The Work Group convened via teleconference at 10:00 a.m., Eastern Time, Bradley P. Clawson, Chairman, presiding.

PRESENT:

BRADLEY P. CLAWSON, Chairman
JAMES E. LOCKEY, Member
JAMES M. MELIUS, Member
PHILLIP SCHOFIELD, Member
ALSO PRESENT:

TED KATZ, Designated Federal Official
MATT ARNO, ORAU Team
JOSH FESTER
JOE FITZGERALD, SC&A
WARREN JOHNSON
JENNY LIN, HHS
MIKE MAHATHY, ORAU Team
JIM NETON, DCAS
JOHN STIVER, SC&A
TIM Taulbee, DCAS
Contents
Welcome and Roll Call ................................................................. 4
Update on Current DCAS SEC Work and Schedule for Competition .......... 6
DCAS explanation of how safe work permits data will be analyzed, statistical metrics for the "success" of this test, and the strengths and limitations of this validation approach .............................................................. 16
Follow-up Questions with Respect to Data Adequacy of CTW Primary Contractors, CTW Subcontractors and Operations Workers ......................... 42
Follow-up questions re: neptunium, thorium and metal hydrides coworker models ........................................................................................................ 54
Follow-up discussion of DCAS/SC&A work priorities ............................... 55
Petitioner Comments ......................................................................... 67
Adjourn ............................................................................................. 76
PROCEEDINGS

10:02 a.m.

Welcome and Roll Call

MR. KATZ: Why don't we go ahead. Let's start roll call. I'll circle back and ask for Dr. Richardson again after we're done with everyone else, but let's get started here.

First of all, welcome everyone on the line. This is the Advisory Board on Radiation and Worker Health, Savannah River Site Work Group.

We have an agenda today, which is posted on the NIOSH website under Schedule of Meetings, today's date. I'm not sure there are documents associated with the agenda. And just for protocol, for folks who are particularly not Agency folks, but really anyone, keep your phones muted except for when you're addressing the group. That will help with audio. And, please, at no point hang up -- I mean, at no point put the call on hold, but hang up and dial back in if you need to go for a piece.
So, first of all, let me just say up front to cover -- so, we have Brad Clawson, he's the Chair of the Work Group. Phil Schofield, Jim Lockey, these are all Members of the Work Group. And Dr. Melius, the Chair of the Board, is also joining us for this meeting.

None of these individuals have conflicts with respect to the Savannah River Site. So, let me just say that to cover them, but everyone else Agency-related should address conflicts as we go through it.

And let's start with the NIOSH/ORAU staff.

(Roll call.)

MR. KATZ: So, Brad, it's your call, your agenda.

CHAIRMAN CLAWSON: Great. If I can figure out how to unmute it. Well, I appreciate everybody coming here. It's been quite a while since you've got here.

Everybody, I believe, has got a copy of
the agenda. And so, I guess, first of all, I'd really like to start out with an update of where we're at, where DCAS is at on the schedule for completeness and just kind of get that out of the way right off the bat.

So, Tim, I guess that's you.

Update on Current DCAS SEC Work and Schedule for Competition

DR. TAULBEE: Okay. Thank you, Brad. I'll go down kind of a rundown of all of the deliverables that Steve talked about during the Work Group meeting in September and give a status of each one, if that's okay, Brad.

CHAIRMAN CLAWSON: Yes, that's fine.

DR. TAULBEE: Okay. With regards to the coworkers model, the interim -- or the initial or interim OTIB-81, is what we call it, this is the Savannah River coworker model. It's going to be covering tritium and the exotic radionuclides, americium, curium, californium, and thorium.

That document cleared Savannah River
ADC review on September 13th. It underwent internal review here last week and it is currently back with ORAU for comment resolution. And then it will come back over to us for approval.

We're still anticipating the release in October, at this time, to the Work Group. And although I am not sure whether it goes to the SEC Work Group or the Savannah River Work Group or both -- I imagine it goes to both, but we'll cross that bridge whenever we get the document completed.

The second part, which is the Rev. 4 of the OTIB-81 for the coworker models, this would have all of the models in it. Remember, the first one, the initial one, is to give the various Work Groups a chance to look at how we're implementing the draft implementation coworker model -- or the coworker implementation guide, how we are following it and what our template is for producing these coworker models.

The Rev. 4 of this will include all of the coworker models. That is currently underway.
It is going through the various stages of data quality assurance, model fitting, et cetera, is well on its way. There's no major hiccups or concerns at this time with regards to this one, that we're aware of.

The next item is neptunium. RPRT-65 was originally intended to be released to the Work Group in August, which was last month. Unfortunately, we didn't get it out to you all until last week. This was due to some difficulties with the ADC review. It did not clear the final ADC review until September 14th. Then it was approved internally here. Jim signed the document on September 19th, which was last Monday.

We have submitted it for public release, for public reviews. It goes to DOE headquarters for the final ADC review and release to the public. That was sent on September 20th. Again, I sent this to the Work Group on September 23rd.

So, once we get that final approval back
from DOE headquarters, then we will post it onto our website. Again, I apologize for the delay here, but it was kind of outside of our hands here for over a month.

RPRT-77, the identification -- or this is the identification segment of the neptunium -- there's three reports with neptunium. The first one is a broad overview of the operations at Savannah River, the second one is going through the dosimetry and looking at which workers were monitored for neptunium exposure and comparing that to where they worked, because we don't have as much neptunium data as we have for, say, plutonium at the Savannah River Site.

I mean, the primary reason is neptunium is only worked with in certain areas. And so this document demonstrates that these workers who worked in these areas were monitored for neptunium.

This particular report just got cleared from ADC review, as well, on September 14th. We have it over here for internal review. That's
I reviewed it last week and I've got to write up my comments and get them back to ORAU. So we're in comment resolution. So we're not going to make it by the end of this week, but I do hope that we will have it out in the first half of November. So we'll be a little bit late on that one.

The PUFF construction report is currently underway as well. We've got one that is -- I've not seen a draft of this yet, which means it also hasn't gone for the initial ADC review at Savannah River, but we don't anticipate any delays with this one at this time.

The thorium exposures, this would be RPRT-70 post-1972. This report is also in development. It's currently scheduled for January. We don't have -- they're not anticipating any delays. We are getting a little bit of delay -- I guess I shouldn't -- we're getting a little bit of a delay from the ADC side of things.
We've selected a bunch of documents back in June. To date, we've only received about half of them. So, we are working with the site. The main difficulty, I think we've cleared that hurdle down at Savannah River, the lead, the manager for the review group down there is taking more of an active role and managing the workflow to make sure that we're getting documents out on a more timely basis. And that seems to be working, at least since the 1st of September, we seem to be getting a better response. Let me put it that way.

