



NIOSH Dose Reconstruction Project Meeting on the K-25, ORNL, and Y-12 Site Profiles

Meeting Date:

April 5, 2005

Meeting with:

Security, Police, and Fire Professionals of America

International Guards Union of America

Attendees:

Tommy L. Spakes – K-25, Wackenhut Services

Joe Richards – Y-12, International Guards Union of America

NIOSH and ORAU Team Representatives:

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

Richard “Dick” Toohey – Oak Ridge Associated Universities (ORAU)

William “Bill” Murray – ORAU

Melissa Fish – ORAU

Vernon McDougall – Advanced Technologies and Laboratories International, Inc. (ATL)

Mark Lewis – ATL

Jay Maisler – Integrated Environmental Management, Inc.

Proceedings

Mark Lewis began the meeting at 4 p.m. by introducing himself and requesting that everyone around the table introduce themselves as well. Mr. Lewis indicated that the meeting would be recorded to capture the concerns and comments voiced, but that individual union representatives who commented would not be identified by name.

LaVon Rutherford explained the importance of worker input into the site profiles. Bill Murray stated that the purpose of the meeting was to discuss the Site Profiles that were developed for the Oak Ridge Gaseous Diffusion Plant (K-25), Oak Ridge National Laboratory (ORNL), and the Y-12 National Security Complex. Mr. Murray said that it is important that the site profiles have input from workers and former workers at these sites.

Mr. Murray briefly described the two types of claims that can be submitted to the Department of Labor under Subtitle B and Subtitle E of the Energy Employees Occupational Illness Compensation Program Act (EEOICPA). The development of the site profile documents is related to Subtitle B.



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Mr. Murray explained that Congress gave NIOSH the responsibility for dose reconstruction under Subtitle B of EEOICPA. NIOSH established the Office of Compensation Analysis and Support (OCAS). Because of the magnitude of the task, NIOSH contracted with the Oak Ridge Associated Universities (ORAU) to support the dose reconstruction project.

Dr. Toohey stated that the ORAU Team has provided NIOSH with approximately 9,100 draft dose reconstruction reports. About 600 of those are currently in the hands of the claimants for their review. Approximately 7,700 reports have been judged as final reports and sent to the Department of Labor (DOL). NIOSH has received approximately 18,400 claims from DOL.

Mr. Murray stated that the EEOICPA was signed into law in December 2000. The DOL began accepting claims in July 2001. In September 2002, the ORAU Team was awarded the contract to support radiation dose reconstruction. In October 2004, EEOICPA was amended so that all claims (including those for toxic chemicals) now go to DOL.

Mr. Murray said that the site profiles support dose reconstruction. They are historical documents that discuss the activities, processes, and buildings, the dosimetry programs, environmental releases, and the medical x-ray programs. The site profiles provide site-specific technical information used by health physicists to reconstruct radiation doses. Using site profiles minimizes the interpretation of data. They are revised when new information is obtained.

Each site profile consists of five independent sections: Site Description, External Dosimetry, Internal Dosimetry, Occupational Environmental Dose, and Occupational Medical Dose. All site profiles go through a rigorous review before they are approved by NIOSH. Site Profiles for the Oak Ridge Sites are available on the NIOSH website: www.cdc.gov/niosh/ocas/ocastbds.html.

Mr. Murray stated that the Site Description section of a site profile provides a general overview of the facilities and activities at that site from the time when the site were first opened. It documents the radioactive materials and the radiation sources present at the site, and identifies the potential radiation exposures.

The External Dosimetry Section includes information on methods and practices used by the site over the years, whether or not adjustments to recorded occupational dose were made, and minimum detectable levels. Mr. Murray explained how minimum detectable levels are used to calculate missed dose. When a worker's official dose record shows many zeroes, a portion of the minimum detectable level is assigned to the claimant. Assigning a missed dose is one example of how NIOSH is trying to be claimant favorable. Regarding the External Dosimetry Program at the three Oak Ridge sites, Mr. Murray said that NIOSH is aware of the dosimeter technology that was used, how often the badges were exchanged, workplace radiation fields, and worker locations around the radiation sources. It is important to remember that the External Dose section is geared toward workers who were in the monitoring program. The Department of Energy (DOE) provides NIOSH with the worker dose records. As opportunity provides, additional dose is then added to the worker dose records.



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Question:

Are DOE records adjusted?

Bill Murray:

No, DOE records are not adjusted. What happens is that NIOSH adds the missed dose to the reported dose, which results in a higher calculated dose for the claimant.

LaVon Rutherford:

NIOSH also uses records to look at patterns or changes that indicate changes in worker exposures.

Question:

How is the situation handled for a guard who was not working directly with radiation but was always in the surrounding area where radiation work was taking place?

LaVon Rutherford:

As Bill mentioned, if the guard records indicated readings of zeros, the guard would be assigned missed dose.

