National Institute for Occupational Safety and Health (NIOSH)
Worker Outreach Meeting for the Paducah Gaseous Diffusion Plant

Meeting Date: Tuesday, December 7, 2009, 5:00 p.m.

Meeting with: United Steelworkers of America (USW) Local 550, Paducah, Kentucky

NIOSH Worker Outreach Team:

Peter Darnell, NIOSH, Division of Compensation Analysis and Support (DCAS), Certified Health Physicist
Susan Winslow, Oak Ridge Associated Universities (ORAU), Health Physicist

Mark Lewis, Advanced Technologies and Laboratories International, Inc. (ATL), Senior Outreach Specialist

Mary Elliott, ATL, Technical Writer/Editor

Wilfrid "Buck" Cameron, ATL, Senior Outreach Specialist

Proceedings:

Mark Lewis welcomed the attendees to the meeting. He explained that he had coordinated the meeting through the union's Worker Health Protection Program (WHPP) local coordinator, whom he had known since he had served as the local coordinator for the WHPP at the Portsmouth Gaseous Diffusion Plant. Mr. Lewis stated that he works with the National Institute for Occupational Safety and Health (NIOSH) to coordinate meetings with local unions representing workers in the U.S. Department of Energy (DOE) nuclear weapons sites.

Mr. Lewis stated that the purpose of the meeting was to get the workers' input about the site profile and to discuss the changes that had been made to the site profile for the Paducah plant since the last meeting with the union in February 2005. Mr. Lewis stated that the site profile can be viewed on the NIOSH Web site.

Mr. Lewis introduced his co-workers, Buck Cameron and Mary Elliott, both of ATL. Ms. Elliott explained that signing the attendance sheets was voluntary and the information is protected under the Privacy Act. She also explained that she was recording the meeting only for the purpose of preparing minutes that would eventually be placed on the NIOSH Web site. Ms. Elliott added that statements made by the members of USW Local 550 would also be protected under the Privacy Act and the comments would not be identified by name.

Peter Darnell introduced himself. He stated that under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA, or "the Act"), NIOSH performs dose reconstructions for EEOICPA claims. Mr. Darnell stated that NIOSH was established in the 1970s to conduct occupational safety and health research. As the result of that research, NIOSH developed the protective clothing and practices being presently used by the nuclear facilities.

Mr. Darnell introduced Susan Winslow of the ORAU Team. He stated that the ORAU Team is the contractor that develops the technical documents used in the dose reconstructions. Mr. Darnell explained that Ms. Winslow is the "document owner" for the Paducah Site Profile. Ms. Winslow stated that dose reconstructors use the site profile as a reference tool during the dose reconstruction process. The document contains site-specific technical information

describing workplace facilities, activities, processes, technology, and events that helps the dose reconstructors estimate how much radiation a worker may have been exposed to during his or her work activities in various areas of the site. It is important to include worker input to ensure that the site profile is as accurate and complete as possible so the dose reconstructors can calculate the worker's radiation dose as accurately and completely as possible.

Ms. Winslow explained that the team begins the document development process by gathering together all of the documents that they can find about the site. Getting workers' input is a very important part of the site profile development because that input helps make the document more accurate and complete.

Ms. Winslow explained that the site profile is revised as new information becomes available. She stated that significant revisions have been made to the site profile since the February 2005 meetings, based in part on the input from workers about the site facilities and operations. The Team also revised the internal dose guidance, as well as the facility and process histories, using reports from the Bechtel Jacobs Company ("Recycled Uranium Mass Balance Project Paducah Gaseous Diffusion Plant Site Report") and the PACE International Union ("Exposure Assessment Project at the Paducah Gaseous Diffusion Plant").

Ms. Winslow stated that the Paducah Site Profile has six sections: the Introduction, the Site Description, the Occupational Medical Dose section, the Occupational Environmental Dose section, the Internal Dosimetry section, and the External Dosimetry section.

The Introduction has been revised twice to include additional information defining facilities covered under EEOICPA and to add an "Attributions and Annotations" section to link information to the site profile's reference list. Similar changes have been made to each of the site profile sections.