The thoron exposures, that work is also underway. Again, both of these are scheduled to be delivered in January. We do have all of the data for the thoron exposures.

The thorium exposures, the previous one, RPRT-70, that one we are, like I said, missing about half of the data, but it's only from the 1980s.

The report development for the '70s, part of the '80s and -- '70s and '90s is being
written and analyzed completely now. The '80s is the part that we're still waiting on a little bit of data for.

The final component to talk about is the metal hydrides. Unfortunately, we got -- or not the final one; second to last. The metal hydrides reports, we did get notification last week that there's an issue with the ADC review. And so that one is going to have to be modified and then undergo ADC review again. So, we are currently working through that one.

Due to the transmittal of this document and we can't use FedEx between Savannah River and where our folks work on it there in Oak Ridge in a limited area, it can only be sent a certain way, it does add a few weeks to this particular report. I don't know for sure yet if it's going to impact the October date or not.

With the neptunium report I talked about earlier, we actually were able to turn it around within a day and send it back to Savannah
River. So, I'm hoping that we're only going to be delayed on this by about two weeks, but I really don't know for sure. It depends upon the extent of the redaction that has to occur.

The final item that I'll give an update on is the job plan evaluation. And this is something that we are currently working on. We have gone through all of the job plans from 1981 to 1986 and there's 3,023 job plans. Of those, 1,193 are construction trades worker job plans. So, about 40 percent of the job plans are construction trades workers.

About 60 percent, though, are operations folks, where they're going into the caves or into other areas and doing some of their non-routine type of work. So, we've got a mixed bag in there.

Of the almost 1200 job plans, we've identified close to a thousand construction trades workers between Rolls 2, 4, 5 and 6. Nine-hundred and eighty-two, actually, individual workers.
And within just the Rolls 4, 5 and 6, which is where the subcontractors would appear, there's 624. So, out of the construction trades workers jobs, it appears about 63 percent of them are non-routine DuPont construction trades.

So, these would be your B.F. Shaw, your Miller Dunn, and other such subcontractors. So, in total, we have 624 individual workers identified from that particular group.

Our current plan with this one, initially we were going to do a sampling. And that's what I talked about in front of the Advisory Board last October, because we weren't sure how many of these we were going to get. Because we only have 624, we plan on evaluating all 624. We're not going to go through and do a sampling from that standpoint. We'll just evaluate them all to see if they have dosimetry.

And for those that were doing work that we feel would need a respirator -- or clearly, if they needed a respirator, they would need bioassay
as well. We'll do an evaluation of which ones had bioassay as well.

So, that's where we're currently at with our schedule for completion. As I mentioned, we do have a few delays here that are happening due to ADC reviews that are a bit outside our control.

So, with that, any questions?

CHAIRMAN CLAWSON: Sorry. It takes me a little while to get off mute there. So, we are pushed back a little bit on this, but we are also getting the information that we need out of SRS.

DR. TAULBEE: That is correct, yes. It's been coming through -- the most recent data has been coming through in batches. I believe we've had three batches come through, about 20 percent of our documents in each of the batches.

And we did get one last week, but I will say that most of this has really started to come in since the last of August and beginning of September, up through the middle of September. So, the response wasn't very good until we got here
into September.

CHAIRMAN CLAWSON: Okay. Any questions or anything else that anybody would like to bring up at this time?

Not hearing any, let's go to No. 2 and kind of discuss in depth how these -- I call them safe work permits, but I've been corrected on that. Explain to me how this is -- what are we doing with this and what have you found out so far, I guess.

DCAS explanation of how safe work permits data will be analyzed, statistical metrics for the "success" of this test, and the strengths and limitations of this validation approach

DR. TAULBEE: Okay. Well, what we are doing with this is we, as I, you know, first mentioned there a second ago, we're segregating these between what are operations work and then what is construction trades work, because we're primarily interested in the subcontractors: were they monitored and do we have the data?

Joe's write-up that he gave back earlier, I think, this month was very good, in fact,
focusing on everyone back into what the question
is we're trying to resolve here.

And if you don't mind, I'll just repeat
here what Joe said here in his email, was "SC&A's
concern is, and has been, whether NIOSH can
validate that subcontractor doses are, in fact,
complete at SRS and fully reflected in the SRS
electronic radiological databases to support dose
reconstruction, particularly for the more
transient and short-term, smaller
subcontractors."

So that's the purpose of what we're
doing here in looking at these job plans. And so
we went back, and this is why we identified these
job plans, is because they identify all the work
in that area that was non-routine.

And so, like I said, you've got
operations folks that are going in and cleaning up
in the caves or laboratories, or taking apart glove
boxes to get something out. There's operations
work going on, but there's also construction trades
work going on where they're modifying the glove boxes or they're modifying something or pouring concrete in an area like a high-level cave type of scenario.

And so these job plans encompass both, and 40 percent of these job plans are construction trades work.

Now, within the construction trades work, there's kind of two types of construction trades workers. There's the DuPont construction guys that are part of the maintenance, the building maintenance, services, electronics and instrumentation technicians, which are really electricians, as well as millwrights and so forth.

And so those show up on Roll 2. They show up at DuPont construction trades workers.

So, they are part of this group of 1,100 construction trades worker job plans, but they only make up independently about 40 percent of those construction trades worker job plans. The other 60 percent are what I would call non-DuPont
construction trades. These are the B.F. Shaw, the
Miller Dunn, the folks that are working for other
companies, subcontractors to DuPont.

And as I said, we've identified 365
construction trades job plans, but 624 workers
during this time period, because there's virtually
always more than one worker within those job plans.

So we're going through, we're looking
at the work that's being done, and we're looking
at what protective clothing or what the
requirements were for the work that they were going
to be doing. And many of these construction job
plans followed what we heard in the interviews,
that they were doing more hazardous work.

In that, you'll notice that they'll be
wearing two pairs of coveralls. And upon exit, you
know, there will be indication there,
instructions, to leave one pair of coveralls on at
the exit or, you know, inside the room, and then
exit with the inner set of coveralls to be checked
outside the cell, for example. This is when
they're going into the hot cells. And we see that they're wearing respirators as well.

So, when we look at these and we identify the names of these workers, we can go to dosimetry and see, one, do they have a film badge, as the job plan says they should? If they're wearing a respirator, was their follow-up bioassay? So we can go to these workers' dosimetry files and back to Savannah River and say, hey, do we have this data?

And if we don't, then clearly we've got an issue here that we're going to have to deal with, but this is the first part of this evaluation.

