



NIOSH Dose Reconstruction Project Rollout Meeting for the Pinellas Plant Site Profile

Meeting Date:

November 2, 2005, 1:00 p.m. and 6:00 p.m. sessions

Meeting with:

Former workers from Pinellas Plant, Pinellas Park, Florida

Attendees at 1:00 p.m. Session

Barbara Holan	Dave Bossard	JoAnne Walker	Fred Ansell
Bill Garen	Gladys Hartranft	James E. Knighton	Marion V. Gaynor
Herb Currington	Lois Grayson	Jim Caven	John Pool
Horace Piner	William Sunderbruch	Mike Kruse	Charlotte Sunderbruch
Tasker Beal, Jr.	Leslie Edrington	Bobby Buckley	Paul Messenger
Ken Hall	Helen Keseleski	John Phillips	Texann Smith
John Austen	Walter Fulford	Nolan Huseby	Jim E. Spencer
John E. Yeates	Royce Dixon	Bill Williams	Eric Yeates
James Voytko	Daisy Beal	Edward Fernandez	Dorothy Murray
Melvin McKeel	David Webb	Cecil Wiltshire	William Thompson
R Stevens	Don Edwards	James Hollen	Russel Loughry
George Dann	Burton Moeller	Robert Smith	David Vaughn
Phil Lutz	C. Winkler	William Hall	Earlie J. Williams
Frank H. McNabb	Tom Miller	Warren MacKay	Ogot Ludwig
James Carl Carter	Sam Mack	Annie M. Jones	Clarence Eichman
George Nelson			

Attendees at 6:00 p.m. Session

Mabel Gettles	Margaret Strickland	Harry Strickland	James E. Woods
James M. Althoff	Donn Brown	Dudley Tichenor	David Merens
Sandra Wilson	J. O. Gill	Alan Marcott	Alice Gray
Margarite James	Bob Meals	Forbes Allen	Clifford Lawson
Lew Zerfas			

NIOSH and ORAU Team Representatives:

Mark Rolfes – National Institute for Occupational Safety and Health (NIOSH), Office of Compensation Analysis and Support (OCAS)

Paul Demopoulos – Advanced Technologies and Laboratories International Inc. (ATL), Site Profile Team Leader

William “Bill” Murray – Oak Ridge Associated Universities (ORAU)

Mark Lewis – ATL

Mary Elliott – ATL



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*The following record of minutes is a compilation of two meetings held between the NIOSH/ORAU Worker Outreach Team and the Quarter Century Club, a retirees' organization of workers from the former General Electric Plant, referred to herein by the ORAU team as the "Pinellas Plant." The agenda for both meetings was the presentation of the Pinellas Plant Site Profile. Most of the Attendees were former workers of the Plant, although not necessarily members of the Quarter Century Club. The **Proceedings** section of these minutes includes the Questions and Comments from the 1:00 p.m. session. Questions and Comments from the 6:00 p.m. session follow in a separate **Discussion/Questions & Answers** section.*

Proceedings

Mr. Lewis began the meeting at 1:00 p.m. by thanking the former workers from the Pinellas Plant for meeting with the Worker Outreach Team. Mr. Lewis introduced the members of the Worker Outreach Team and explained that the purpose of the meeting was to present the Site Profile for the Pinellas Plant. He asked the attendees to introduce themselves and tell where they worked in the plant. Mr. Lewis explained that he was a 30-year employee in the nuclear weapons complex who is taking leave of absence to act as a union liaison between the Worker Outreach Team for the National Institute for Occupational Safety and Health (NIOSH) Dose Reconstruction Project and the labor organizations that represent the workers and former workers from Department of Energy (DOE) and Atomic Weapons Employer (AWE) sites. The team meets with union representatives to discuss the Energy Employees Occupational Illness Compensation Program Act (EEOICPA) and the Site Profile documents that are written to provide guidance for the radiation dose reconstructions for claimants under Subtitle B of the Act. Since the Pinellas Plant did not have an organized union, NIOSH permitted the team to work through the Quarter Century Club to contact former workers from the plant.

Mr. Lewis stated that the Worker Outreach Team met with the former Pinellas workers on September 2, 2004 to get input from the workers to help the Site Profile Team develop the document. Input from that meeting was considered as the team prepared the document. NIOSH wants to give the workers the opportunity to make their voices heard in the Site Profile. He asked the attendees to feel free to ask questions about the Site Profile, to comment on what they feel is wrong or right with it, and to share anything that they feel might make it a better document.

Mr. Murray informed the group that an audio recording was being made to help ensure that their comments and concerns are properly addressed in the minutes, not to note who made what comment. He also noted that only the names from the sign-in sheets would be listed in the minutes and that contact information would not be made part of the public record. In response to a question about how long the meeting would last, he replied that it was the group's meeting and that it would last as long as members of the group had questions or comments. Any questions about the Site Profile could be addressed during the presentation.

Mr. Murray asked how many attendees were at the September 2004 meeting. A show of hands indicated fewer than half had attended the previous meeting.



Comment:

The reason why more people were not at that meeting is because they were never notified. It seems like the place to start would be to get a complete list of everyone who worked in the plant. Can't you go to the Lockheed-Martin and GE retirement benefits people and get a list?

Bill Murray:

We worked through the Quarter Century Club to get their membership list and we sent out over five hundred notices. Some of the people on the list may have moved away or passed on.

Comment:

But it is an incomplete list... If you follow the retirement checks, you will find out where all these people live.

Comment:

This is a pretty informal group we have here. This retirement thing is just an informal group.

Bill Murray:

I appreciate all of you coming, but we do not have any way of getting the lists from the retirement benefits program. Most often, our primary contacts at these sites are union representatives. I know that just is not possible here. Even when we go to those sites, if they have been closed for many years it is very difficult to notify anyone.

Comment:

All you would have to do is go to Princeton Retirement Services and get a tab run.

Bill Murray:

If you want to make that kind of a comment, you need to let NIOSH know that is the kind of outreach you want done, but it is not the type that NIOSH usually does. That is all I can tell you.