Two revisions of the Site Description section include the addition of dates for recycled uranium processing; the addition of Table 2-1, "Buildings and Potential Exposures to Recycled Uranium"; the addition of facilities not previously listed; and the addition of Table 2-4, "Processes and Facilities Involving Potential Worker Exposure."

The Occupational Medical Dose section has been revised twice. Revisions include: recalculating the X-ray doses to the skin from March 1975 to the present; removing the combined skin dose for posterior-anterior (PA) and lateral (LAT) X-rays since different areas of the skin are exposed for each of these procedures (individual doses remain in the site profile); and removing the dose for lumbar spine exams.

The Occupational Environmental section has also been updated twice to include additional periods of operation with feed materials and recycled uranium to be consistent with the Internal Dose section. Based on worker comments, the authors added a discussion regarding potential worker exposures to neptunium (Np237) with a fraction to uranium as high as 90%. During the revision process, the NIOSH Team found documentation in reports from 1962 that the workers who had the highest potential for Np237 exposure were sent to Y-12 for whole body counts, and no detectable Np237 was found.

Three revisions of the Internal Dosimetry section include the addition of Table 5-1 to highlight the radiological source term for various processes and facilities. Table 5-2 provides isotopic fractions by process or facility. Table 5-4 was modified to include additional radionuclides and

measurements, and to lower the minimum detectable concentrations (MDCs) for several measurement types for *in vitro* assays (urine analysis).

The External Dosimetry section has been revised three times. NIOSH added additional information in Section 6.3.2.2 about average neutron energy ranges based on depleted and natural uranium cylinders. Section 6.3.4.3 was revised to include additional discussion of neutron studies at other sites (Portsmouth, X-10, and Y-12) to develop neutron dose fractions (Table 6-5). The average recorded cumulative deep dose and shallow dose tables were removed and included in a separate technical document on co-worker dose at the Paducah site. The uncertainty section was simplified and condensed.

Ms. Winslow emphasized the importance of getting input from workers to make the site profile a better tool for accurate dose reconstructions. She asked the attendees to examine the site profile to see if they have additional information that NIOSH can evaluate for use in the revision process. She concluded by stating that information can be sent directly to NIOSH.

Mr. Lewis stated that Jenece Everett from Congressman Whitfield's office was in attendance at the meeting.

Mr. Lewis explained that he had met with the WHPP coordinator about two weeks prior to the meeting to drop off copies of the site profile so the attendees could prepare for the meeting. He asked the attendees to share their concerns with Mr. Darnell.

The WHPP local coordinator encouraged the attendees to make comments and ask questions if they had concerns.

Mr. Lewis stated that he understood that one area of concern to the attendees was Building 340. He acknowledged that, while most of the site profile was very technical information and difficult to understand, it was very important for the workers to provide information where possible to improve the document.

Question from the WHPP Local Coordinator:
What do you want from us?

Question:
How can we tell you anything until we have seen the document?

Comment from the WHPP Local Coordinator:
We didn't have time to get the document to everyone.

Mr. Lewis:
We have copies of the site profile here that you can look at. We have people here who can answer your questions. Any information you can add to the discussion is important.

Mr. Darnell:
NIOSH received some information about Building C-400 that we didn't have before. One thing that we are limited by is what part of the worker population was in that facility. We need to know this before we can define the dose.

Question:
Do you want to know a head count of who was there or what they did?

Mr. Darnell:
Any information you can give us along those lines would be helpful. We really can't tell you the dose until we get that information from you.

Response (from several workers):
In the earlier days, there were 15 to 16 people working in the facility. During the upgrade program, there could have been up to 50 at night. It changed over time. There were operators, maintenance mechanics, converter maintenance, security personnel, and firefighters. Many of the people assigned to that building did not necessarily work there all of the time. During an 8- or 12-hour shift, they might work all over the plant.

Mr. Darnell:
It would be very helpful to know how many worked their regular 8-hour shift in the building.

Comment:
During the upgrade program from 1978 to 1981, or maybe 1977 to 1980, we had nine operators working 8 hours a day on our shift. There were people in there around the clock.

Comment:
You said something about neptunium and trace elements. There were several people washing the heels out of those cylinders to get the trace elements. There are several of us here who are 80 years old or older who worked in that building. There were several people who were exposed in that program.