So, I noticed here on the agenda that you mentioned, you know, what is the metric for success?

Well, from my standpoint, if, you know, from the TLD side of wearing a film badge, they were required to wear them in there, I'm anticipating we're going to be, you know, over 95 percent, probably 99 percent or greater. That's where I
believe we're going to end up with this.

Bioassay is a little more questionable from that standpoint. The reason that it's questionable is because even today the construction trades worker, especially a subcontractor, finishes the job and is given a urinalysis kit to leave a 24-hour urine sample in, and they may or may not return that to the site.

Now, generally, people would get pretty good response of, you know, 75 percent or greater, but not always. So, following up with the bioassay, we may not have bioassay from these people. I'd consider success if we're greater than 75 percent, considering that these could have been a onetime job and, you know, you can ask somebody to leave a 24-hour urine sample and give them all the materials, but if they don't send it back, there's nothing really the site can do, or anybody can do, even today, other than restrict them on their next job coming into the site.

So I don't expect a hundred percent on
that one, but I do think that -- I do anticipate
that we will have a fairly reasonable success rate.

And if we do, of, say, 75 percent, then
I feel the coworker model would be valid because
the people who would not be leaving their sample
would probably be -- I can't see why they would be
just the high jobs. I would think that they would
be the more at random.

So, you know, a coworker model should
cover those workers' intake potential. And so,
that's what we're considering from this
standpoint.

CHAIRMAN CLAWSON: So, Tim, let me
interrupt for just one second.

DR. TAULBEE: Sure.

CHAIRMAN CLAWSON: So, with this
paperwork, your feeling is, is that there should
be a bioassay tied to each one of these permits or
--

DR. TAULBEE: No, within that year.

By the way they were doing the monitoring, it was
quarterly with the maximum frequency, unless there was an incident or something like that.

So if we don't have an indication of an incident or something along those lines for these workers, but they were wearing a respirator doing this type of work, I would expect to see, within a year of that work, a bioassay sample for that work.

Because some of them, even though they were subcontractors, they were not -- they were going from one job to the other, to the next, to the next, and we see many of the same names within this group.

So it wasn't a dedicated group completely, but they did tend to use many of the same workers. So I don't expect it to be at the end of each job plan. But if we don't have, you know, a bioassay within that year or half a year or something like that, then, yeah, I would consider that a miss.

CHAIRMAN CLAWSON: Well, the reason
why I wondered, the reason why I keep referring to these as safe work permits, is this is exactly the same stuff we had out here later on, I believe. And all this is, and I'll be quite brutally honest with you, is when we went out onto a job, we would do one of these. And as far as bioassays, the only thing would be is to ask as if we're on a bioassay program, which of course we are, and either we're given quarterly or anything else like that.

In our world, they didn't drive us to do that. It was just to make sure that we're -- kind of a check and balance. Make sure that we're not missing somebody that should be on a bioassay program.

Is this kind of what it's looking like to you? Because that's what it looks like to me and I was just wondering.

DR. Taulbee: Kind of. However, I think it's -- I mean, I don't see a check box of checking to see are you on a routine bioassay program.
CHAIRMAN CLAWSON: Routine bioassay, that's what it comes down to. So, anyway, go ahead. I'm sorry.

DR. TAULBEE: That's all right. What I see out of this, to me, is that it's job plan-specific. That's how the construction trades worker bioassay was controlled.

When we look at the procedures, they indicated that the only thing that people were routinely monitored for if they were one of these kind of routine construction trades was plutonium. The rest of them were all kind of job-specific.

And so, to me, if you're going into these caves in the 773 area and you're potentially exposed to americium, curium, californium, we should be seeing the bioassay for that particular hazard.

So it wasn't routine for that particular radionuclide amongst construction trades workers. But from our looking at the americium, curium, californium logbooks that we
have, we see a good number of construction trades
workers that were monitored.

So, the question is whether or not these
are the guys that are on these job plans in this
time period.

CHAIRMAN CLAWSON: Okay. I
understand. Anybody else have any questions for
Tim on this?

MR. FITZGERALD: Yeah. Tim, this is
Joe. I did offer up some very, very early
observations based on just scanning these job
plans. But I guess just for a little bit more
background, the genesis of the 3,000 job plans, was
that basically just sort of discovered recently and
that offered the opportunity to do this particular
sampling?

DR. TAULBEE: That's correct. When we
were going through and looking for air sample data
in the 1980s for the thorium report, we ran into
these large volumes, these large books of job
plans. And so that's how they were identified.
And when we started looking, they all seemed sequential, you know, day in, day out within the same area, 773-A, including the high-level caves, and we started seeing the construction trades in there and the maintenance guys and the electricians, as well as the operations.

And so we were like, okay, this is the set of complete that we can evaluate to see if the subcontractors that are identified in here actually had monitoring data.

So, there are other job plans out at the site. Every area had job plans, how they controlled their work. We just felt that this was a very convenient group of records that we could evaluate and make some quick determinations on.

I can't see where it would be any different from this area versus other areas in this time period. It was all controlled by DuPont and they did things pretty uniformly across the whole site.

MR. FITZGERALD: Yeah, I did comment on
that a little bit that, you know, based on a couple of the interviews that we did onsite, it was sort of acknowledged that DuPont did ride hard on the subcontractors and more or less imposed the same planning processes and monitoring that they did for their own employees pretty much up until, I think, one of the interviewees suggested the mid-'80s: '83, I think, was a date that stuck in my mind. That's kind of what gave me a little bit of pause that I think it sounds like the sampling process would try to ascertain, you know, sort of the completeness of records for this sample time period in the early '80s.

And my question is, how representative would that be for later years, when it appears DuPont did not manage the growing subcontractor population onsite quite what might have been early on?

And, you know, again, that's based on some feedback from HPs at the site, but it appears to be, you know, the situation was changing in the
'80s, as it did at most DOE sites, where outside subcontractors were brought in increasing numbers and became much more of an integrated management structure. And, of course, DuPont left by the end of the '80s.

So, I guess I would throw that caution out, that drawing conclusions based on the sample time period. I'm not quite as familiar what the job plans will look like at other locations, but, again, I think what we're trying to look at is whether this very defined sampling period and sampling location should be the basis for concluding that, you know, the records are, in fact, complete across the site. That's just the reservation I expressed earlier.

And, again, the time period is one where things were changing. I think it was pretty clear that DuPont managed its subcontractors. I say "its subcontractors;" subcontractors it brought in pretty tightly up through the early '80s. But then it, according to the interview, of course, it
appears that that started changing. That's the only thing I would offer that.

DR. TAULBEE: Within the records that we're currently seeing here, Joe, I'm not seeing a big difference here through the 1980s.

