

1           overestimating technique, and so our view is  
2           that the intake that would be associated with a  
3           contamination -- decontamination event would be  
4           well-bracketed by the Savannah River high five  
5           intake. The dose reconstruction -- the numbers  
6           in the dose reconstruction are -- are, we  
7           think, appropriate -- or certainly  
8           overestimating. The wording in the dose  
9           reconstruction -- if these things are not  
10          specifically described in the dose  
11          reconstruction is the issue we talked about  
12          earlier, and I think it's an issue that you  
13          will see is getting better addressed in more  
14          recent dose reconstructions.

15       **DR. H. BEHLING:** This is Hans Behling and I  
16       agree with Stuart on the technical issues. I  
17       also agree that if there are discrepancies  
18       between the CATI report and what was done in  
19       his behalf, those differences or discrepancies  
20       should at least be addressed in the report so  
21       that the individual, when he sees it, does not  
22       feel that his comments were ignored. If, for  
23       instance, in the case of his statement that he  
24       participated in an in vitro program and the DOE  
25       records don't show it, we should at least

1 acknowledge it and say there are no records,  
2 and at that point we have to make a decision as  
3 to why we're not going to necessary (sic)  
4 address it, but also incorporate the fact that  
5 the high five hypothetical assignment will  
6 probably cover it for you so that this is an  
7 issue that should not cause anybody any serious  
8 heartburn.

9 **MR. HINNEFELD:** I think that's -- that's well  
10 taken.

11 Believe it or not, we're ready for the next  
12 case already.

13 **DR. H. BEHLING:** This was an easy one.

14 **MR. GRIFFON:** Well, we punted on the big topic.

15 **MR. HINNEFELD:** We'll get to that -- we'll get  
16 to that a little bit later. Okay.

17 **DR. H. BEHLING:** Okay, this is nine?

18 **MR. HINNEFELD:** Case #9 -- oh, you want to  
19 introduce it?

20 **PRESENTATION/DISCUSSION OF ISSUES FOR CASE #9**

21 **DR. H. BEHLING:** Yeah. Case #9 is again a  
22 Savannah River Site claim. The person there  
23 was employed for a period of almost years,  
24 through ' , so those were early years.  
25 And again, they're always important to me

because I -- I am old enough to know what health physics was about in the infancy stages, so I'm always sensitive to issues when I see a worker was involved in radiological work in the early days of health physics.

He was a \_\_\_\_\_, -- in a

and he suffered a cancer of the pancreas which, on the basis of an assigned dose of 18 rem, yields a POC value of 17.55 percent. So that's the overview of this particular claim case. Stuart?

MR. HINNEFELD: Okay. The first issue on the case is one that was -- we discussed on a different case, and is that uncertainty was not included in the measured photon dose. And I think in accordance with our discussion just a few cases ago, we -- NIOSH agreed that we would do some evaluation of the effect of the approach that was used in the dose reconstruction versus the approaches that Hans describes in some of the procedural guidance that's out there in terms of including the (unintelligible) in the measured dose and the appropriate organ correction factor.

**DR. H. BEHLING:** Just for clarification -- this

1 is Hans again -- the previous discussion on the  
2 issue of ignoring uncertainty when a DCF value  
3 of one is used, that was case #6.

4 **MR. HINNEFELD:** Okay. Issue number two is the  
5 comment that although the Energy employee  
6 started working in , his exposure record  
7 starts in Dose reconstruction assumes  
8 that there was no recorded dose in and  
9 assigned missed dose for each of the dosimeter  
10 cycles for , but we don't really know that  
11 there were zeroes in ' . And in fact, if you  
12 look at the records provided by the Department  
13 of Energy, the very -- the earliest years had a  
14 -- the doses are recorded on a card and it  
15 starts out with like 52 entry lines because  
16 they had 52 cycles, and at the bottom of the  
17 card there's a space for a value that's called  
18 total accumulated exposure -- or cumulative --  
19 total accumulative exposure. Now -- and there  
20 is also a line for this year's total -- or --  
21 so if you look at the card, those two  
22 values are the same, so that led the dose  
23 reconstructor to conclude that since his  
24 total was the same as his total accumulative  
25 total, the was the first year of any

1 recorded exposure. And so the dose  
2 reconstruction, we think, correctly used missed  
3 dose for the cycles in because there is  
4 evidence that his recorded exposures for  
5 were zeroes.