Question:

What about the Department of Energy? They ran a screen on security. Doesn't anyone from that department have a list of cleared personnel with a Q clearance?

Bill Murray:

I am sure there are a lot of lists of the people who worked at the plant, but that is not the way NIOSH works. Their job is to process radiation dose reconstructions for the claims. The meetings for this plant have been some of the largest we have had. Usually, we meet with just a handful of people.

Question:

At the meeting in September 2004, your group talked about "We can't find this record or that record." A young lady (*name withheld*) who was at the meeting asked what records you were looking for and they said "the dose records for the Pinellas Plant." She said "I have them in my office, why didn't you ask me for them?" Did they take the time to go get those records?

Bill Murray:

To answer your question: NIOSH responds to individual claims. When NIOSH receives a claim, they make a formal request to the DOE for that person's radiation dose records. The requests are driven by the claims.



Question:

Are you aware that the records are there at the plant?

Bill Murray:

Sure, because we keep getting them.

Response:

Okay. That is all I wanted to know.

Comment:

Based on the last meeting we had (September 2, 2004), it sounded to me like a lot of these records have fallen in a hole. And she came out with the fact that she has all these records. That might have a big impact on this profile because a lot of the profile is constructed on what we are saying in this room. And she actually has hard evidence, but I don't think anybody knew that she existed with those records. I got the impression that nobody could get into that big database at Sandia or wherever it is, but she actually has those records right down the road here.

Bill Murray:

We have a group within the ORAU Team whose job is records capture.

Response:

I don't think they know she exists. I don't know if it had to do with you folks or the chemical hazard meeting, but she volunteered the fact that a lot of records nobody could find are in her possession – and she still has those records and she is right in the plant right now. As far as I know, nobody ever requested anything from her.

Bill Murray:

We will make sure that Mark Rolfes gets her name and see that she is contacted to see what kind of records she has available.

Question:

When will we receive a list of all the cancer deaths at the General Electric plant? How many cancer deaths at the GE plant? Another thing, I worked in Tools and there were ten cancer deaths in Tools – two supervisors and eight toolmakers and machinists. That's about thirty-three percent of the employees in that department. Why can't we get a list of the cancer deaths in the whole plant? Are you going to get us the list?

Bill Murray:

No. Under the EEOICPA legislation, we respond to claims. If you know people who have died, the best thing to do is make sure the survivors are submitting claims. It is not part of the program for the Department of Labor or NIOSH to contact people who have cancer.

Comment:

The problem I have is that someone has to be charged with communication. If you want a good site profile, you have to talk to a lot of people, so someone has to be in charge of communication to get as much input as you can get. Who does that? Who communicates that you need all this information? If you look around this room, this is a very small representation of the number of people who worked at the plant over the years. There were about 2,000 people working at the plant at one time. I'm just saying that someone has to be charged with communication somewhere.



Bill Murray:

That is one of the reasons that we are back here. During the first meeting, we told people that we were looking for certain types of information. Some of you shared that information with us. Primarily, the Site Profile Team uses government and contractor records to put this profile together. As you review this document, if you notice that something has been omitted or is incorrect, or that it is in some way not comprehensive, please tell us and we will search for information regarding your comments. There were a lot of comments made at the previous meeting. We found information to document some of those comments, but could not find information on others. This meeting is another opportunity to make your voice heard on the Site Profile.

Question:

Why did they switch from DOE to DOL (for Subtitle E)? Is it a tactic for delay?

Bill Murray:

I will address that during the presentation.

Question:

Were decisions made regarding compensation prior to the completion of the Site Profile? How could they arrive at a conclusion before they had a document to go by? And to three decimal places I might add.

Bill Murray:

I will let Mark Rolfes explain that.

Mark Rolfes

NIOSH uses an efficiency process for some claims – for certain types of cancer, for certain lengths of employment or for situations when the latency period for a cancer diagnosis is not long enough to produce a considerable amount of risk. NIOSH can look at certain claims for workers who were monitored routinely and never had any positive recorded dose. We can apply claimant-favorable overestimating assumptions in order to assign a maximum dose estimate for certain types of cancers for certain claims. Those are the claims that we process ahead of the site profile. Some claims can be completed in this manner while others require the technical information found in the site profile. NIOSH may look at those claims that were rejected if new information in an updated site profile has a significant affect on the assigned dose. Once a claim has been completed, if we receive information that a person has additional cancer or additional radiological exposures, we do take another look. We do not ignore such things once a claim is completed.

Question:

How did you arrive at three decimal places with no data?

Mark Rolfes:

They shouldn't be there.

Response:

But they are and nothing has superceded it.

Mark Rolfes:

I can take a look at the claim and speak with you about the claim



Response:

It is not my claim necessarily. It's the process. How can they come up with such numbers with no data?

Mark Rolfes:

Those numbers are calculated by a tool that is used in making the dose estimate.

Response (from another attendee):

But when you get a rejection based on something like that, what is your recourse – when you get a recommended rejection and it is based upon the organ where the cancer was, or where certain records are not available from the doctor who made the diagnosis because he is no longer practicing or has purged his records? What is your recourse on things like that?

Mark Rolfes:

NIOSH does not verify the claimant's covered employment or medical diagnosis. The DOL provides us with this information for use in a dose reconstruction.

Response (from second attendee):

What if the records you are given are incorrect or incomplete? If you get records that say the employee was a toolmaker, but he was a tool and die maker, a planner, an escort, he was in an out of hot air, he was in the regular tool room, he was in the experimental tool room? How do you correct that data? Is a retiree's wife going to argue with NIOSH? Will she even know where he worked?

Mark Rolfes:

When we have any uncertainty about a claimant's dose information, we use maximizing assumptions to estimate a dose that is higher than what the employee was likely to have received. If he had one rem of recorded exposure on his film badge and worked there for twenty years, the reconstructed dose that we assign could be ten times higher – or even up to one hundred times higher – than the dose the worker may have actually received according to his film badge. We apply overestimating assumptions to the claim in order to expedite the process.