If I can just give some numbers here, from 1981 through 1986, the number of construction trades worker job plans changes, from 1981, 184, 207, 253, 184, 129. And then the number of Roll 4, 5 and 6 workers, where the subcontractors, from 1981, is 80, 78, 94, 120, 164, 88.

So, it seems to peak a little bit between '84 and '85, the use of the subcontractors, and then goes down again, but this very well could be due to the fluctuation of the type of work being done in 773-A.

So I'm not seeing a whole bunch of that, but, again, this is just a small sample, as you pointed out. So, through that early '80s, it's looking fairly stable, to me, from what we see in the job plans right now.
MR. FITZGERALD: Yeah. Again, the caution I would have, and this is, of course, something the Work Group will have to consider, is that in the '80s, particularly at Savannah River, you're talking about a period which started out pretty stable, in the early '80s, but as they start decontaminating, decommissioning some of the older facilities, and as they started having to deal with the EPA and the state on environmental restoration, there were a lot of subcontractors brought in to do cleanup.

And this is almost every site by the mid-'80s into the late '80s were being sued for environmental issues, and there was a lot of activity to catch up quickly, because you were under compliance agreements. And that's where the influx of subcontractors was substantial and it happened very quickly.

And I think the degree of DuPont's control and management of those kinds of subs changed radically, because the system changed
radically. You're talking about thousands of subcontractors brought in to do cleanup, to build ponds, restoration ponds, to clean up certain locations onsite. So, where you sample subcontractors makes a big difference.

In my opinion, you may see little change in an operational area that did not have much D&D and cleanup. If you were to switch to an area such as the tank farm or other contaminated areas that were under environmental compliance agreements, you would see perhaps hundreds, if not thousands, of subcontractors coming onsite all of a sudden.

And those are the ones I'd be more concerned about, because, again, it was rapid and it involved pretty dirty stuff. You were in the middle of a lot of contamination doing cleanup.

So, the time period does matter, the location matters. And I think the answer you would get might change a lot, because I think DuPont did exercise a lot of control early on, but I think that control changed quite a bit by the end of the '80s.
So, I would just offer that up as a broad perspective.

DR. TAULBEE: Okay. Would you consider this time period that we are looking at here to be valid going back to, say, 1972 or the early 1970s?

MR. FITZGERALD: I would be more comfortable going backwards rather than forwards, just because I think you're talking about the cusp of change by the early to mid-'80s in terms of subcontractor management by DuPont. And I would be the first to say DuPont was a very rigorous manager of safety, but I think that it did change. It did change by the end of the '80s.

So, extrapolating these results, I think, would be something I'd be careful asking.

DR. TAULBEE: Extrapolating forward, not backwards?

MR. FITZGERALD: Yeah. That would be the biggest concern I would have. Again, though, I think you've got to be careful with location,
because, you know, I think the radiological experience and the use of subs would change, but the management by DuPont and the exercise by DuPont of imposing its requirements, I think, would be less of a concern going backwards and forward from that time period.

DR. TAULBEE: Okay. I mean, we can certainly look at the more modern time period into the late '80s and '90s. We haven't done that.

We want to finish this first to see what we've got from at least this time period going backwards to make sure that these subcontractors that we've identified on these job plans that are wearing respirators going into the high-level caves, that are actually monitored and that we have their data. So, this is where we're currently going.

I can understand your hesitation to extrapolate forward. Sure. Maybe it will be something more that you want us to evaluate at that time period, but for this particular group we're
looking to see if these folks that we have identified that should have been bioassay monitored were in fact monitored.

CHAIRMAN CLAWSON: Hey, Tim. This is Brad. How far are we into these at this time right now? What have we got done? Do we have anything -- I guess I'm trying to look at how are you going to validate these? What, I guess, is your criteria?

DR. TAULBEE: Well, our criteria of evaluation is pretty much what I just talked about, is we're going through the job plans themselves, we've identified the workers, we've been typing them out. And by the way, that leads me to a point that was in Joe's email as well about the legibility of these.

Based upon, you know, when you look at the legibility of these names, it does initially look like 10 to 20 percent appear to be illegible. However, through other means, such as payroll ID or comparison with other job plans, as a signature
would have a payroll ID, of the 982 Roll 2, 4, 5 and 6, all the construction trades workers total, 982, there's only been 16 that we haven't been able to resolve. So, that's 1.6 percent.

So we have been able to resolve these ones that are illegible by doing other comparisons and doing lookups in payroll IDs and so forth. We have been able to identify, you know, 98.4 percent of them to date. We feel pretty confident from that standpoint.

With regards to -- oh, shoot, Brad. I'm sorry, I just lost your question.

CHAIRMAN CLAWSON: That's all right. You've gone over it pretty good. I was wondering about the legibility myself.

The thing that I'm looking at is, and I think you brought this up earlier, so if you see these names on there and different areas and so forth like that, if they are being sampled for what they're supposed to -- I guess I'm kind of nervous about some of, you know, the americium and
neptunium, all these other ones, that if they show, then you feel like you've got a pretty good handle on it, is that correct?

DR. TAULBEE: That's correct. If we go through here, you know, we've gone through the job plans and we see this guy should have been wearing a TLD and he's wearing a respirator, then he should have bioassay. So that's where we're currently at, is identifying those two things.

The TLD part is easy for us. That is well underway from these job plans. By the way, we've been typing in these names. We've got these names in a database now. This is getting back to your earlier question, I just remembered, of where are we.

We've got these names into the database. We're comparing them against the TLD records to make sure that they show up during that time period. And then the next step is to check those bits clearly that should have been monitored, bioassayed – in other words, they wore a respirator
into this area -- if it was an airborne area, do they have bioassay? Yes or no?

And so that's where we're at with the analysis at this time.

MR. FITZGERALD: Tim, Joe again.

You know, the original question that -- this goes back to the beginning where it was mentioned that these subcontractor individuals, these names were maintained in company files versus in the regular roster, you know, the DuPont roster.

Have you, in your going through all this, established any of that? Or is, in fact, all the subcontractors, you're finding they all have, you know, employee, somehow employee numbers or some means of traceability? I mean, that was a big question in the beginning.

DR. TAULBEE: So far, with the names, like I said, we've been able to identify them based upon the external dosimetry.

I don't know that it's a hundred percent. I don't know what those numbers are.
But it hasn't been reviewed yet, so I don't really want to give those.

But so far, we are finding most of them -- or the vast majority of them, from my understanding, in the payroll -- or in what we call quarterly dosimetry reports, which were the roll-outs of them. The bioassay is really the big question here. That's the one that I don't know about yet from that standpoint.