Comment from a WHPP Local Coordinator:
I worked with one gentleman who is now dead and several others who talked about washing those cylinders. That was an ongoing process for years. Those men worked as operators and were exposed to all of these different radionuclides like plutonium, neptunium, americium, and thorium. They worked that job around the clock.

As far as the 400 Building, I worked as a converter shop mechanic not only in 400, but also in 409. I don't know what type of clearance you have, but we were exposed to lots of dust stirred up during the cleanup. In the part of the site profile that I saw, it really didn't say much about 409. That is where the converters were disassembled before they carried them to the 400. There were jobs over there that created a monumental amount of dust when they started tearing the (sounds like "Q bones") apart. I had to crawl way up in the converters and I would come out with the powder all over me. I would have that on me for the whole eight hours. We didn't change coveralls and we didn't have the yellow coveralls then. We just wore what we had. We ate with that stuff on our clothes. We carried it to the "clean" break rooms in the cleaner parts of the plant. We carried it to the dispensary. We carried it to the (sounds like "roxy") or wherever we went. I would like to know where those isotopes went, because we didn't take them out of the cascades. I know that there are some deposits in some of the buildings.

Mr. Darnell:
We have some technical information on C-400 that we thought was enough to do dose reconstruction, but what we are missing is your input because that would be how we would find you in that facility. We will assign any dose that we can reasonably assign to that worker. If we don't have any records that you worked in the building and we can get an affidavit from a coworker to show that someone was in there, then that is what we need. If we can place a worker in the facility, then we can apply the data that we have to assign the dose.

In regards to the isotopes that were there, we need that information, too. If we can get the information in writing, then we can follow up on it.

Question:
I was taken out of 409 because I got too "hot," but none of my medical records show that I was ever in that building.

Mr. Darnell:
We have heard this a lot, and we know it's true. We know that there are gaps in people's documentation.

Comment:
They don't even have a record that I worked at the plant from 1977 to 1999. How are you going to get my data if I can't even prove that I worked at the plant?

Mr. Darnell:
I don't know what to do for you about that. All we need is an affidavit. DOL collects that data from DOE. DOE would have kept your records.

Comment:
(Inaudible) converters. They used to bring us that stuff after it had already failed. After they tore it apart, that yellow powder would fall right out of it. They would bring it in with forklifts and track it all over. Where do you want to go with that?

Mr. Darnell:
We will go as far as you want us to go.

Comment:
No, I don't think you want to do that.

Mr. Darnell:
I have a DOE Q clearance and a Department of Health and Human Services top-secret clearance. If we need to talk about classified information, we can set up a meeting in a secure setting.

Comment:
So many of them out there are still "hot" that they don't know what to do with them.

Question:
Why don't they reach out to the workers about where they worked and what they did in the buildings? Some of them are getting up there in years and won't be around much longer. They need to document all of it.

Mr. Darnell:
One problem that we often run into is that widows don't know what their husbands did. What I have suggested to people before is to get groups together like you are doing tonight. Talk with everybody because everyone has a different memory of their work. Write down this information. NIOSH would be glad to combine it with the data that we already have.

Question:
What are you going to do with it once you have it?

Mr. Darnell:
The purpose of the data is to use it to help make dose reconstructions more accurate.

Comment:
I have been turned down twice for compensation already.

Mr. Darnell:
NIOSH has received over 30,000 cases for dose reconstruction. We have completed almost 25,000 cases. We are still working on the remaining cases. When we get your information from DOL and DOE and your claim comes up for dose reconstruction, one of the first things the health physicist does is look at that information. If your dose is so low that it doesn't look like it will get over 50% when he applies as much dose as he reasonably can, then your dose reconstruction will be finished. If your dose is so high that he doesn't have to apply much dose to go over 50%, then your dose reconstruction will be finished. If your dose falls into that narrow band between 40 and 50%, then we are going to try to find every bit of dose that we can possibly uncover to make sure that your dose is as accurate as possible. So there are actually three types of dose reconstructions. I don't know the specifics of your case, but I gave your president my contact information. If you need to talk about your claim, then I would be happy to do that at a later time.

We came out here to get specific information about C-400 so we can be more accurate about the dose reconstruction data that are applied to workers' cases.