Response (from second attendee):

But that is assuming he had a film badge. We are talking about people who worked at the plant in the 1950s. They didn't have badges.

Mark Rolfes:

That is true. Not everyone was monitored. We look at that. In many cases, we use co-worker data from people who worked in the same areas. In some cases, we use the highest recorded dose rate in the areas across the site to assign dose for those workers. Whenever possible, we assign a dose estimate that is much larger than the dose that was actually received.

Bill Murray:

The other lady asked how NIOSH gets other information. Every time a claim is processed and the dose reconstruction is being done, there are two times when the claimant is contacted by telephone. During the first phone call the claimant is interviewed and asked an extensive series of questions about his or her employment. They have an opportunity to give personal exposure information during this interview.



Response:

That person will not have access to exposure data. No matter how many interviews you have by telephone, you cannot reconstruct something you don't have.

Bill Murray:

That is not entirely true.

Comment:

Sometimes it is the spouse on the phone because the worker has passed away. How would a retiree's wife know where he worked?

Bill Murray:

That can be a problem. Because the work here was classified, the spouse often knew very little about what kind of work was done. If the worker can give a job title, even if they do not have an exposure record for that time, we can look at other workers with the same job title or in the same part of the plant and make some assumptions that will yield the maximum dose possible. When Congress wrote this law, they said it had to be scientifically based. That is why there has to be a dose reconstruction that is calculated in such a way that it gives the claimant the highest radiation dose possible in an effort to help the claimant get the compensation. Congress specified this in an effort to be "claimant favorable," which often means that the worker is assigned an estimated dose even though it appears there was none.

Response:

Not always... Why can't you get it one-on-one though?

Bill Murray:

It is one-on-one – the telephone interview is conducted with the claimant so he or she has a chance to give any information they have regarding his or her personal exposure history.

Response:

A face-to-face one-on-one...

Bill Murray:

That is impossible. More than 21,000 claims have been sent to NIOSH for dose reconstructions.

Response:

Some people have difficulty with a phone interview, especially if they have a deceased spouse.

Bill Murray:

The interview is typed up verbatim and is sent to the claimant for review. Then the claimant is given the opportunity to agree or disagree, or to give additional information. Until he or she approves the transcript of the interview and signs off on it, the radiation dose reconstruction will not be processed and there will be continuing discussions until the report is approved.

Comment:

I had a one-on-one with a Department of Labor attorney. If I want another one-on-one with another attorney, will it be a NIOSH attorney or will it be another DOL attorney?

Bill Murray:

It probably depends on the stage of the claim. If the dose reconstruction is complete and the claim has been rejected by the DOL, there is an adjudication branch and you can resubmit the claim.



Response:

There is more cancer now. Will it be handled by a NIOSH attorney or a DOL attorney?

Bill Murray:

Then you can resubmit the claim. When NIOSH gets the information from DOL on the additional cancer, they will calculate a radiation dose for that organ and the results of the two dose reconstructions will be added together and you will get another dose reconstruction report. If the total dose for both claims shows that it is at least as likely as not that the cancers were caused by radiation, NIOSH will make a recommendation to DOL that the claim be awarded. The DOL then will make a final decision.

Comment:

If you look around the room here, probably ninety-five percent of us were worker bees. I think you need to really make an effort to talk with the administrators. In the late 1980s when the Tiger Team Report was written, they tightened up the safety. God knows what it was before that. The rules were different for the thirty years previous to that. Things changed very drastically. They admitted that the dosimeters that were used in the early years were not sensitive enough. To apply the numbers after the 1980s backwards, you really can't do that because things were tightened up after the Tiger Team Report. Safety measures were much tighter after that.

Bill Murray:

NIOSH looks at the sensitivity of the technique – whether it is a film badge or a TLD (thermoluminescent dosimeter) – to measure external dose or a bioassay urinalysis to measure internal dose. We know that they could do a better job in the 1980s than they could in the 1950s. But we know what they could do then – and what other labs could do – in terms of measuring a dose back then. So we look at the technique in terms of the period when the data was collected. When we calculate a “missed dose,” specifically because it was below the detectable level in the 1980s and 1990s, it's going to be different for data from the 1950s.

Response:

How do you have any idea of what it was previously? You can't.

Bill Murray:

It is all in the records. You can find it over time, all the way back to the start. We know it's not outrageous because we can compare it with other laboratories.

Response:

All I am saying is that the procedures changed in the late 1980s and you can't extrapolate backwards because the data you're trying to go backwards with is a lot different to start with because it has been tightened up.

Bill Murray:

But we know about the accuracy of...

Response:

But the handling procedures... everything they did was different. It changed.

Bill Murray:

You have to keep in mind that it has to have something to do with the dose reconstruction. What matters is what dose was measured.



Response:

I won't belabor the point. All I am saying is that you need some other folks in this room that really know what changed. Most of the worker bees probably don't appreciate a lot of the things that may have been changed and why they were tightened up. Do you have any of our health physics people here? I'm just saying that you're asking worker bees to evaluate a profile and we don't have a lot of that knowledge.

Bill Murray:

We are not asking you to evaluate their procedures... what kind of methods they used to measure workers' radiation doses. What we are asking you to do is to tell us if all the processes and activities that happened at the plant are described in the Site Description. Do you remember being badged? Do you know when badging started? Not the really technical things, because we know that is not what you were paid to do. You were busy with the day-to-day operations at the plant. You could tell us things like "there was a process being done here in the 1960s that is not in the Site Profile." That is what we are looking for. If you know, for example, that nobody was badged in 1957, or if there was an incident that took place... that is what we are relying on your experiences to find out. I'm not getting very far in my presentation. That is Slide Two.

Question:

Do you have access to all the monitoring information for every individual?

Bill Murray:

The only time that we need an individual's dose records is when there is a claim that requires radiation dose reconstruction.

Response:

Have you found gaps in the records in the claims that you have seen? Are the records complete?