6 **MR. GRIFFON:** Here's my issue about unmonitored  
7 versus missed. We -- I -- I don't see that  
8 there's any record of any zeroes in , other  
9 than the --

10 **MR. HINNEFELD:** Okay.

11 **MR. GRIFFON:** You know, you have accumulative  
12 that says you -- ' I agree with your  
13 statement, so I agree that they had no recorded  
14 dose prior to that. But it doesn't necessarily  
15 mean there were zeroes. It means they could  
16 have just inadvertently not monitored the  
17 individual. And then do you apply half of the  
18 LOD or do you apply -- you try to find coworker  
19 data?

20 **MR. HINNEFELD:** Well --

21 **MR. GRIFFON:** Or -- or -- you know.

22 **MR. HINNEFELD:** Okay, I understand your point.

23 **MR. GRIFFON:** Yeah.

24 **MR. HINNEFELD:** I understand your point.

25 **MR. GRIFFON:** I mean it might --

1           **MR. HINNEFELD:** And I agree with --

2           **MR. GRIFFON:** It might turn out that half of  
3           the LOD is a conservative approach, but I think  
4           that (unintelligible) -- up in the '50's --

5           **MR. HINNEFELD:** Well, '53 was --

6           **MR. GRIFFON:** -- you have to be careful of  
7           that.

8           **MR. HINNEFELD:** '53 was the first year of  
9           operation --

10          **MR. GRIFFON:** First year of operation.

11          **MR. HINNEFELD:** -- for Savannah River, and it  
12          was relatively late in the year.

13          **MR. GRIFFON:** Right.

14          **MR. HINNEFELD:** So --

15          **MR. GRIFFON:** Might not --

16          **MR. HINNEFELD:** -- I guess on the face of it, I  
17          would think that it would be the relatively  
18          appropriate thing to do to provide a missed  
19          dose calculation 'cause there was none recorded  
20          and a likelihood -- since there was not much  
21          operating experience in '53, probably little  
22          likelihood for exposure, so --

23          **MR. GRIFFON:** I think that's a better  
24          explanation (unintelligible).

25          **MR. HINNEFELD:** Okay.

1           **MR. GRIFFON:** That's my point (unintelligible).

2           **MS. MUNN:** In addition to that, it is fairly  
3 common, was it not -- it certainly was in later  
4 years. Was it not common in the early years to  
5 have at least some weeks of training period  
6 before actual placement in a job activity?

7           **MR. HINNEFELD:** I suspect that's true. I don't  
8 know that I've encountered anything exactly  
9 like that, but that sounds plausible.

10          **MS. MUNN:** It sounds plausible to me.

11          **MR. HINNEFELD:** Right. Okay. It looks like a  
12 have a numbering issue.

13          **DR. H. BEHLING:** Yeah, I have 2(a) and 2(b).

14          **MR. HINNEFELD:** Okay, we'll go with -- that's  
15 good. That's good.

16               Issue 2(b) then is that the medical dose is  
17 based on the group 2 organ, but guidance  
18 indicates group 1. Now the -- the origin for  
19 this comment is that Savannah River -- I  
20 believe it's Savannah River Technical Basis  
21 Document provides groupings of organs for  
22 assigning medical dose. And so it --  
23 essentially I guess if they -- (unintelligible)  
24 way you group organs that are in the -- in the  
25 torso. In one grouping you group organs in the

1           abdomen. Second grouping (unintelligible)  
2           outside the primary beam and I believe the  
3           (unintelligible) is the third grouping or  
4           something. So this has to do with the  
5           selection of the correct column or correct  
6           grouping of organs. This particular person's  
7           cancer is of the pancreas. The pancreas does  
8           not appear on the list of organs that are  
9           grouped. And one of the -- one of the grouping  
10          categories is this organ, this organ, this  
11          organ and other organs not listed. And so  
12          based on that, the reviewer felt like that was  
13          the (unintelligible) that should have been  
14          selected -- the column that should have been  
15          selected for the dose assignment.  
16          However, for the pancreas we have a standing  
17          surrogate organ of the stomach, since it is  
18          closely located. It's just located close by  
19          for external exposures. Our routine approach  
20          for pancreatic dose is to use the dose  
21          conversion factor for the stomach, which is in  
22          fact listed in the column that the dose  
23          reconstructor selected.  
24          So from our standard practices, this would be  
25          done in accordance with what we would expect.