Question:
May I make a suggestion? Instead of having a large group like this where not everyone worked in C-400, why don't you put us into groups by the various buildings?

Mr. Darnell:
We will be glad to have meetings like that with you if you like. All you have to do is ask us to do it.

Question:
Can we not do that tonight?

Mr. Darnell:
We can to a point, but you haven't seen the document so you don't know what we already have in place.

Comment:
I don't really know what's going on out there anymore. I've been retired since 2003, but I do know that they are tearing down 410 now.

Mr. Darnell:
I have no idea what's going on now at the Paducah site, except for what is in the site profile.

Comment:
They are tearing down 340, 410, 420, 411, and 746A.

Comment:
I'll tell you about a job I did in 400 in 1975. For a 3 week period, three other guys and I spent the entire time cleaning off the tops of cranes with air hoses, blowing everything off them so we could paint them. We would sweep up what we could and blow the rest of it around with the air hoses. There isn't a record anywhere that it happened, but that's what we did. It was our job.

Comment:
What you probably don't know is that there were lots of times when we would work in 400 for a half day or more. I was a heavy equipment operator and worked in every building in the plant. I moved all the worst stuff from all over the plant to the burial grounds. They burned X-ray films for a week. You wouldn't think that those films would be contaminated, but they were. I buried the ashes from the films. When they cleaned up the contamination, the heavy equipment operators buried it. Laborers, janitors, the people who moved all over the plant got doses that were probably higher than some of the people who worked in one place. We got telephone calls from the Department of Justice (DOJ) asking where the slag from the smelter was buried. Now that's some dirty stuff, and there I was down there cleaning it up – waiting for the next dumpster can. It's a nightmare out there. I don't know if NIOSH will ever be able to get an accurate dose reconstruction because of the job scope. It changed daily.

Mr. Darnell:
The EEOICPA statute specifically addresses that particular concern with the Special Exposure Cohort (SEC). NIOSH cannot be 100% accurate with your dose reconstructions. That is why the SEC was created. If you have one of the 22 listed cancers and worked for at least 250 days during the time period, you are compensated under the SEC. NIOSH will do the best that it can do for the remaining cases that need dose reconstruction. That is why we keep coming back to you asking for more information from the experts that worked here.

Comment:
I worked out there for 38 years. I worked in 340 and it was so "hot" that you worked until they told you that you'd better get out. *(Inaudible)* The guy that I talked with about my claim said it didn't really make a difference where you worked.

Mr. Darnell:
I think Ms. Winslow will agree with me that it does make a difference where you worked on the Paducah site and what your job was that took you to different places in the plant. That is why we are here.

Comment:
I worked in 410, 420, 340, 400, the smelter – you just name it. I worked in all the "hot" buildings. The day I retired, I went to get my records and they didn't have them until three hours later. According to my records, I have never been "hot." There is no way in the world that you can come up with an accurate dose reconstruction. The records were not kept then.

Comment:
You explained that the SEC was included when the bill was written. If the SEC gives automatic compensation to those workers who have at least 250 days and one of the 22 cancers, then why is dose reconstruction still necessary for these guys who worked there 40 or 50 years ago? Can you explain that?

Mr. Darnell:
Dose reconstructions are done for people who don't meet the 250-day requirement or who don't have one of the 22 cancers or multiple cancers that are not on the list. There are a number of reasons why DOL might request dose reconstruction. There are also Part E cancer cases that may require dose reconstruction. We don't have any more information other than the number that we come up with. We give that to DOL and they use it to decide compensation. Under Part B and

the SEC, prostate and skin cancers are not listed, so Part B cases that fall in the SEC time frame get partial dose reconstructions.

Question:
What about the chemicals that we were exposed to in the 400?

Mr. Darnell:
Those exposures fall under Part E and are administered solely by DOL. We don't do anything with those unless the chemicals contain radioactive materials, then we consider the chemical exposures.

Comment:
I was a chemical operator. I worked decontaminating equipment back in 1975. I think where you missed the point that a lot of times, exposure to chemicals may make a worker more susceptible to radiation. For example, we used to clean cascade sections in a spray booth with nitric acid so we were not only exposed to radiation, but to chemicals as well. Building 400 contained many toxic chemicals which could very well affect your dose. I don't think that dose reconstruction takes any of that into consideration, and it really should.

