One item
4 is these reactor studies that related to OTIB-
5 54. You know, we had put out a report in, last
6 December where we consolidated comments that we
7 had on reactors, reactor characterization from
8 INL and ANL-West, and also we captured some
9 comments and findings that we had from two older
10 reports we did about, I think, in 2015 on TAN and
11 TRA areas.

12 And when we had the Work Group meeting
13 last April, at that time, we were talking about
14 the schedule for that. Tim had mentioned that
15 they had, NIOSH had a new person available to do
16 analysis work parallel to the other efforts, but
17 when I asked subsequently about a, I think, on
18 July 18th, Tim and I emailed each other, and he
19 indicated that because of staffing issues that
20 NIOSH wouldn't get around to this until, I think,

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1 March of 2018, so I just wondering from NIOSH, is
2 this still the schedule that you anticipate to
3 respond to our reactor study comments?

4 DR. TAULBEE: Yes, it is. It's just
5 one of those that's on the, kind of a lower
6 priority here. I will say that there was some
7 work that has, has begun on that. The additional
8 resource though that we have is quite limited,
9 but they did participate in the data capture in
10 June, and did gather some information for one of
11 the priority reactors.

12 DR. OSTROW: Okay, good.

13 DR. TAULBEE: But, again, we haven't
14 received that yet. We are still projecting that
15 it'd be next spring.

16 DR. OSTROW: Okay. That could just be
17 included on the work, I guess, you know, of your
18 priority list that you're going to do.

19 DR. TAULBEE: Yes. Actually, I was
20 planning to send it to John Stiver, because I'm

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1 not sure who all on your all side for
2 distribution, so --

3 DR. OSTROW: I'm sure John can, you
4 know, --

5 DR. TAULBEE: -- distributed out.

6 DR. OSTROW: Okay. Thank you.

7 MR. STIVER: Thanks, Steve.

8 MR. KATZ: Okay. Then, if there are
9 no other questions or issues, Phil, can we
10 adjourn?

11 CHAIR SCHOFIELD: I don't have any
12 unless anybody does, I mean, otherwise I think
13 we've kind of covered it. We should be getting
14 the documents to kind of give us path forward
15 where we are right now by going in order of
16 priorities.

17 MR. KATZ: Okay, then --

18 CHAIR SCHOFIELD: Lest I be confused.

19 (Laughter.)

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1 **Adjourn**

2 MR. KATZ: No, I think you got it
3 straight. Thank you, everybody.

4 (Whereupon, the above-entitled matter
5 went off the record at 12:08 p.m.)

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