1           Once you -- when you choose an external organ  
2           as an appropriate -- choose an organ as an  
3           appropriate surrogate for the target organ,  
4           then that's the organ you would look for in  
5           that column -- the listing of organs.

6           **DR. H. BEHLING:** Yeah, I -- I only raised that  
7           an -- this is Hans Behling. I only raised that  
8           as an issue because it wasn't clear to me, in  
9           the absence of a definitive statement that says  
10          for the pancreas you use group 2 as the organ  
11          dose in question for X-ray. And as it turns  
12          out, it would have been a fairly substantial  
13          difference. I think for the number of years  
14          involved, the 2 would have yielded a difference  
15          of almost -- no more than a factor of two, so I  
16          felt at least it was significant enough for me  
17          to raise the question in clarifying where does  
18          the pancreas fall in terms of the grouping, 1,  
19          2 or 3, and the assumption of group 2 was not  
20          very evident to me.

21          **MR. HINNEFELD:** And I -- I guess I -- I  
22          recognize that, because based on the words on  
23          the page, it certainly isn't. And so there may  
24          be some (unintelligible) that's appropriate for  
25          the headings --

1 DR. H. BEHLING: Yeah --

2 MR. HINNEFELD: -- (unintelligible) discussion  
3 of when a surrogate is selected, look for the  
4 surrogate.

5 DR. H. BEHLING: In your comment -- this is  
6 Hans Behling. In your comment you say the  
7 newest revision of the TBD clarifies this  
8 issue.

9 MR. HINNEFELD: Okay, good. I guess we've  
10 already done that then.

11 DR. H. BEHLING: Yeah.

12 MR. HINNEFELD: Okay, issue number three then  
13 is a comment that the tritium assignment for a  
14 -- for a year is 71 millirem instead of 355  
15 required by procedure. And this -- the  
16 difference between 355 and 71 is the difference  
17 between a retention level of one microcurie per  
18 liter and a detection level of five microcuries  
19 per liter. And it -- and then that -- the  
20 assumption of excretion consistently at that  
21 level for the entire year -- essentially the  
22 dose conversion for excretion at that level.  
23 The difference here is -- again, I suspect this  
24 is relatively confusing in our procedures about  
25 how to go about dealing with an issue -- one

1 set -- one set of circumstances or another set  
2 of circumstances. One set of circumstances  
3 would be people who are not monitored but  
4 perhaps should have been during some periods of  
5 time Savannah River didn't record a number that  
6 was less than five. And so when you're in that  
7 situation, when you don't really know much of  
8 anything, pick the highest number you can and  
9 write down -- you know, and that would be the  
10 five microcuries per liter and then the  
11 corresponding dose would be 355 millirem. But  
12 in this particular case the person was  
13 monitored and the reporting of the tritium  
14 results were pretty consistent -- were  
15 consistently reported as less than one  
16 microcurie per year as opposed to less than  
17 five, and so that's why the procedure was --  
18 you know, the less than one, the one microcurie  
19 liter dose which (unintelligible) millirem, but  
20 (unintelligible) dose reconstruction.

21 **DR. H. BEHLING:** I didn't interpret it quite  
22 that favorably. I'm going to provide a list of  
23 slides that unfortunately you, Wanda and Ray,  
24 will not have access to until you get your  
25 handout. But the issue is not necessary (sic)

1           one of what is the MDL value, but what was  
2           recorded. And according to the statement,  
3           urine samples with less than five microcuries  
4           per liter were not recorded, so you really  
5           don't know whether or not the person had been  
6           monitored and the issue was one versus five.  
7           And let me give you why I believe this is a  
8           very real problem here and -- and bear with me  
9           because this is one that involves several  
10          slides.