Mr. Darnell:
I understand what you are saying – that dose reconstruction does not take any of the chemicals into consideration. By law, it cannot. The law is very specific about what goes into a dose reconstruction and what does not. To make a claim for Part E, you must contact DOL and tell them about your chemical exposures – the more information you can give them, the better off you are. Talk to your coworkers and get even more information. The DOL Web site lists all of the chemicals that were used at the Paducah plant in a Site Exposure Matrix (SEM). You can go into the SEM and see which ones cause cancer and whether you were exposed to them. If a chemical was on site, you could have had an exposure to it. DOL will accept a coworker affidavit as proof that you worked with a chemical.

Comment:
In 400 especially, we worked with acids, steam, hydrochloric acid, degreasers, parts with uranium deposits, and it got everywhere, and uranium mixed in with the chemicals. When we were working with the acids and the steam and the uranium, we saw reactions and it was airborne. What they are saying is that there was exposure to radioactive material with some of the chemicals.

Mr. Darnell:
In the field of health physics, we actually do take into account some of the chemical bonding with the radioactive material – for example, with some of the metal tritides, we have tritium contamination. We know that this causes exposure in certain organs such as the lungs. Most chemical exposures don't matter with dose reconstruction. We know that uranium hexafluoride and other uranium compounds go through the kidneys. The chemical really doesn't matter because the uranium is going to go to your kidneys. I'm not saying that goes for all radioactive materials; it does vary. We take into consideration the ones that we do know.

Question:
How do you document exposures if they aren't in the records?

Mr. Darnell:
Once NIOSH has the work history for a worker, we can use the data for that facility during that time period to give the worker the highest feasible dose possible.

Question:
How do you prove that you were there?

Mr. Darnell:
DOL will accept an affidavit from your coworker.

Comment:
Building 400 was a diverse operation. They had grinding and screening of uranium and tails. They washed cylinders. They had hand tables. They disassembled equipment. I don't know whether workers were assigned for long periods of time or whether they had rotations, but the people who worked there could tell you. Each one of those operations had a specific problem that was associated with it. If you could do nothing else, you could divide workers' time between those operations that had uranium in any form, or plutonium, or thorium, or any of the reaction products that were involved. You could set up each section by chemical or radiation dose and move the worker through that system for their time – or at least on a pro-rated basis, you could come up with something very sensible. But you have to divide it into what was involved because there were so many different operations. They talked earlier about converter disassembly. There was also pump disassembly, valve disassembly, and silver wash. Grinding and screening of UF4 was a problem, and they had some real experiences. If you could get the workers from 400 to give you the six best or worst activities and cycle the workers through the activities, I think you could really get a better handle on things. But 400 was a diverse facility, not like cascade buildings where you had a specific operation. So divide it up before you figure it, and then you can pro-rate it.

Comment:
You could take that one step further and do the same thing for 410, 420, 340, the smelter, and the whole plant.

Comment:
I don't think they use the hand tables any more. But back in the early days, people had their gloves on, cleaning uranium off small parts without using respirators.

Comment:
My first job in 400 was on the hand tables.

Mr. Darnell:
Generally, we look at the worst possible job scenario in a facility and bound the radiation dose for that job at the upper level to get the highest feasible dose.

Comment:
But 400 was a very diverse facility. You have to talk to people. They will probably tell you there were 20 to 30 tasks. Then you could pick out six, or eight, or ten that were most likely to have the highest exposures to radiation and chemicals.

Comment:
They also did some type of plating.

Comment:
If you take all of this into account, it means something, instead of being just a "hodgepodge" of information.

Ms. Winslow:
What we have done in the site profile is to pick out some of the operations – polarizing operations, ash handling operations, greensalt production. All of those things, regardless of the location on site, were considered to get the highest airborne concentration that you could find anywhere and apply that to those operations; or to C-410 – to that building as a whole.

Question:
How do you get that data? Do you have to make a FOIA request to get it?