Bill Murray:

The worker may not have been badged all the time, or maybe not at all. He or she may not have had urinalyses. That is why we have to look at whether there is a possibility that this person could have been exposed to radiation. Was he working with radiation sources? If so, we will look at other workers' dose records.

Response (from another attendee):

How do you know where they were working?

Bill Murray:

There is usually a job description. We have the employment records and there is usually a list of job descriptions. At some of the sites it is worse than it is here. In some cases we have to assume that virtually everyone received the highest recorded dose because that is the only assumption we can make. The assumptions have to be reasonable – you can't have worked in another part of the site. If you are in an area where there was a possible exposure, we will assign a maximum dose for you based on what we know. That is the best we can do.

Question:

At what dosage can you assume that the radiation caused the polyp? How many rems does the dose have to measure before they will assume the cancer was caused by radiation?



Bill Murray:

Enough to prove that it is at least as likely as not that radiation is associated with that cancer. I cannot give you an easy answer to that question because cancer is organ-specific. It takes a different amount of radiation dose depending on which organ is affected by the cancer.

Comment:

My film badges always read tenths or 0.04. Can that be of any significance over a period of thirty years?

Bill Murray:

It may be that when we add it all up, and even when additional dose is added for internal exposure, it may be less than likely. Many of the claims are going to be denied.

Comment:

I have had twenty-four skin cancer operations and have been offered a \$150,000 settlement. Ten of my co-workers from the Tool Room have died from cancer. Have their claims been settled?

Bill Murray:

I have no way of knowing if their claims have been settled.

Response:

Then what are you here for?

Bill Murray:

I am not here to talk about individual claims. I am sorry if that is not going to make you happy, but that is not the purpose of the meeting.

Comment:

As people get older, their natural “killer cells” tend to dwindle. In fact, most people only have twenty percent of what they should have. Why hasn’t the government passed on information so people could enhance their natural “killer cells” and not have a problem in the first place? Also there were chelations and other processes done over the years to extract certain types of radiation.

Bill Murray:

... Certain types of radioactive materials or all metals.

Response:

I haven’t seen any information at all come through the DOE or anybody – only on my own research. And there are a lot of them that have been done. I haven’t seen anything.

Bill Murray:

The calculation that we are talking about determines whether your cancer is more than likely to have been caused by your radiation dose is called the “probability of causation,” where the probability is between zero and one hundred percent. If the probability of causation is fifty percent or greater, the claim should be awarded. There have been many studies of people who have worked with radiation or have been exposed in other instances. Those are the data that are put into the model that makes the calculation. It is based on epidemiologic studies of the human population.



Response:

But they don't have any idea what percentage of "killer cells" any one person will have. Who is to say whether the poor, hapless person who comes along and gets exposed to a low dose of radiation will get cancer a few years later? They are trying to measure something of a scientific nature and there is no way in the devil they can do it. You can have plausible answers, but if you dig into it, it doesn't make any sense. You have a lot of science up front, but it is not good science. You have to have basic numbers to have science.

Bill Murray:

We cannot account for that. The only thing that we can go by is the dose.

Response:

What dose? I never wore a meter (dosimeter) the whole time I worked in the plant. I used to go all over the place.

Mark Rolfes:

Bill, do you have a microphone back there you can use? Some of the people back here cannot hear what you are saying. Some of these people have questions about Subtitle E and chemical exposures.

Bill Murray:

I will get there in a minute. Do you want to come up and change the slides when I say "Next?" That is all I can do. I am tied to this. Let me go through the presentation real quickly and then we can get back to the questions.

Mr. Murray relocated to the podium and began the presentation of the Pinellas Plant Site Profile.

Mr. Murray presented an overview of the Energy Employees Occupational Illness Compensation Program Act of 2000 (EEOICPA). All claims are filed through the Department of Labor. Subtitle B provides for compensation for radiation-induced cancers, berylliosis and some silicosis claims. NIOSH handles only the radiation claims. After the DOL receives the claim and verifies employment and medical diagnosis, it is sent to NIOSH for a dose reconstruction. NIOSH established the Office of Compensation Analysis and Support (OCAS) to facilitate the dose reconstruction effort. Due to the large number of claims submitted, ORAU and other contractors have assembled a large team to perform the dose reconstructions and other related tasks.

Mr. Murray gave a brief description of the Subtitle B and Subtitle E claims that are handled by the DOL. Under Subtitle B, a claim for \$150,000 can be filed by a worker who has contracted radiation-induced cancer, beryllium disease, or silicosis (or by the worker's survivors). If the claim is awarded, the claimant's medical expenses related to the disease are also covered from the day the claim is filed. Subtitle E claims are for exposure to toxic chemicals. The site profile information relates only to Subtitle B claims for radiation-induced cancer. EEOICPA was amended in October 2004 to include Subtitle E, which is administered solely by the Department of Labor. NIOSH has nothing to do with Subtitle E claims. If a worker files a Subtitle B for cancer, a Subtitle E claim should be filed as well. If the worker's disease is something other than cancer, DOL will determine eligibility.



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Mr. Murray said that the purpose of the meeting was to discuss the Pinellas Plant Site Profile – to describe what the Site Profile is used for, to ask for suggestions and information, to document comments and issues, and to answer any questions.

The Pinellas Plant Site Profile provides site-specific information that is used by health physicists to reconstruct claimants' radiation doses. The document includes such information as the radioactive materials that were present at the Pinellas Plant, the workers' job descriptions, the dosimetry programs that were in place, the workplace hazards and other information that is necessary to make dose estimates for workers from the site. The dose reconstructors use the Site Profile as a technical handbook to determine the possibility of significant exposure for the workers in the plant based on the types and amounts of radioactive materials handled. Having this information available minimizes the interpretation of data by providing all the dose reconstructors with the same information about radiation exposure at the site. The Pinellas Plant Site Profile was completed in October 2005, but it is a "living document," which means that it can be revised as new information comes to light that could positively impact dose reconstruction.