11          Let me give you the slide number 9.2 -- okay.  
12          Okay, this comes as a quote from NIOSH dose  
13          reconstruction report in behalf of case #9.  
14          It's on page 7 of that dose reconstruction  
15          report and it states that an annual tritium  
16          dose was not reported or was reported to be  
17          less than the possible missed dose for all  
18          years that the claimant was employed. Based on  
19          information in section four of the Savannah  
20          River Site Technical Basis Document; the  
21          Technical Information Bulletin, Maximum  
22          Internal Dose Estimates at Savannah River Site;  
23          SRS claims; and the Technical Information  
24          Bulletin, Savannah River Site Tritium Dose  
25          Assignment, this results in a maximum potential

1 missed dose of 1.633 rem from tritium. That  
2 corresponds to 21 -- no, 23 years of missed  
3 tritium dose at 71 millirem per year. And what  
4 I failed to identify in my -- in my reading of  
5 this, that the dose reconstructor identified  
6 three separate documents identified as  
7 reference 5, 6 and 7. The first one is the  
8 Technical Basis Document for the Savannah River  
9 Site, and the other ones are Technical  
10 Information Bulletins -- and let me see, I  
11 think I have the -- yeah, the Technical  
12 Information Bulletin, Maximum Internal Dose  
13 Estimate for Savannah River Site Claims, and  
14 that is ORAUT-OTIB-0001 and the second one,  
15 ORAUT-OTIB-0000, Technical Information  
16 Bulletin, Savannah River Site, Tritium Dose  
17 Assignment, et cetera.  
18 So let me go into the -- show you what each of  
19 those documents really prescribes when it comes  
20 to the issue of missed tritium dose, and I'll  
21 start out with the ORAUT-TKBS-0006. In that  
22 particular case you see from the year  
23 through the year which brackets this  
24 employment period, the assigned missed dose  
25 should have been, per year, 355 millirem.

1 Okay? So that -- that's the first reference  
2 that this individual cites in support of his  
3 selection of 71 millirem per year, so that  
4 clearly is not a document he should have cited  
5 to support his -- his statement. 71 only  
6 becomes a recommended dose assignment after  
7 , starting with . Okay?

8 **MR. HINNEFELD:** Well, I will just comment that  
9 we're reading from the section that -- this is  
10 assignment of internal doses from tritium,  
11 maximizing approach for dose reconstruction.

12 **DR. H. BEHLING:** Yes.

13 **MR. HINNEFELD:** So this is a maximizing  
14 approach. And there's -- there's a next  
15 paragraph down, I don't know what it says is --  
16 a best estimate approach, so this is a -- this  
17 is a --

18 **DR. H. BEHLING:** Okay, let me --

19 **MR. HINNEFELD:** -- (unintelligible) --

20 **DR. H. BEHLING:** Let me read the best estimate  
21 approach. The dose reconstructor has the  
22 option of not assigning the above tritium doses  
23 if it can be determined that the employee was  
24 not likely to be exposed. In this case, as  
25 I've said in the first (unintelligible) said

1 she was -- there was no data, and so again the  
2 question is was he or wasn't he exposed, was he  
3 monitored or was he not. We don't know, and it  
4 goes on. Otherwise tritium doses are assigned  
5 a triangular distribution with the above  
6 numbers as the maximum. In other words, 355  
7 becomes the maximum.

8 **MR. HINNEFELD:** I remember that. I remember  
9 that (unintelligible).

10 **DR. H. BEHLING:** The minimum is seven millirem,  
11 the median is 71 and the maximum is 355. Now  
12 that's -- and then you're supposed to -- to --  
13 to obviously (unintelligible) the dose and to  
14 parameters one, two and three in the IREP code,  
15 which he didn't do. So that's the first  
16 document that he cited.

17 Let me show you what the next document cite --  
18 this is ORAUT-OTIB-0001. Okay? Here again you  
19 see in table 13 the years, and it gives you the  
20 annual dose in -- in -- in rem or I'll convert  
21 it to millirem between 1953 and 1983, 355  
22 millirem is the assigned dose. After that it's  
23 71, and after 1991 -- '92 it's 7.1. And so  
24 again, those numbers are consistent with the  
25 previous slide. Okay?