There might be a few so far that we don't see on the quarterly dosimetry, but we haven't tracked those down yet to see what's going on with them.

MR. FITZGERALD: So, the dosimetry report would identify the subcontractor company that they work for?

DR. TAULBEE: No, they don't, but they do identify the roll. Roll 4 is your construction trades folks from the main subcontractors to DuPont: the B.F. Shaw, the Miller Dunn and so forth. But there's another roll of 5 and 6 that tend to
be more of the mom-and-pop-type of shop. But not always.

Sometimes there's some B.F. Shaw folks that appear in there that we know worked for B.F. Shaw, so it's really 4, 5 and 6 is where you find those very small-tier subcontractors, but we do see them on the electronic printouts with dosimetry.

Whether we do for bioassay, whether we see them, I don't know yet.

MR. FITZGERALD: Okay.

DR. TAULBEE: I mean, according to Ken Crase, when we did that interview with him, he felt that all of those files had been rolled into their, you know, individual dosimetry.

So, those left bioassays, they should have been rolled, you know, out of those company files and into the program. When we test this, we'll find out.

MR. FITZGERALD: Right.

CHAIRMAN CLAWSON: Do we have kind of a timeframe that we're looking at here?
DR. Taulbee: The timeframe was to give us some -- the current timeframe says February 2017. I'm hoping to be done before then, but I'm not sure, once we get done going through the logbooks and identifying bioassay, whether we're going to have to have a few of them that we request from the site. And that can take 30 to 60 days. So, we did build in a little bit for that type of analysis.

What we do for dose reconstruction is we request from the sites this person's dosimetry records. Well, we're not going to be requesting, you know, 624 dosimetry records from the sites. We're going to go through the records we have in-house, the logbooks for plutonium, the americium, curium, californium logbooks, neptunium logbooks, and we will look for these people in those logbooks first before we get down to the site and be requesting that.

So, you know, it's kind of -- you know, the end date is out there a bit, but that's the
reason why we put it out there.

Does that answer your question?

CHAIRMAN CLAWSON: Yeah, it does.

Looking at the agenda here, this No. 3, I believe we've kind of answered that already, unless there's more questions, Joe, or from anybody.

Follow-up Questions with Respect to Data Adequacy of CTW Primary Contractors, CTW Subcontractors and Operations Workers

What about any follow-up questions regarding data adequacy of construction trades workers?

I guess, you know, looking back at our history on this and stuff, we've had quite a problem to separate construction trades out, and I was trying to think of how many different iterations we've kind of been through on that, Tim, and I did not think that we had got an adequate fast-forward as of yet that the Board had signed off on of being able to separate them out.

So, I guess what I'm asking is, is how are we going to be able to separate construction
trades and operations people to just -- I'm trying to think back. We did the -- there used to be a number or there was a letter on the side of the badge, and we got into problems with that one.

I mean, we really don't have, in my mind, I didn't know if we had had a clear path forward, if we had been able to settle this problem of separating construction trades from the operations.

DR. TAULBEE: Right. Well, the way that we are doing it currently is by looking first at the roll number. And by roll number, this is where there's a prefix to every dosimeter badge there onsite.

Roll 1 is where the DuPont technical folks -- these would be your chemists, your radiological engineers, your regular nuclear engineers, mechanical, et cetera. These are all the technical folks. Those are all Roll 1.

Roll 2 is all of your operations folks, your operators, your chemical operators.
However, there is a group of DuPont construction kind of thrown in there with that group. And these were the building trade -- or these are the millwrights, the E&I technicians - electronics and instrumentation technicians - maintenance mechanics that did a lot of the, what I would call non-Davis-Bacon type of work.

What we have gone through is, with these particular workers, these are all Roll 2 mixed in with the operators, we've gone back to the job history cards that we collected from the site a number of years ago for an epidemiologic study, and have gone through and looked at whether this person was a maintenance mechanic or an E&I technician or not, and categorized them operations versus DuPont construction.

The Roll 4 folks, 4, 5 and 6, they have an additional prefix associated with it that tells the trade. This one is a carpenter. This guy was an electrician. This guy was a pipefitter. And from Roll 4, you can basically tell which company
they were with depending up on their trade at that time.

I believe Miller Dunn was all electricians. Somebody can correct me if I'm wrong on that. And B.F. Shaw was the pipefitters, that type of work. So, from there, we can use those codes to identify which subcontractor.

Five and 6 we cannot, because some of those 5 and 6, even with the prefix -- I believe 26 is the pipefitters -- 26-xxx, whatever the number is, their badge number, those folks could have been working for B.F. Shaw, but didn't routinely go out to Savannah River, so they're on Roll 5.

Roll 4 folks were more routine; not strictly Savannah River, but they were more often out at Savannah River. Let me put it that way. And then 6 is the same way.

Those we can't actually identify which subcontractor they worked for based upon the badge code, but we can tell that they are definitely construction trades based upon that prefix of job
code. So, that's the triage that we have in sorting this out.

The Roll 2 were actually the hardest to do. These are DuPont folks separating out which were maintenance mechanics and which were E&I technicians that were doing some of the lighter construction work.

CHAIRMAN CLAWSON: Well, you've got your work cut out for you, I'm going to be right truthful, because Savannah River is unique, in some ways, of the way that they use construction trades, unlike many of the other sites. And this is why, you know, I'm wondering what path we are going down, because I think you're going to have a hard time, because you're right, DuPont had their own construction trades that were the maintenance part of this, too. But also from the operational standpoint, the operators would start to get burned out on a higher dose so they're bringing in a lot of these construction trades to do some of the work.

So, you know, it will be interesting to
see what we finally end up with, but we want to make
sure that you realize that separating these out has
still not been validated from our standpoint.
This is your path forward that you're going down.

DR. TAULBEE: Well, the good news on
this, Brad, is that hopefully the middle of -- well,
in October, let me just say October - you're going
to be getting what we call the coworker model,
OTIB-81. And in there, it has the breakdown of how
we have identified the construction trades.

So, you'll have an opportunity to see
who we've identified as construction trades and
why. So, you will be seeing that hopefully within
the next month, and we're using the same
methodology here. So, that will be coming to the
Board for review within the next month.

CHAIRMAN CLAWSON: Okay. I
appreciate that.

Joe or John, do you have any questions
for --

MEMBER MELIUS: How about Jim first?

MEMBER MELIUS: I'm easy to ignore, right?

So, Tim, just one question and then a comment. So, are you doing a single coworker model for both production and construction, or are there dual or more than one coworker models?

DR. TAULBEE: There are two coworker models. One for operations, one for construction. And within this report you're going to see, well, for tritium, there's an operations coworker model and a construction coworker model. For the exotic radionuclides; americium, curium, californium; there's an operations coworker model and a construction coworker model.