Mr. Darnell:
We have a team that goes out to the site, and to other sites, to do records searches. If you know of any records, or that there is a lack of records, we need to know that. I will remind you again that if there is a lack of records, there is already a SEC class for Paducah, which means that the workers who have one of the 22 listed cancers will be paid. If there is information that we don't have, or you don't have, it's already going to be estimated the best we can. I don't want to leave the impression that this meeting is going to change everything. If there are missing documents, it may not happen.

Comment:
I want to add something to what was said earlier. He made an excellent point. He and I worked together in 400. We had a job where we would shovel out the pit under the cylinder wash. You could only work 30 minutes in the pit. Then you would go work at the pulverizer processing ash receivers, and you might do that the rest of the week. Then you might move on to the spray booth where you might decontaminate compressor parts, then move to the dry (inaudible). After that, you might move to the hand table, so you are in a constant rotation. Then at 2 o'clock in the morning, the maintenance guy might roll up with a crapped up cooler. He couldn't tell you where it came from – "If I told you, I'd have to kill you." I don't see how you can do an accurate dose reconstruction. As he said before, you rotated through the different operations in 400. You might change out aluminum traps in 35 and come back to work in the spray booth.

Mr. Darnell:
I'm not going tell you that anything is going to change if we don't have all the information. This site already has a SEC class. That process is supposed to make up for not knowing everything about the site. I can't tell you that NIOSH can give you a 100% accurate dose reconstruction, but we will do our best to do so. If you're very close to 50% and we give you a lot of dose, we are going to be done with it. If you are very high and we give you a small dose that takes it over 50%, we are going to be done with it. By close to 50%, I mean that it is in the band between 45 and 52%, and then we are going to try to be as accurate as we can be. That doesn't mean that your dose reconstruction is 100% accurate. We will be as accurate as we can be when we input all of the data that we can get from a credible source.

Comment:
The data from the site is not good. I will give you one example: the air samples for 410. It's a fact that they covered the air sampler with duct tape sometimes.

Mr. Darnell:
I will be honest. We have a site where the dosimetry records were absolutely forged. There is a SEC class there. We have absolute documentation that workers were told to take off their badges to do a job, and the reasoning in the radiation protection at the time was that they didn't need to know the dose because they already knew that it was high, so they just bounded the dose with the time. The radiation protection practices changed over time. Not everything was DOE trying to put something over on you, but we don't doubt that some of it was. What you are saying about the air monitors being covered, we will take that into account. But again, this is already a SEC site.

Comment:
I want to add to what he said about air sampling, but I only saw this once. During a converter disassembly in 409, we didn't have an air sample the entire time I worked there. We didn't have a continuous air monitor (CAM) at any time. We came out of those converters with our snakes, covered with gray dust. They built us our own break area because they said we were contaminating the ones in other areas. When we disassembled the converters, the health physics people would come in wearing respirators. We walked right behind them without respirators.

Mr. Darnell:
We try to "bound" those doses the best we can with the available data. If you're looking for your exact doses, you're not going to get that in this program. We don't know enough with 50 years of history at hundreds of different sites with thousands of dosimetry readings to tell every worker's exact dose.

Comment:
I was sent with a group of workers to Fernald. When I got back, I requested my results. The company invalidated the records and said that contractor had "cross-contaminated" his laboratory so all records were null and void.

Comment:
I have my Fernald records.

Mr. Darnell:
I don't recall ever hearing this.

Question:
Have I heard correctly – that the only way we can help you is to give you information that is not already in the site profile? Where can I find access to the site profile? Is it online?

Mr. Lewis:
Yes, you can find it online.

Mr. Darnell:
We brought copies with us, too. Skip the Introduction. Look at the Site Description, the Internal Monitoring section, and the External Monitoring section. Specifically, we need to know how to place workers in C-400. We need documentation of the worker population. It might say that everyone was in there, but they were just cycled through. It would help to know that there were specific workers who had their entire shifts in the facility.

Comment to the Attendees from the WHPP Coordinator:
If you didn't get a copy of the document, please tell me where to send it or bring it, and I will make sure you get one.

Mr. Darnell:
I don't know how many of you have claims, but you can contact your Public Health Advisor (PHA) at the NIOSH 800 number. You probably already have that information. If you have technical questions, your PHA can put you in touch with me and I will do my best to answer them.

Question:
Can you give us an example of the information that you need about 400? Do you need air samples? Do you need urinalysis results? What exactly do you need?