1           Let me give you the last one, which is ORAUT-  
2           OTIB-0003. This is a very complicated  
3           procedure, and what I'm showing here on this --  
4           on the projector is a description of the  
5           Savannah River Site dose assignment logic  
6           diagram which -- for between 1953 and 1983 -- a  
7           dose reconstructor is to use. And I won't go  
8           into it, but it gives you a couple of  
9           statements here that supports my early  
10          contention about the five microcuries per liter  
11          which was not reported prior to 1983 and  
12          therefore serves as an indictor of what could  
13          have been missed because the practice was not  
14          to record doses that were less than five  
15          microcuries per liter. And it goes on, and I  
16          won't elaborate, to the next slide, which gives  
17          you an algorithm. This is slide 9.6. Again,  
18          I'm sorry to say that we had to move the slide  
19          projector too far -- too close to the screen  
20          and it won't allow you -- but the first stage  
21          of this algorithm, it says result of greater  
22          than five microcuries per liter in a given year  
23          and so forth. But in the absence of knowing  
24          any of this, this -- this becomes useless.  
25          Okay?



1           So -- but if you follow this through, you will  
2           still end up with 355 millirem based on the  
3           absence of information because this then  
4           assumes (unintelligible) information. So let  
5           me go and then summarize this, and this I think  
6           will be the clincher.

7           We're at this point on case #9 and you can't  
8           see the slide, and there are four more cases  
9           for Savannah River Site. Okay? There are --  
10          we haven't addressed yet case #10, #11, #12 and  
11          #13, and I want you to look at the years of  
12          tritium exposure versus what the dose  
13          reconstructor assigned. For the case #8 which  
14          we just finished up to the 1983 he just  
15          (unintelligible) assigned, according to the  
16          table, 355. Starting with 1984 he is assigned  
17          71.

18          For case #9 for the same period of years -- I  
19          mean you look at 1953 through '71, which pretty  
20          much coincides with case #12, he started in  
21                  and worked through                  Again, this is  
22          the only kind -- this is the only case among  
23          the six Savannah River cases where a annual  
24          missed tritium dose of 71 was assigned during  
25          that time period. So either all the other five

1 cases are wrong, or -- and this one is right,  
2 or this one is wrong and the other five cases  
3 are right.

4 **MR. HINNEFELD:** Well --

5 **DR. H. BEHLING:** We have an inconsistency here.

6 **MR. HINNEFELD:** -- I'm not prepared to say  
7 anything other -- you know, counter to that.  
8 It sounds like you've made a good point, but I  
9 may learn more when I get back that I'll share  
10 with you -- with everyone, but I understand  
11 what you're saying and it sounds like a  
12 convincing point right now.

13 **DR. H. BEHLING:** Okay. Issues four and five I  
14 think we can skip. Is that correct?

15 **MR. HINNEFELD:** Four and five are the generic  
16 organically bound tritium issue and the  
17 Savannah River high five issue which we're  
18 going to talk about here in a few minutes.

19 **DR. H. BEHLING:** Okay.

20 **MS. MUNN:** Uh-huh.

21 **MR. GRIFFON:** I have -- before we move from  
22 case #9 -- Mark Griffon again -- I'm sorry,  
23 Ray. Going back to your original report --  
24 SCA's original report on page six of this case  
25 -- this goes back to my missing versus

1 unmonitored, not to harp on this issue, but it  
2 -- it says in the auditor's comment, SCA  
3 reviewed DOE's 86 pages of dosimeter records.  
4 (Unintelligible) our review of the DOE record  
5 shows that there are a substantial number of  
6 dosimetry cycles that are missing. Was that  
7 resolved? I don't see that in the final set of  
8 issues.

9 **DR. H. BEHLING:** I think --

10 **MR. HINNEFELD:** Well, there's a -- Savannah  
11 River -- there are a certain number of years  
12 where they can't necessarily provide  
13 (unintelligible) result (unintelligible). I'm  
14 not exactly sure what the origin of that  
15 comment is right now, sitting here today.