The Site Profile includes five sections: the Site Description, Internal Dose, External Dose, Environmental Dose, and Medical Dose. The environmental and medical doses are not found in a claimant's dose records. They are "extra" exposures that are calculated and added to a claimant's radiation dose in an effort to be "claimant favorable."

The Site Description describes the facilities and the activities that took place at the Pinellas Plant during operations from 1957 to 1994. It identifies the radioactive materials and the radiation sources as well as the potential occupational radiation exposure. The plant had approximately 750,000 square feet under roof on 100 acres. General Electric Corporation (GE) constructed the plant in 1956 for the development of neutron generators for the nuclear weapons program. GE sold it to the Atomic Energy Commission (AEC) in 1957 and operated the plant under contract to the AEC (later DOE) until 1992. Other components were produced there as well, including Radioisotopically-powered Thermoelectric Generators (RTGs). Martin Marietta Specialty Components took over the contract until the plant was shut down in September 1994. Most of the property was sold to the Pinellas County Industry Council in March 1995. DOE has an ongoing environmental restoration project at the site.

The occupational medical dose is assigned to workers based on medical X-rays given to workers as a condition of their employment. The DOE did not include medical X-rays in a person's dose record, but NIOSH assumes one X-ray per year per worker and assigns a default value for the medical dose in an effort to be favorable to the claimant.

There was no significant source of environmental exposure in the workplace. A default ambient radiation dose is assumed for non-monitored workers who may have received low-level exposures.

For the internal dose program, we have information for the entire period of operations at the plant from 1957 to 1994. We know what bioassay methods and practices were used to measure radiation doses inside the body. All of the bioassay at the Pinellas Plant was done by urinalysis. We also look at the minimum detectable levels (MDLs), and where the bioassay results fall



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below the MDL, a “missed dose” is calculated and applied to the claimant’s radiation dose. The primary sources of internal radiation exposure were tritium (metal tritides) and plutonium-238 and -239. Intakes for unmonitored workers are calculated based on bioassay technology and co-worker data.

The External Dose section includes information on the sources of exposure, the types of dosimeters used, the methods and practices that were in place, and the minimum detectable levels. The dosimetry measured whole body dose for beta, gamma and X-ray radiation from 1957-1974 and again from 1983-1997. Finger dosimeters were used in the plant during the same time periods. Wrist dosimeters were used from 1974-1997. Monitoring was done for neutron dose from 1957 to 1994. Information is included in the profile regarding badge exchange frequency, as well as information for calculating “missed dose.”

Mr. Murray concluded by saying that developing a comprehensive site profile is an important task. NIOSH and ORAU encourage workers from the site to share their knowledge of the daily operations of the plant to fill in the gaps in the records from DOE and its contractors. Comments on the site profile are welcome, as well as information and suggestions. These can be sent directly to NIOSH using the contact information included in the presentation. More information on EEOICPA claims and statistics can be seen on the Office of Compensation Analysis and Support website at <http://www.cdc.gov/niosh/ocas>.

Mr. Murray reviewed a list of comments and concerns that were raised at the September 2, 2004 Pinellas Plant Site Profile introductory meeting (see attachment A). The list was distributed to the Attendees at the beginning of the meeting.

Question:

It seems that some claims take a very long time to be resolved. When you go to these meetings, are people from other sites frustrated with how long it is taking to get compensation?

Bill Murray:

There is a lot of frustration about how long it is taking to process the claims.

Response:

We have people dying left and right here that worked at the plant.

Bill Murray:

Many of the workers from the 1940s and 1950s are no longer with us. We have encountered some frustration about the dose reconstruction process and how long it takes to process a claim. This is the only site where we have met with a large group like this, and that is primarily because a union was not involved. We usually meet with union officials, and they try to bring in people who they think can tell us about the site. I am not saying the frustration is any higher here. I am sure people are frustrated everywhere. Keep in mind that when this program was first announced, some people got the idea that everyone who filed a claim was entitled to the award. They thought that all they had to do was sign up and they would get their checks. But this is a compensation program and there is a verification process to determine that the health problem is related to the claimant’s radiation exposure.



Question:

Is the fifty percent number that determines whether the claim is awarded part of the law or is that part of the administration? Is it part of the actual federal bill? If the cancer has to be more likely than not, where does the fifty percent number come from?

Bill Murray:

The fifty percent comes from your radiation dose.

Response:

No, that is not what I meant. Who decided that fifty percent number? I am not asking how you got the fifty percent value. I want to know who decided that the probability of causation had to be fifty percent or more. Is that actually in the bill?

Bill Murray:

The legislation says more than likely, which is fifty percent or higher.

Response:

What bill number is that? I would like to read that bill.

Bill Murray:

The bill is on the website.

Response:

So NIOSH actually decides if the number is fifty percent or more.

Bill Murray:

The dose reconstruction is used to calculate the probability of causation.

Response:

But NIOSH decided the fifty percent number.

Bill Murray:

“More than likely” is interpreted as more than fifty percent probability of causation when we make the calculation.

Response:

But that is a decision that is made at your level.

Response (from another attendee):

More than likely means more than fifty percent. Think of it as a controllership where you have to have more than 50% of the stock to be in control.

Bill Murray:

When I went through the presentation, I said that we have to make a calculation that shows that it is more than likely that a claimant’s radiation dose is associated with the cancer. The dose information is input into a computer model that shows the likelihood to three decimal places. The gentleman asked who decided that it should be fifty percent and the answer is that Congress said “more than likely” which is interpreted as more than fifty percent.

Response (from the attendee who asked the question):

But couldn’t that be interpreted as saying that the award is made to the percentage of likelihood, so that if the probability was 30% the award would be made based on that number?



Mark Rolfes:

The fifty percent was mandated by Congress. That is the way the law was written. Unfortunately, NIOSH...

Response:

Are you saying that the law says fifty percent?

Mark Rolfes:

Yes. It says that the employee's cancer must be "at least as likely as not" (50% or greater chance) caused by the occupational radiation exposure received. The probability of causation guidelines and dose reconstruction rule are in 42 CFR 81 and 82. Those are both on our web site. If you have any other questions about the regulations or a specific claim, I would be more than happy to answer those.