Bill Murray:

Decisions would be made based on the activities that were taking place at that time, co-worker data, and the technology in place at that specific time. We have heard that at some sites, workers were told to place their badge inside a lead box before entering a radiation area. If NIOSH observes zeros when a series of zeros is not expected, there is guidance in place for the health physicist performing the dose reconstruction to consider adding missed dose.

Comment/Question:

We worked in areas of Y-12 where they performed x rays and the Geiger counter probe was wrapped in lead. Why would the probe be wrapped in lead?

Bill Murray:

Geiger counters are not typically used to take measurements around an x-ray machine.

LaVon Rutherford:

Typically a shielded probe would be used to keep background exposures out while performing surface contamination surveys. I am not sure about that particular situation that you mentioned but perhaps they were trying to measure surface contamination.

Mr. Murray described the Internal Dosimetry section, which includes information on the methods and practices used at the site, the sources of exposure, the minimum detectable activity for whole body counting and urinalysis, as well as reporting levels. The minimum detectable activity for internal exposure is used in the same way that the minimum detectable level is used for external exposure.

- At the Oak Ridge National Laboratory, the bioassay program started in 1947. Urine and fecal samples were analyzed for selected radionuclides which included fission products,



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uranium, and transuranics. Gamma-emitting radioactive materials were measured inside the body with whole body and lung counters starting in 1959.

- At Y-12, urinalysis began in 1948 for uranium, plutonium, tritium, americium, neptunium, and thorium. Fecal analysis began in the 1960s. Chest counting began in 1961. Mr. Murray reminded the group that NIOSH and the ORAU Team are currently in the process of updating and revising the Y-12 Site Profile because new information has been located. There will be significant changes regarding recycled uranium, thorium, U-233, and tritium.
- At K-25 the Bioassay program started in 1945. Urine was tested for uranium. A lung counter was used in 1958 and from 1965-1995, and the whole body counter from 1960-1980.

Jay Maisler added that the ORAU Team is just now getting access to documents in the K-25 security vault. As a result, many default assumptions were made throughout the K-25 Site Profile. However, it is important to understand that the default assumptions that were made were claimant favorable.

Question:

How often is the urinalysis test required?

LaVon Rutherford:

The frequency of urinalysis depends on the areas where the employee works and the likelihood of an internal exposure.

Jay Maisler:

I am guessing that back in 1945, the reason they were doing uranium analysis was not for radiological purposes but to test for uranium toxicity. The radiological hazards of uranium were not appreciated early on.

Mark Lewis:

Back in the 1970s, the urinalysis program at Portsmouth was flawed because the testing depended on the location of employee lockers and not where employees were actually working. Over time, those methods changed.

LaVon Rutherford:

Later it became the practice that if you were likely to receive an internal exposure dose of 100 mrem or greater you would be put into a routine urinalysis program.

Bill Murray:

If you know of particular exposures that were occurring and urinalysis was not being performed, that is the type of information that NIOSH needs to have.

Comment:

The thermoluminescent dosimeters (TLDs) for guards at K-25 always read zero. Because they have always worked in every building on the site, the guards do not believe the paperwork that they receive regarding their exposures.



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Comment:

At one time, all Y-12 workers received TLDs. But later that practice changed. There are many people who think that all workers at Y-12 should have TLDs.

Comment:

Although the guards were in the same areas with the production workers who were wearing protection, the guards did not receive protection.

Mr. Murray said that people who were not in the monitoring program could still be exposed to radiation due to radioactive materials in the air, radiation sources in the buildings, and radioactive materials in the work environment. Site-wide monitoring data are used to determine the environmental external dose for unmonitored workers. The average annual exposure rates were 0.03 to 0.46 mR/h at Oak Ridge National Laboratory, 0.0074 to 0.0105 milliroentgen per hour (mR/h) at K-25, and 0.013 millirem per hour (mrem/h) at Y-12. The annual exposure rates are used to assign environmental dose to workers who were not in the external dosimetry records. The same is true for environmental internal dose. The annual intake of radioactive material is calculated from the average annual air concentration.

Mr. Murray explained that NIOSH also adds an occupational medical radiation dose. When calculating the medical dose, the frequency of employer-required x rays is considered as well as the type of x-ray equipment and techniques that were used. Mr. Murray explained that the x-ray equipment changed over time and that older equipment emitted more x-ray radiation which resulted in higher worker doses.

In conclusion, Mr. Murray said that developing a site profile is an important task and that the site profiles can be changed based on worker input. Comments on the site profiles should be sent directly to NIOSH. Mr. Murray provided the mailing address, email address, and fax number for NIOSH.

Mark Lewis thanked everyone at the meeting for taking the time to attend and for their comments.

Discussion Session

Comment:

A lot of people have seen a lot of things, and it is difficult to contact everyone to get their input. Many people do not have access to a computer, or if they do, many workers are not computer savvy. It is important to contact as many individuals as possible, but we do not have the resources (money and manpower) to contact every person. We have a database of names that we are willing to provide to NIOSH to help with the effort of contacting former workers for their input. There are many former workers with a lot of knowledge that are not aware that NIOSH wants worker input, so those former workers need to be contacted. We request help in contacting former workers.