16 **DR. H. BEHLING:** We -- I think we have a series  
17 of -- of claims where the data simply won't  
18 allow you to determine whether or not they were  
19 accounted for because (unintelligible) the  
20 records were either incomplete or we only had  
21 summary records.

22 **MR. HINNEFELD:** There are some -- some of the  
23 years from Savannah River provide essentially a  
24 quarterly report. Is that right? Does that  
25 sound familiar?

1           **UNIDENTIFIED:** (Unintelligible) years are '73  
2           on.

3           **MR. HINNEFELD:** (Unintelligible) what years  
4           exactly.

5           **MR. GRIFFON:** Some of the things I'm guessing  
6           on here (unintelligible) I don't know if these  
7           two coincide, but they mention the years '64,  
8           '66 and '75 as three -- three of the years, but  
9           that may be two separate issues.  
10          (Unintelligible) page -- page six on your  
11          comment, Hans. I don't know if you recall  
12          that.

13          **DR. H. BEHLING:** Yeah, I have to actually get  
14          my -- my report out.

15          **MR. GRIFFON:** Go ahead and get it. My -- my --  
16          I guess my point is that if -- if you only have  
17          annual summary data, I think that, at the very  
18          least, should be spelled out (unintelligible)  
19          annual summary data and the person was likely  
20          monitored monthly, quarterly, whatever. It --  
21          it -- it -- to me, that says -- you know, that  
22          says that you couldn't validate that annual  
23          dose. You didn't have cards, you didn't have  
24          anything to go back to. You just had an annual  
25          number, and that may be fine, but I think in

1           some cases we would certainly want some  
2           validation (unintelligible) you know, where --  
3           where available. I guess the reason I raise  
4           this is because in some of my work in the past  
5           I've run across situations where I've only had  
6           annual summary doses and then when you dig  
7           further you actually find health and safety  
8           reports that in the early years actually  
9           mention people's names that were in incidents,  
10          and it turns out that they had doses in these  
11          monthly reports for the individuals. And I  
12          looked at those individuals' records and the  
13          annual summary didn't reflect those --

14       **MR. HINNEFELD:** (Unintelligible)

15       **MR. GRIFFON:** Right, right. So I'm always a  
16          little cautious or leery about relying on  
17          annual -- annual information, especially in the  
18          early -- you know.

19       **DR. H. BEHLING:** Mark, are you -- are you  
20          referring to page six, the audit comment  
21          regarding the -- the missing data?

22       **MR. GRIFFON:** Second paragraph on the -- under  
23          auditor's comments, second paragraph.

24       **DR. H. BEHLING:** Okay. Starting with SC&A  
25          reviewed DOE's 86 pages?

1           **MR. GRIFFON:** Uh-huh.

2           **DR. H. BEHLING:** Yeah. What in fact they did  
3 do -- and again, this may be easily defended in  
4 terms of process efficiency for a claim that is  
5 not likely to be compensable is to assign more  
6 missed doses than is likely, based on the  
7 blanket assumption that for every year,  
8 assuming during that time period you were on a  
9 monthly schedule and assigning simply 12 per  
10 month, and if there's 20 years, that would be  
11 240 or something like this -- or whatever. And  
12 in fact I think this guy went through  
13 (unintelligible) calculated because he started  
14 in 1953, I believe, where you had weekly and  
15 then you went to bi-monthly, then went to  
16 monthly. And I think in each case the -- and  
17 my statement sort of summarizes below that says  
18 NIOSH's assumption of 672 missed photon doses  
19 (unintelligible) and very claimant favorably  
20 because I came up with a considerable fewer  
21 number, and I may have even subtracted those  
22 periods where there was a positive recording  
23 that would obviously no longer qualify for a  
24 missed dose. So I think for efficiency  
25 purposes, they assigned a number of cycles that

1           were theoretical maximums, meaning that they  
2           assigned 52 for the years when it was weekly,  
3           24 when it was bi-monthly, 12 when it was  
4           monthly, et cetera, et cetera, and arrived at  
5           672 missed doses. And so I can understand that  
6           it's -- you know, when you -- when you get some  
7           of these DOE records, you can (unintelligible)  
8           and to wade through it, and if you know you're  
9           not going to compensate because of the nature  
10          of the claim and the cancer in question, for  
11          efficiency I say give him more than what he  
12          deserves rather than count the actual number of  
13          zero --

14       **MR. GRIFFON:** My -- my -- that's my question,  
15       are you giving them more than they deserve or  
16       are you just --

17       **DR. H. BEHLING:** Well --

18       **MR. GRIFFON:** -- operating efficiently?