Question:

When am I going to get a chance to ask you about my statement? I have some questions about my dose reconstruction report.

Mark Rolfes:

I can help you with that at the end of the meeting after we answer the questions these folks have about the program.

Question:

Isn't there a different part of this law for illness from chemical exposure?

Mark Rolfes:

The EEOICPA has a separate subtitle for compensation for chemical exposure. The DOL looks at claims for diseases caused by toxic chemical exposures in much the same manner as we look at the Subtitle B claims for radiation exposures. NIOSH only deals with the radiation exposures for the dose reconstructions. If you haven't filed a claim for Subtitle E, I encourage you to do so.

Response:

Where do we file claims?

Bill Murray:

In the left pocket of the presentation folder, there is a sheet with contact information for the DOL Resource Center in North Augusta, South Carolina that handles claims for this region. There is a toll-free number you can use to contact them.

Question:

(Question is inaudible. The subject of the question seems to be related to the presence of tritium (metal tritides) at the plant.)

Bill Murray:

I think you are talking about the metal tritides. Under certain conditions, tritium binds itself to heavy metals like titanium, uranium and platinum. I will let Paul explain the problem.

Paul Demopoulos:

There is not much information in this document about metal tritides. We are looking at the whole DOE complex. Here at the Pinellas Plant, you worked with the metal tritides in neutron tubes. There could have been potential exposure: if one of the neutron tubes was broken, the metal tritide form of tritium could have been released. But the bioassay technique that was used was



for tritium, which is tritiated water, and that type of monitoring does not work with metal tritides. We are working on this issue separately. When we come up with an approach, we will revise the Site Profile. If it potentially affects any claims, then we will have to rework each claim.

Response:

Are you saying that you had trouble determining the extent of the exposure from the metal tritides?

Paul Demopoulos:

The proper bioassay technique was not used to monitor for the metal tritides. The tritide levels were not being monitored. Even today, metal tritides are not being monitored within the DOE complex. It is being monitored indirectly from air sampling measurements, but not from bioassay.

Comment:

I worked in the Calibration Maintenance Program and tritium was frequently found in the ion pumps. Will I be notified when you find out (about the metal tritide sampling issue)? Right now, I am healthy but what if I would become ill?

Paul Demopoulos:

When we change the Site Profile, we will notify everybody. This is a “living document” so future information can affect a change; sometimes on a technical basis, sometimes if more facility information becomes available.

Bill Murray:

Dose reconstructors have additional documents besides the Site Profile to use as guidance to help them reconstruct the claimant’s radiation dose. These technical information bulletins are written to address general issues found at sites across the DOE complex. There is an entire document that discusses how to handle exposures and radiation doses for tritium because the same bioassay techniques were used all over. The document does not address the tritide forms because nobody really understands how the body processes them.

Response:

They didn’t address it, but that information does exist someplace.

Bill Murray:

We are looking for it. We are trying to figure out the biology of it.

Response:

One more thing on the maintenance end of it – what about the old oil system for tritium?

Bill Murray:

They seem to be able to handle that. Tritium in oil – is that a problem – in grease?

Paul Demopoulos:

That could be a potential issue, but it is not addressed in the Site Profile.

Bill Murray:

It is not in the site profile?

Paul Demopoulos:

It is not in the current Site Profile.



NIOSH Dose Reconstruction Project Rollout Meeting for the Pinellas Plant Site Profile

Comment:

In the early days, one of the biggest problems we had was called flaking. That was when these metal tritides

Mark Lewis:

This is a what it is all about... the workers bringing information that is not found in the site profile and getting it to someone who can look at it and consider if it would have an effect on a claimant's dose reconstruction. This is exactly why we call the site profile a "living document." Your input can make a difference to someone. If you have any other information that you feel could be important in the dose reconstruction process, you should send it directly to NIOSH so it can be placed into the hands of the proper person.

Question:

Do you know who would have a copy of the site survey that was done when the county bought the property? Who would have a copy of the environmental survey of the building and grounds?

Mark Lewis:

The property was sold to the county. Pinellas County should have that information.

Question:

What about the film badges in the hallways? Are they mentioned in the Site Profile? There were film badges assigned to individuals and there were also film badges in the hallways.

Bill Murray:

Those were controls for external dosimetry.

The afternoon session adjourned at approximately 2:45 p.m.

Attachments:

Attachment A: Comments Made at the Pinellas Plant Site Profile Introductory Meeting Held on September 2, 2004 and Comment Response in the Site Profile



Discussion Session/Questions and Answers

6:00 p.m. Session

This session of the presentation of the Pinellas Plant Site Profile was the same as the presentation given at the 1:00 p.m. session.

Question:

Do you have to have a medical condition to file a claim?

Bill Murray:

The legislation requires that the claimant must have a medical condition that is more than likely related to the occupational radiation dose he or she received while working at a DOE or AWE site within the nuclear weapons complex. The program is not an entitlement. There must be a dose reconstruction for the claimant that is figured by putting the radiation dose information into a computer program based on radiation risk models developed by the National Cancer Institute (NCI) to determine if the claimant's radiation exposure was more likely than not to have caused the illness. If the probability is fifty percent or higher, the claim will be awarded. If it is less, it will not be recommended for approval.

Question:

How is toxic exposure determined?

Bill Murray:

That is determined by a panel of physicians.

Question:

Are certain types of cancer more likely to be caused by radiation than others?

Bill Murray:

There is no evidence that chronic lymphocytic leukemia is related to cancer. Prostate cancer is also difficult to prove.

Question:

Why do breast cancer and lung cancer qualify when others do not?

Mark Rolfes:

Some cancers are radiogenic and others require larger amounts of exposure to meet the 50% probability of causation criterion. Some cancers, such as certain types of leukemia, can take very little radiation exposure to reach 50%. And some types of cancer require larger amounts of radiation exposure due to the higher natural occurrence in unexposed populations. For lung cancers, smoking information is considered because it has an affect on the probability of causation. The time between exposure and onset of the cancer is also considered – the latency. Sex, age, type of cancer, number of cancers, type of exposure, length of exposure--there are many factors involved in calculating the probability of causation.