But within that report, you'll see how we separated construction trades from the operations.

MEMBER MELIUS: Oh, okay. And then my comment is going back to, I think, some of the
questions and concerns that Joe Fitzgerald raised, which is, I don't see how, given the limited scope of your job plan evaluation, how the Work Group or the Board can evaluate how good your coworker construction model is, that you have captured an adequate proportion of that and constructed that correctly given that your sampling seems to be in terms of such a narrow timeframe and such a narrow location for those.

And I think that's a very fundamental problem. So, when we get to February or whenever you say it's done, I think there's going to be a lot more work to do.

DR. TAULBEE: I can give an attempt here to answer your question on this.

When we did this coworker model, this report that's going to be coming, OTIB-81, the americium, curium, californium is all of the americium, curium, californium data onsite. So, it's not a sampling, it's all of it.

And for the tritium, we're actually
using NOCTS, because we have so much tritium data
we won't have to go back to the site to get all the
tritium data.

And so the question that was posed here
that I read in the beginning was, are we getting
the subcontractor data?

When we look at the americium, curium,
californium coworker model where we use all of the
data from the logbooks, we have thousands of
construction trades worker samples.

The question is, are we getting these
subcontractors? That's what this job plan
evaluation is designed to look at.

From the coworker standpoint, we're
using all of the data that was available from that
standpoint. Like I said, there's thousands of
exotic radionuclides for construction trades
workers. But were those construction trades, I
mean, is there a group of construction trades
workers that are missing out of that?

That's what this job plan is going to
identify. Here are the guys going into the hot cell that should have been monitored. Were they monitored? Do we have their data? That's what we're trying to answer.

MEMBER MELIUS: Well, I guess we'll cross that bridge, but I'm very skeptical given the limited evaluation that you're doing.

DR. TAULBEE: Okay.

MEMBER MELIUS: But I don't want to prejudge until I've seen the coworker model.

DR. TAULBEE: Okay.

CHAIRMAN CLAWSON: Is there anybody else that had any questions? John or Joe or --

MR. STIVER: This is John. I don't have any additional questions. I think we've pretty well covered the waterfront here.

MR. FITZGERALD: Yeah, just as a closing remark. This is Joe, just a take-off from what Jim was saying.

Yeah, so, you know, certainly the coworker model based on the source terms that
you're dealing with, whether it's tritium or the exotics, I mean, I can understand that. And I think, you know, as far as a process, that's one issue.

I look at the subcontractor follow-up as sort of a more fundamental question. This would be sort of validation-verification, the V&V that we usually look for in all SECs as far as the database.

And for the subcontractors, this had not been done at the beginning. And I think it was prompted by that comment that Ken Crase had made that we started looking at this.

So, really, it's just down to, can we trust the completeness and accuracy of the subcontractor database and its reflection in the electronic database that you're using?

To me, it's a broader question that hasn't been answered. And I think the pause that I am expressing is whether this sampling is going to be enough to assure the Work Group of that V&V
question, the reliability of the database.

That's really everything I've come back for on that one, and I know we've tried a number of different approaches on that. And it's not an easy question, but it's a pretty important question given the way the site has used subs. So, I guess we'll also wait and see what the analysis comes up with.

CHAIRMAN CLAWSON: Well, I think we've kind of followed up on the question there in respect to data adequacy for the coworkers and primary. And I think what we're going to end up coming up to is generally we'll see when we get it and go from there.

We've got here follow-up questions on the neptunium, thorium, metal hydrides coworker models. Is there anything else -- I know that you've gone over this. I'm just wondering if there's anything else that you'd like to put out there or --

DR. TAULBEE: Not really, at this time.
And I know you guys just got the neptunium report, so I'm not expecting you guys to have any comments on it yet. But, you know, once you do, then we can have another call to discuss those.

So, I don't really have much more to offer other than we will be getting out the next report in October here to you all. And then the PuFF report should be coming in December.

CHAIRMAN CLAWSON: Okay.

DR. TAULBEE: And the metal hydrides, that one I don't have a good date for right now because we're going to have to be doing some redaction.

Follow-up questions re: neptunium, thorium and metal hydrides coworker models

CHAIRMAN CLAWSON: That's always fun.

Joe, what about you? Any follow-up questions on any these? I know you guys have already got the thorium, but anything that you wanted to bring out or --

MR. FITZGERALD: No, I think we've
certainly done a first read on it and it's, you
know, a pretty complete compendium of the
operational history and kind of where we come out
on the -- I guess there was four options for dose
reconstruction. And I think we're sort of at the
fourth option with this particular -- so, we're
looking at that. And that's pretty much it.

Follow-up discussion of DCAS/SC&A work priorities

CHAIRMAN CLAWSON: Okay. Well, with
that being said, I guess a little bit of a follow-up
discussion about the work priorities here. I
think you've kind of hit a little bit on that.
I'm just going to be brutally honest.
I'm looking at the timeframes for a lot of these
things. I know that you've thrown them out there,
but could you just kind of give us a follow-up of
kind of where we're -- what our path forward is,
what we're looking at for a time period?

DR. TAULBEE: Sure. You know, just to
kind of recap here, we are working on all of these
simultaneously, actually. We've got multiple
health physicists working on this. We are
diligently trying to meet the estimated completion
dates that Steve presented there at the Advisory
Board meeting in August.

We are anticipating that OTIB-81 will
be released in October. That would be Rev. 3.
That's the americium, curium, californium, thorium
one, as well as the tritium coworker models within
that report.

I would look for it towards the end of
October at this time just due to the delay getting
it out of ADC review, but we are working to try and
meet those dates still.

The neptunium reports, you received the
first one, RPRT-65. RPRT-77 should be coming out
the first part of next month. The PuFF report is
scheduled for December.

I mean, this is PuFF construction, by
the way. For those, just as a recap, while there
was neptunium operations going on in building
235-F, which is the plutonium fuel fabrication
facility, these would be for the Cassini and Galileo missions that were coming up, they added -- or they took a part of the building and turned it into a plutonium fuel fabrication area.

When they were doing that new construction on that side of the building, they were still doing some neptunium operations. So that's what this report is going to address, and that's scheduled for December.

Again, the thorium exposures report post-1972, this would be our RPRT-70, is currently scheduled for January. We do have a draft in the works. We have all the data for 1970 and 1990 to support that report. We have half of the data from the 1980s to support that report.

And so, as long as the site continues to deliver the data on the schedule that they have been this past month, I think we'll be in prime shape for that one.