19       **DR. H. BEHLING:** -- operating efficiently  
20       (unintelligible) --

21       **MR. GRIFFON:** (Unintelligible)

22       **MR. HINNEFELD:** Your point, though, Mark -- you  
23       know, I understand your point. Your point is  
24       that there may be exposures that are  
25       essentially unmonitored (unintelligible) that

1 he wore a badge that read zero --

2 **MR. GRIFFON:** (Unintelligible) unmonitored --

3 **MR. HINNEFELD:** -- but there may have been an  
4 event that was not captured in his record and  
5 so -- okay, I -- I -- I see your point. I  
6 think -- trying to struggle with this --

7 **DR. H. BEHLING:** This is --

8 **MR. GRIFFON:** Well -- well, I know there's a  
9 question of I think where -- where you have  
10 more evidence is when you -- you kick that back  
11 and say unmonitored and should have been moni--  
12 you know, unmonitored and he was clearly  
13 working in this area where all these other  
14 people were monitored, something doesn't look  
15 right. And I think just to start applying the  
16 LOD over two across these (unintelligible) in  
17 most cases are probably going to be claimant  
18 favorable, I agree. But you know, you -- and I  
19 guess where I am most -- where it raises a red  
20 flag with me in most cases is where you have  
21 gaps in the monitoring as opposed to for three  
22 years it's not -- nothing, and then he starts  
23 on a monitoring program and that looks pretty  
24 consistent. That's reasonable. But when you  
25 see, you know, spaces missing, that raises



1 flags with me more than -- you know, so I think

2 --

3 **MR. HINNEFELD:** Okay.

4 **MR. GRIFFON:** -- (unintelligible) some judgment  
5 call, but --

6 **DR. H. BEHLING:** Again, Hans Behling here. I  
7 looked at this case, Mark, and in this case it  
8 is not likely that there were unmonitored  
9 periods of time or missing records. What you  
10 can do is you can really streamline this  
11 approach by saying okay, with each of the DOE  
12 records what you get is usually a top page that  
13 says this is the history right here, and you  
14 get a dose value for, you know, 1953, '54, '55  
15 and so forth. And then you have to go down the  
16 list and then in the back pages you'll see  
17 dosimeters by cycles. And so if there were 52  
18 cycles, 24 or 12, you'll see a dose reading for  
19 each of those. And I believe I checked those  
20 and actually went through and there does not  
21 appear to be a period when the person was not  
22 monitored.

23 The shortcut they took was to assign  
24 essentially a missed dose for every single  
25 cycle, whether or not the recording was above

1 LOD or not, and so I believe the -- the  
2 assignment of the missed dose in this case was  
3 highly claimant favorable, and was probably  
4 done for efficiency purposes rather than making  
5 a guy go through reams of pages. He simply  
6 says we'll give you more, but I don't believe,  
7 and I take to heart your concern that there may  
8 be instances where a missed dose is generously  
9 assigned when in fact a higher dose for  
10 unmonitored was the case or records were  
11 missing. But in this case I believe that was  
12 not the case. I looked at the data. I looked  
13 at the summaries and I followed through -- in  
14 fact, I went painstakingly through it and said  
15 where did they come up with 672; I don't come  
16 up with that many.

17 **MR. GRIFFON:** But I did that with -- I think  
18 it's case #11. I walked it through that way.  
19 I didn't do it with this one, but I guess what  
20 drew my attention was substantial number of  
21 (unintelligible) cycles that are missing, but  
22 your comment -- but -- but then you said at the  
23 end there that NIOSH made claimant favorable  
24 (unintelligible) I'm not sure I --

25 **MR. HINNEFELD:** I'd like to try to go -- you

1 know, look at the record when we get back in  
2 the office, see if we can sort out a view of  
3 it, but I think your admonition here, Mark, is  
4 that -- if I can summarize, we have what  
5 appears to be a well-monitored employee, you  
6 know, meaning there's a pretty complete record.  
7 And there's some gaps in there that aren't  
8 particularly well-explained. Like there's no  
9 coinciding change in monitoring practices at  
10 the site or something like that, that that may  
11 want to throw down a flag about did we really  
12 get everything -- Department of Energy that we  
13 thought we got and that there may be some  
14 investigation on a case like that. But -- have  
15 I summarized it?