Question:

Where does the fifty percent rule come from?



Mark Rolfes:

The 50% probability of causation rule is in 42 CFR 81. The dose reconstruction must assess whether the employee's radiation exposure over time is "at least as likely as not" to have caused the cancer. If there is any uncertainty in the employee's radiation dose – i.e. missing or incomplete monitoring information – NIOSH makes claimant favorable maximizing assumptions to give the claimant the benefit of the doubt.

Question:

How do you determine how much radiation exposure a worker received? Do you have records?

Mark Rolfes:

We have records of an employee's work, external dose monitoring, internal dose monitoring, and process information that can be used to estimate dose. When the records are not complete, we use can assign unmonitored and missed dose, distributions of co-worker data, source term data, and overestimating assumptions to determine the worker's dose.

Question:

Can we determine if you have these records?

Bill Murray:

NIOSH only requests a worker's dose records when a claim is filed.

Comment:

In the early years, there was very little monitoring. Facilities employees worked all over the plant and were not monitored.

Mark Rolfes:

We know that monitoring data from the early years was often inadequate or incomplete. NIOSH uses claimant-favorable assumptions about potential radiation exposures in order to assign exposure when an employee is not monitored. For unmonitored workers outside of a radiation area, we can use the highest ambient exposure rates to assign radiation doses. For radiological workers, source term estimates can be used, along with co-worker data, and other methods to reconstruct an employee's occupational dose. In these cases, the dose estimates assigned by NIOSH exceed the actual dose a worker may have potentially received.

Comment:

We were told that the dust was the most hazardous thing to watch out for – that it was extremely hazardous.

Question:

Do you foresee an end to the information-gathering process?

Bill Murray:

We will continue to look for information as long as gaps remain that need to be filled.

Comment:

I started working in Maintenance about 1964 or 1965. In the early days, there was virtually no monitoring. We were not asked for bioassay specimens very often.



Question:

If a person happens to develop cancer, how can you determine if the cancer was caused by radiation?

Bill Murray:

The best thing to do is file the claim and let NIOSH do a dose reconstruction.

Question:

Do you file an additional claim if you develop an additional cancer?

Mark Rolfes:

If an additional primary cancer is added to the claim after the initial dose reconstruction was completed, NIOSH will conduct a new dose reconstruction (following DOL's re-work request) which evaluates all of the DOL-verified primary cancers.

Bill Murray:

They will add the new medical information into the existing claim.

Comment:

In Building 200, the ventilation system contained HEPA filters. When Operations cleaned these filters, they swept the debris into plastic bags. Some of it got into the air and raised particulate contamination.

Paul Demopoulos:

Please send us that information. It may change the Site Description and External Dose sections. We did not have a reference to that.

Comment:

We detonated generators – did destructive testing. This raised a lot of neutron radiation dust. We used “boom boxes” (steel boxes) to enclose the explosion. I have lots more information. After the test, the boom box was opened, and the contents were swept into a plastic bag using a small brush and a dust pan. No respirators or protective equipment was used; we were just told to “be careful.”

Paul Demopoulos:

We did not have any information on this either. Please send it to us.

Mark Rolfes:

This is the kind of information that we need to make the Site Profile more comprehensive.

Comment:

I also worked during the disassembly of Area 8. We were in there with no protective equipment. I watched it get leveled to the floor. The only thing they did to isolate the area was to hang plastic sheets from the ceiling to the floor. Has anyone contacted the contractors that did the demolition between 1996 and 1997?

Paul Demopoulos:

That is outside the covered time period.

Mark Rolfes:

Residual contamination is covered through 1997.



Paul Demopoulos:

The decommissioning period is 1995 to 1997. The surveys were done as part of the decommissioning plans.

Bill Murray:

We have to conduct outreach with the construction workers on a different level. We work through the Center to Protect Workers' Rights (CPWR) to meet with the Building and Construction Trades Councils to reach those unions. There is a separate document to cover those workers. I am not sure if demolition and decontamination workers are included. The issue has been identified and taken back to get direction. It is not an easy task to do this where there are no records.

Comment:

I went back to help with the decommissioning. I didn't see anybody monitoring anything. The dust was so thick you could cut it with a knife.

Comment:

Can I e-mail my comments on this to NIOSH? A survivor asked me some questions on this. Will the information I give help others?

Bill Murray:

Yes. NIOSH uses the information to do the dose reconstructions. The information goes back to the DOL for a final decision.

Question:

Is there mention of cesium-137 in the Site Profile?

Paul Demopoulos:

Yes.

Question:

How do you handle a badge reading where there wasn't a recorded dose because it was blasted to pieces from a maximum dose?

Bill Murray:

A "missed dose" is applied in that situation.

Mark Rolfes:

We look at the source term, process information, and telephone interview information along with claimant-favorable assumptions in order to assign a radiation dose.

Bill Murray:

The dose reconstructors also look for trends on both sides and can assign the same dose for that period – they plot the exposure over time.

Comment:

During the D & D period, the Health Physics Department took swab samples and numbered where they swabbed. They monitored for external exposure. There was dust everywhere.

Bill Murray:

We make maximizing assumptions based on the data that we have to favor the claimant.



NIOSH Dose Reconstruction Project Rollout Meeting for the Pinellas Plant Site Profile

Question:

When does the telephone interview happen?

Bill Murray:

The telephone interview happens after the claim is turned over to NIOSH. Dose reconstructors consider the information from the phone interview during the dose reconstruction. The flowchart in the presentation folder describes the process.

Question:

Has anyone talked to (*name withheld*) from the Health Physics Department?

Mark Lewis:

You have given us information here tonight that will change the Pinellas Plant Site Profile. Worker input makes the document more comprehensive and can make the outcome of the dose reconstructions better for everyone. Is this a perfect law? No. But it is better now than ten years ago when there was nothing. Thank you for coming out tonight and speaking with us.