Mr. Darnell:
We are looking for air sampling data, urinalysis data, records that put the worker in that facility. We're looking for anecdotal stories that tell us about operations in there – really, any information that you feel would be valuable for us to use in dose reconstructions. We will sift through the data and hopefully come up with better numbers.

Comment:
Having worked in 400 for several years, what I fear the most about my time there is probably the cylinder wash. When you're standing over anywhere from zero to six inches of sludge from those daughter products that came out of those heels and you're working 8 hours a day, five days a week, you're probably getting a pretty high dose rate, and you're not being rotated off.

Mr. Darnell:
That is not entirely true. The external dose rate could be fairly significant from the beta radiation, which would probably be stopped from going into the body by your skin and your coveralls. The alpha radiation would be caught up in the sludge and you're not going to breathe that. So, yes, you could get a pretty heavy external dose from working over that sludge but it's going to bounce right off your coveralls. If it's wet, you're not breathing it in, so your worry about working over the sludge is not as significant as you think.

Question:
What about the pulverizer?

Mr. Darnell:
Yes, that is a different contamination scenario because the dust is in the air and you're breathing it in. But I wouldn't worry so much about the sludge.

Question:
What about the heels that were coming in from Hanford? That was some nasty stuff when you were grinding it off.

Mr. Darnell:
That would be the same as the stuff from the pulverizer. Maybe it makes more sense if we look at this way: If you're mowing your grass and it is wet, do you get as much dust in your nose as when it's dry? It's not going to get inside like it would when it is dry.

Comment:
The basic documents are just not there.

Mr. Darnell:
If there are no records, we take the highest dose and use it for everybody. If we use that high dose and you still don't get close to 50%, then the dose reconstruction is done because we know we were using the very highest doses.

Question:
I remember when railcars full of used 55-gallon drums would come in from Hanford. We laborers kicked those empty drums off the railcars. The bad ones were buried and the good ones were sent to 340 and were re-used. We did that for a couple of years.

Comment:
Some full drums came in, too.

Mr. Darnell:
What you are doing here is very important. You are helping each other remember the job. It helps to get people together in small groups to talk about their work experiences. This is what we need you to do together so we can do a better job for you.

Question from the President of Local 550:
If we work together to do this, how do we get the information to NIOSH? Do we make affidavits?

Mr. Darnell:
If you have records, we need the records. For anecdotal stories like this, DOL needs the affidavits. They will forward the documents to us.

Question from the President of Local 550:
Will these minutes help?

Mr. Darnell:
To be honest, we have heard a lot of the information that we have heard tonight before. Some of the information about C-400 is going to help. I know you know more because you're the experts.

Ms. Winslow:
I think that's the best way. Write down everything that you can remember about what you did in that area. Everything you write can help us understand better.

Mr. Darnell:
NIOSH wants to work with you. The more information you can give us, the better we can do what we need to do.

Comment:
All of us worked together. Some of them worked in 400 and I worked in all of them at one time or another. But there is no way that I can sit down and remember all of the things I did and the dates.

Mr. Darnell:
You might not remember specific dates, but someone else might if you are talking about it together.

Comment from the Health and Safety Representative of Local 550:
I filed FOIA (Freedom of Information Act) requests for documents to use in my testimony to Congress. There are seven filing cabinets in a secret vault in the Federal Building in Oak Ridge. You can go into the vault and look at the documents, but you can't take a pen and paper or anything down there with you. I spent two days trying to get the information that I needed for my testimony.

Comment:
I'll tell you that 99% of the information that you're for looking is with an attorney in New York City, but you're not going to get it – at least not yet.

Mr. Darnell:
There are national security limitations on what we can talk about with you, but we have cleared personnel who can talk with you.

Question:
What about workers who can't file a claim because they have had diagnoses of precancerous conditions? For example, let's say the worker has had surgery to have precancerous nodes removed from his thyroid and is taking the same medication as someone who has had surgery for thyroid cancer.

Mr. Darnell:
That worker can file a claim under Part E for illness due to chemical exposure. Tell him to call DOL to file a claim.

Mr. Darnell thanked the attendees for their time and adjourned the meeting at approximately 6:25 p.m.