16 **MR. GRIFFON:** Yeah, and some of the generic  
17 cautions about relying on the annual summary as  
18 opposed to (unintelligible) crosswalk --

19 **MR. HINNEFELD:** And an annual summary may not  
20 encompass --

21 **MR. GRIFFON:** Right.

22 **MR. HINNEFELD:** -- (unintelligible) may not  
23 encompass an incident assigned dose, for  
24 instance.

25 **MR. GRIFFON:** Right.

1           **MS. K. BEHLING:** Kathy Behling, and I'm -- we  
2           were wondering if -- 'cause I think Mark's  
3           bringing up a very interesting point and will  
4           we be -- this is a more global issue and not  
5           specific to this case, but it's something that  
6           I wondered as we were walking through all of  
7           these cases, we saw a lot of areas where they  
8           calculated missed dose, but I didn't see any  
9           case -- now we only looked at 20 so far --  
10          where they came to the conclusion that there  
11          must unmonitored dose. And I'm just curious  
12          while we're at this point if NIOSH might be  
13          able to explain what flags go up where you  
14          actually go to coworkers, because we had one  
15          case where the claimant stated I definitely  
16          wore dosimetry, or maybe it was in a phone log  
17          or something, but we did come across data where  
18          the claimant -- and there just no records. And  
19          I wondered at what point does NIOSH actually  
20          say I think we may have unmonitored data here  
21          because we didn't see any of that in any of  
22          these 20 cases. I know it's a small sampling,  
23          but I just wondered what your approach is.

24          **MR. HINNEFELD:** Well, there's some general --  
25          there's some general approaches. There is a

1 whole category of construction workers that we  
2 -- we put it in the category of early  
3 construction workers. Now early is relatively  
4 ill-defined and it's different from site to  
5 site. But it's pretty well accepted that a  
6 construction worker at sites during, quote,  
7 early years may have fallen through the cracks  
8 of the radiation monitoring program, that he's  
9 a -- they're construction, they're going to be  
10 here temporarily, they'll be here and they'll  
11 be gone, and so they kind of fell through the  
12 cracks and may have been not monitored when  
13 they should have been. And so there's a whole  
14 category of claims -- you know, quote, early  
15 construction worker claims -- which we're not  
16 doing until we can assemble a set of  
17 information that will provide us some coworker  
18 popu-- coworker population type of numbers to  
19 use in an unmonitored situation like that.  
20 We have routinely -- we routinely -- I won't --  
21 well, not routinely, but it's not uncommon to  
22 receive dose reconstruction reports or to have  
23 prepared dose reconstruction reports for people  
24 who worked for a couple of years early in the  
25 gaseous diffusion plant and were not monitored.

1           And for those cases we have established a  
2           coworker population number -- you know, the  
3           monitored population and then, depending on the  
4           person's job description, maybe the mean or a  
5           high end of the -- of the distribution of  
6           monitored people to assign for that person for  
7           unmonitored exposure.

8           So there -- there are a number of categories of  
9           cases where we do say this is not someone who -  
10          - this is someone who was apparently not  
11          monitored, but was incorrectly not monitored,  
12          and therefore we need to make some sort of  
13          coworker dose assignment. So there are --  
14          there are a variety of them. I think you will  
15          -- you will see fewer in early cases since your  
16          reviews are on cases that are complete and were  
17          done relatively early. You'll see fewer  
18          examples early than you would see if you were  
19          re-- you know, when you get to the point where  
20          you're reviewing cases that are being prepared  
21          now. Okay? So it'll -- it'll be more apparent  
22          as the project goes on.

23       **DR. H. BEHLING:** I'm just reviewing and -- and  
24       I'm sure, Mark --

25       **MR. GRIFFON:** Yeah.