Bill Murray:

The NIOSH Fact Sheet in the folder has the NIOSH contact information. Please use it to send your information directly to NIOSH. Thank you very much for being here.

The evening session adjourned at approximately 7:30 p.m.



NIOSH Dose Reconstruction Project Rollout Meeting for the Pinellas Plant Site Profile

Attachment A: Comments Made at the Pinellas Plant Site Profile Introductory Meeting Held on September 2, 2004 and Comment Response in the Site Profile

Comment	Response
Maintenance workers and electricians had to go in and out of Area 8 of Pinellas without film badges and the only protective measure taken was to issue a change of clothing.	In Section 6.1.2, it says that approximately 20% of the site workers were badged and that no documentation was found that shows all employees were monitored at any time. The Site Profile will be changed to note that maintenance personnel at Pinellas were never badged.
Pinellas welders went twenty-seven days without protection after Geiger counters detected a leak.	When doing a dose reconstruction, it is assumed that protective equipment was not used.
There was Krypton-85 in the RadaFlow system at Pinellas.	This information is in Section 2 of the Site Profile.
Uranium-237 and ionic accelerators were used at Pinellas in building 800 to calibrate monitors.	No information was found to confirm this comment.
At Pinellas, there was high-energy diagnostic x-ray equipment in the lab that would emit x-ray type doses but at higher rates.	A listing of x-ray producing equipment used at Pinellas is presented in Table 6-1.
Pinellas workers in the hood rooms in area 108 provided urine samples daily.	Information on the frequency of bioassay sampling is presented in Section 5.2.4 and this comment confirms that information.
Radioisotope Thermoelectric Generators were welded and encased in three different envelopes. They were delivered to the plant that way, incorporated into a product, then shipped.	This information is in the Site Profile.
The testing of neutron generators was done in a PT39 unit tester. Pinellas workers did not know if they were leaking until after the test was completed and the badge showed an overdose. Tubes were put in a chamber with frozen Freon which resulted in chemical exposure as well.	This is not enough information to warrant a change to the Site Profile. Exposure to chemicals is outside the scope of the Site Profile.
Pinellas workers were not aware of any gamma-ray monitoring.	Gamma-ray monitoring was performed at Pinellas as shown in Table 6-5.
Comment	Response



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<p>X-ray diffraction units were brought to the Pinellas plant around the 1980s and were likely to have been operated for as long as they were building tubes in the plant.</p>	<p>A listing of x-ray producing equipment used at Pinellas is presented in Table 6-1.</p>
<p>After contamination was tracked down the hallways, the halls would then be blocked off for cleaning, which consisted of nothing more than repeated washings. The water was dumped directly into the drains to go into the tanks. There were no precautions for contaminated water.</p>	<p>Section 2 of the Site Profile discusses the sanitary drain system at the Pinellas Plant. Potential exposures due to radioactive materials in the sanitary drain system were accounted for in Section 4.</p>
<p>Pinellas workers in the potting area were given urinalysis weekly.</p>	<p>Information on the frequency of bioassay sampling is presented in Section 5.2.4 and this comment confirms that information.</p>
<p>Urinalysis was performed every 3 months in RTG areas.</p>	<p>The Site Profile states that urinalysis was performed on workers in the RTG area annually.</p>
<p>X rays were taken every 5 years for workers younger than 40 and every 3 years thereafter. Most x rays were done facing the wall (away from the machine); side x rays were taken occasionally.</p>	<p>Section 3 of the Site Profile discusses the frequency and type of medical x-rays at Pinellas and this comment confirms the information in Section 3.</p>
<p>The X-ray machine that was used at Pinellas was most likely the original GE model from 1958. It was never replaced.</p>	<p>Section 3 of the Site Profile discusses the equipment used for medical x-rays at Pinellas and this comment confirms the information in Section 3.</p>
<p>In 1997, they used swabbing to determine if an area was contaminated. This work was contracted to Martin Marietta (Lockheed) so the Pinellas plant workers were not involved.</p>	<p>This occurred after DOE rad material handling operations ceased and is not relevant to the Site Profile.</p>
<p>Pinellas employees who supported equipment near the linear accelerator activities were not badged either.</p>	<p>In Section 6.1.2, it says that approximately 20% of the site workers were badged and that no documentation was found that shows all employees were monitored at any time.</p>
<p>Some Pinellas employees reported that the final unit stages of the Radioisotope Thermoelectric Generators were handled bare-handed.</p>	<p>There was no documentation found that verified a release or emission of plutonium from the RTG facility. The RTG capsules were warm due to the radioactive materials contained in the capsules.</p>
<p>Comment</p>	<p>Response</p>



NIOSH Dose Reconstruction Project Rollout Meeting for the Pinellas Plant Site Profile

Krypton-85 leak detectors were used from the late 1970s to the end of production.	This source is addressed in Section 2.
Pinellas workers were not issued wrist or ring dosimeters.	Information was found that presents the technical specifications and usage times (Table 6-5) for wrist and ring dosimeters at Pinellas.
There were neutron exposures in different areas of the Pinellas plant prior to the 1960s. The nature of the generator is to put out neutrons; there was even more neutron output during testing.	Table 6-5 details the dosimetry used at Pinellas from 1957 until DOE operations ceased. There was no neutron monitoring prior to 1974.
Bioassay samples were required weekly for people working on the exhaust hoods.	Information on the frequency of bioassay sampling is presented in Section 5.2.4 and this comment confirms that information.
A Pinellas employee is aware of X-ray producing equipment that was used included an electron beam welder (used from 1957 to 1994); an electron microprobe (as early as 1961 until 1966); x-ray fluorescence units (1970s); and x-ray diffraction units (1970s until 1992).	A listing of x-ray producing equipment used at Pinellas is presented in Table 6-1.

Most common comments

- Dosimetry – badges and urinalysis
- Site description – activities, processes, sources, exposures
- Personal protective equipment
- Ventilation
- Contamination monitoring
- Medical X-ray
- Other