For thoron exposures, we've got all the data in-house and are currently analyzing that to
get that report out.

And then the metal hydrides report, I just mentioned that we are having some issues. So, that may not come out until the beginning of November.

And then the job plan evaluation, we are underway. Like I said, we've got the names into a database and have already started checking against the dosimetry. And the next step is to start categorizing whether there is a need for bioassay based upon the job plan and whether there is bioassay.

Keep in mind, some of these construction job plans, they weren't required to wear a respirator. And so they weren't in any, you know, airborne type of area. So we're not necessarily expecting that they would be needing bioassay from that standpoint, but I would say at least half, if not more, of these job plans for the construction trades do indicate wearing a respirator. So, from that standpoint, we should
be seeing bioassay for these workers.

So, again, the February date, I explained that if we have to go back to the site in order to request a few workers to see their bioassay cards individually, or maybe if we have to go there to look those workers up, we're going to need a little time, which is why that date is out into February.

So, does that give you a good idea of where we're at with our work priorities?

CHAIRMAN CLAWSON: Yes.

DR. TAULBEE: Again, we're working on all of these at the same time.

CHAIRMAN CLAWSON: Right. And I appreciate that.

Any questions from any of the other Board Members or SC&A?

Not hearing any, we can discuss the priority for going forth. One question I do have is, Joe or John, for this thorium, what are we looking at a time period for you guys, that we're
going to be looking at?

MR. FITZGERALD: You're talking about neptunium?

CHAIRMAN CLAWSON: Thorium, I believe. This one that just got out -- or was it neptunium?

MR. FITZGERALD: Neptunium.

CHAIRMAN CLAWSON: Neptunium, yeah.

MR. FITZGERALD: Well, I'll defer to John. I think we had Bob Barton working on that originally. And I think we just got that to him.

MR. STIVER: We just got that literally, you know, on the 23rd. So, we --

DR. TAULBEE: Yeah, I just sent it Friday.

CHAIRMAN CLAWSON: Okay. Well, when you get a chance, just kind of let us know where you're at, I guess.

MR. STIVER: As Tim has mentioned, maybe we could have another call if we have any questions that need to be clarified after we, you know, get a more of an in-depth look at it.
So, I mean, we could kind of do that as a technical call, if it's necessary, but we're going to get started on it right away. So, you know, I don't anticipate it's going to be an extremely long period of time. I would say, I don't know, probably four to six weeks, I would say.

MR. KATZ: Yeah, John, I mean, after you've had a chance to look at it, just send us a note with --

MR. STIVER: Right. After we have a chance, we'll have a better idea of --

MR. KATZ: Yeah. Send us a note and let us know when you expect to have completed your review.

MR. STIVER: Okay. Sounds good.

MR. FITZGERALD: Tim, I have sort of a background question having scanned the neptunium report, if it's okay to raise it.

We've gone through the various options on sort of post-reconstruction strategies and, you know, we're sort of back to the original bioassay
data, albeit, you know, it was considered limited before and I think that was the reason the mass ratios and whatnot were a higher priority, if they would have worked.

Now that we're back to the actual limited bioassay data, is the confidence in extrapolating that data forward, is that more from the better understanding of the neptunium operations in place and the stability of those operations and knowledge of those operations, that you feel it's a steady state, that the limited data ought to bound any exposures going forward?

Again, that's what I inferred from the report, in the broadest way, that you have a more comprehensive knowledge. And it didn't appear there were any outliers that would have made using that limited data restrictive.

DR. TAULBEE: That's correct. However, we're not using just the urinalysis. We're actually proposing to use the whole body count within that. And so the urinalysis is
actually showing significantly lower than what
we're projecting for the coworker model and using
the whole body count information.

And the reason for including that in the
discussion is that there were some questions early
on from SC&A about the separations of the neptunium
and the timing of the whole body count and whether
these were, you know, bounding estimates of the
whole body count.

So, we've included the bioassay data
that, again, is limited, but it does encompass, you
know, a significant number of workers. And that's
what the second report is going to be showing, is
that these workers that have that neptunium
bioassay are the ones that were in 235-F that were
working with the neptunium.

And so we feel that, you know, those
whole body counts are certainly going to be
bounding. They're much higher than what the
urinalysis of the people with direct hands on these
material were receiving.
So, yeah, we have gone back to using the whole body counts from that information, with the limited urinalysis demonstrating that the whole body count is bounding.

Did that answer your question?

MR. FITZGERALD: Yeah. That's kind of what I got from the report, that it's sort of an operationally informed judgement that this would be a bounding dose.

DR. TAULBEE: Yeah. Well, not just the operationally informed. The report you're looking at right now is mostly operationally informed. That was its goal, was to use just that. But then, you know, with the model and so forth, what you'll see is we're using the operationally informed, as well as the demonstration of these are the people working with neptunium, this is their urinalysis, and all of this is below the whole body count that we see. So it's a combination of all of this. It's weight of evidence.

MR. FITZGERALD: Alright.
CHAIRMAN CLAWSON: Are there any other questions that anybody has before we allow the petitioners the opportunity to comment?

MEMBER LOCKEY: Brad. I just got one question. I can remember when we do the modeling, for those who don't have bioassay, we give them a value, you know, like maybe it's half of the high value of what it is. I would like to see the justification on that if we are going that route.

DR. TAULBEE: Okay. With the implementation of the coworker models, it tends to be based upon the type of work that that individual was doing.

For, like, example, the general guidance is somebody who's doing clerical type of work or, you know, clerk/inventory type of work or something along those lines that might occasionally go into an area, we tend to assign the geometric mean for their dosimetry -- or for their coworker model. However, people who are operations -- or not operations, but construction
trades and so forth, we tend to assign the 95th percentile.

So it really depends upon the individual claim and there's guidance that we've got out there that dose reconstructors use along those lines.

These coworker models won't be any different from that standpoint of how those coworker models are implemented.

MEMBER LOCKEY: Okay. Thanks.

CHAIRMAN CLAWSON: Anybody else?

Ted, I'll turn it over to you and you can allow the petitioners or however you want to do that.

MR. KATZ: Yeah, Brad. Absolutely. So, Josh, I think you had distributed some material, which I've distributed to these Work Group Members, but, anyway, it's your opportunity to talk to the Work Group.

MR. FESTER: Okay. And I think Warren was on another line. Are you there, Warren?
MR. JOHNSON: I am.

MR. FESTER: Okay. I think Warren had some comments that he wanted to --

Petitioner Comments

MR. JOHNSON: Yes, that's right.

First, thank you all for allowing us to comment. And I'm still trying to completely digest all that was just discussed, but I think the overriding point of it is this is highly technical information and clearly NIOSH is making every effort to accomplish its purpose here of bounding the dose with sufficient accuracy.

But having said that, what Congress created was a program for compensation for our Cold War veterans, the people that supported our Cold War effort. And the illnesses we're just talking about, our primary subject, are illnesses that are termed in terms of five- and ten-year survival rates.

We're now over 16 years past when this Act was created, and we're still hearing that more
records are coming out, the prior dose reconstructions, many of which have had to be vacated, and it sounds like the potential for some part of the end in sight will be hopefully in February where we get an evaluation of a sample of records that were just found.

Congress said for you all to be doing this to determine whether it was feasible for NIOSH to reconstruct the dose with sufficient accuracy and ensure it's claimant-favorable. All these prior dose reconstructions were not claimant-favorable because we found more records. That changed the coworker models. We've had numerous revisions and technical bulletins and so on which keep changing the analysis.

One big part of feasibility, obviously, is time. And clearly, Congress envisioned, when they're dealing with people who have five to ten-year survival rates, many of which have less than a 50-percent survival rate of ten years from diagnosis, they clearly didn't envision us to be
continuing to try and get this right almost 20 years later.

One of the primary benefits that are afforded to this isn't just compensation. It's the home health, it's full healthcare.

I've got many, many clients that tell the story of having a child or daughter having to quit her job and stay home and care for her dad who's basically wasting away. He's got -- one that comes to mind is pancreatic cancer. The individual died at 90 pounds and his daughter had to tell the story of having to change his dressings, change his diapers.

That's not the dignity that these people were supposed to have been granted. That's not what Congress intended.

And so when you consider whether it's feasible, you also have to consider time as an element of that.

I have no doubt NIOSH is trying its best and is clearly competent to do this, eventually,
but, also, the end result is only as good as the
records that are fed into it.

Josh and I have been in litigation with
a number of cases and deposed a number of
individuals out at the site, and the records
keeper, the person most knowledgeable on the
records, cannot attest that the individual records
provided to us pursuant to subpoena were complete.

And now we're talking about the
completeness of a sample on some work permits from
a sample of time. I don't know how you'll ever know
that those are complete. And when something's not
in there, I mean, it's missing or it didn't happen.
If there's not an incident report, is it missing,
or did it not happen? Well, you can't assume that
it didn't happen and still have a
claimant-favorable outcome. That's not a
claimant-favorable assumption.

So you're speculating, when there's an
absence of a record, that everything went as
planned. We've seen what happened from '54 to '72.
We also have seen the Tiger Team investigated in
1990s. And what they found was, I believe it was
well over 200 violations, many of which were things
such as radiation zone that was dependent upon
positive airflow with doors propped open to
non-radiation areas.

Well, clearly people in the
non-radiation areas wouldn't be assigned
respirators. And so according to that philosophy,
you only need to give a bioassay if you have
respiratory protection, those people would never
have a positive test, because they were never
tested.

The other big problems are things like
when did the tests occur? When did their intake
occur? You can't assume it happened the day
before. And if it's now down below the minimum
detectable limit, it depends on when the person
breathed it in or had a puncture or whatever.

All of these things are problems that,
quite frankly, I think the only cure for is to grant
the SEC. I think it's not feasible to continue --
feasibility, again, has to be viewed in terms of
what the goal was trying to accomplish. And what
Congress tried to accomplish was to grant benefits,
primarily including -- not just compensation, but
primarily the healthcare. And you can't just
continue to move this down the road. We're going
to get to February and it sounds like there's, in
all likelihood, more information to be found from
there.

I believe, at this point, you see
violations in 1990, they weren't following
procedure. In fact, one citation they got in, I
believe, '97, was for lack of follow-up on
bioassays. They had a 79 percent
non-participation rate.

I believe somebody spoke earlier about
we can trust the bioassays of the subcontractors
if we had a 75 percent rate or better. Well,
Westinghouse itself, according to that violation,
only had a 21 percent participation rate. That's
not good enough and that's not going to lead to sufficient accuracy when you try and do a reconstruction for these people.

They deserve better, their families deserve better. And I think that Congress gave you all the power to fix this, and that is granting the SEC. Thank you. And Mr. Fester may have some comments as well.

MR. FESTER: Yeah. And I guess -- again, this is Josh Fester. I guess one of my concerns is something that I think Jim brought up and Warren touched on, is, you know, how can there be an accurate coworker model based on such a narrow sampling from a narrow period of time?

And I guess my concern is, giving the benefit of the doubt to these contractors and subcontractors when we know time and time again they've had these violations, the Tiger Team report shows, you know, very basic ALARA violations, OSHA violations, you know, up to 1990.

The Tiger Team report basically says,
well, you all are doing a good job, you're getting closer to your goals of not violating OSHA and being in accordance with ALARA, basically intimating that, you know, it had gotten better by 1990 even though we see all these violations.

So, I guess my question would be, you know, between that period of 1972 to 1989, Westinghouse, it was supposedly worse during that period of time. That's an issue and that's something that we have to consider. And I don't think they can get the benefit of the doubt, especially when we see -- you know, and this is something that we didn't submit prior to, but Westinghouse itself has gotten various violations over the years, particularly, as Mr. Johnson pointed out, you know, compliance with the bioassay program.

They were cited for a violation where they had 79 percent non-compliance with bioassays as late as, I think, 2000. You know, that's an issue.
Another thing I wanted to point out, and I know that you all have to wait until NIOSH presents the evaluation on thorium, but what we presented is FOIA documents that show the presence of thorium in various areas, not just the lab. Various buildings throughout the 700, 300s area and even in 235-F. And that's throughout the '70s after 1972.

A person most knowledgeable, in the excerpts of the deposition that we submitted, he says that they didn't even have a program for monitoring thorium. They didn't have a way to test for thorium until at least 2000. So I'm just not sure how any evaluation of dose for thorium can be accurately recreated by NIOSH here.

And, again, it's not a criticism of NIOSH. I think they're very competent to produce dose reconstructions, but for things that we know were present at the present and were monitored for. So, that's just one thing that I wanted to point out and bring to the Board's attention. Thank you.
MR. KATZ: Thank you, Josh and Warren. Brad?

CHAIRMAN CLAWSON: Yeah. Is there anything that we need to -- is there anything that anybody would like to bring up before we call this the meeting to a halt?

Adjourn

If not, I guess we'll adjourn. I appreciate all of you calling, and I appreciate the update, Tim, and we'll see you shortly.

DR. TAULBEE: Okay.

MR. KATZ: Yeah. Thank you, everybody.

(Whereupon, at 11:25 o'clock a.m. the meeting in the above-entitled matter was adjourned.)