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Comment:

In addition to being fearful about talking about their personal exposures, many people worry that they could be discussing classified information.

Mark Lewis:

Do you think that there is a need for workers to meet with security cleared personnel?

Comment:

Workers do not trust anymore, and are not willing to provide information because it is difficult for workers, especially retired workers, to know what they can say. NIOSH, DOE, and the appropriate contractors need to get together and let workers know that it is okay for them to talk and that they no longer need to remain silent.

Comment:

Workers were told to not go into places wearing their monitor—that they needed to take it off before entering.

Comment:

Some of the places where workers spent all of their working hours are now closed due to contamination.

Comment:

Security officers and guards have been left out of the dose reconstruction equation.

Comment:

Putting some type of notification in the newspaper is one way of raising awareness and getting input from former workers.

Comment:

I would like to see some Q-cleared people go on site and interview some of the workers. Would that be possible?

Richard Toohey:

Yes, that is possible. A requirement is that we prepare a transcript of the talk and the transcript goes through a classification review. Another important thing to remember is that, for each claimant, there is a telephone interview process in which secure interviews can be and have been set up.

Comment:

I believe that you would get a lot more participation if you would perform these individual interviews at the site itself.

Comment:

There were releases at Y-12 that took place and workers were exposed. However, all of those workers and those exposures have not been put into the dose reconstruction equation. The perception among workers is that it is very likely that they were exposed.



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Question:

Is there any way that NIOSH could send out mailings and make the effort to contact all former workers to get their input?

LaVon Rutherford:

We would have to work with our contractor to see what we can do. I am sure that we can do something; we will just need to determine what will be most effective.

Comment:

I suggest that you continue with the Site Profile meetings, but that you also make time to go to the site and speak with the workers because the truth is that people, workers and contractors included, do not know about this program.

Comment:

A key issue is that the programs and contracts at the sites do change over time. Therefore it is extremely important that DOE, NIOSH, and the National Nuclear Security Administration (NNSA) begin speaking together and sending the same message.

Question:

Who do I need to contact to make sure that the issue of NIOSH contacting former workers moves forward?

LaVon Rutherford:

I will take this issue back with me.

Question:

To make this work effectively, what kind of support can we get from NIOSH in regard to contacting former and current workers?

Comment: *(The commenter provided two internal K-25 documents to Jay Maisler.)*

One of the documents I am providing is an internal memo and the other is a training document. The only requirement for guards patrolling in the K-25 Building in 1987 was to wear work issued boots.

Comment:

It appears to me that trust and getting the word out are important issues in regard to the Energy Employee Occupational Illness Program. Because of everything that has happened in the past, people do not trust DOE.

LaVon Rutherford:

It is important that people understand that we are not hand-in-hand with DOE. NIOSH is completely separate from DOE.

Comment:

I am aware that Sanford Cohen and Associates (SC&A) was hired to perform an audit of the program and that SC&A does not agree with NIOSH. Who should we believe?



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LaVon Rutherford:

The sad part of the discussion that took place between SC&A and NIOSH is that it was all aired in a public format. That was not completely appropriate. It is important to recognize that SC&A are not necessarily saying that everything NIOSH has done is wrong. They are looking at ways that they feel that NIOSH could make adjustments. It came off as NIOSH is wrong, but that is not necessarily true.

Comment:

Well that is not how I took it. I took it as NIOSH is wrong. At the Advisory Board meeting when this was aired, I saw a huge conflict that might as well have been a fist fight between NIOSH and SC&A. Anyone could have been at the Advisory Board meeting. It was not good publicity.

LaVon Rutherford:

NIOSH, ORAU, and SC&A recognize the problems of that particular Advisory Board meeting.

Comment:

It is important to remember to stay focused on the workers, rather than disagreeing and fighting with the auditors.

LaVon Rutherford:

You will continually see changes in the program that will expedite the claim process and make the program better for claimants.

Comment:

At East Tennessee Technology Park (ETTP), we have quite a few new concerns about possible worker exposures. People wonder why you need a TLD or Personnel Nuclear Accident Dosimeter (PNAD) when you go past Portal 11 into limited areas. We do have areas that contain numerous UF₆ (uranium hexafluoride) cylinders. Many of the UF₆ cylinders that they are receiving in Paducah are coming from our site.

Comment:

Regarding the K-25 building that is currently involved in this project right now—there is a certain area where another company is doing asbestos abatement. Just outside a set of double doors (which are not air tight) where they are doing the asbestos abatement, there is a guard posted and it is optional for guards to wear a respirator or a dust mask. I do not know the reason guards are not wearing full protective gear. They are bringing combustibles outside of this building and putting them in a radiation area. However, the wind blows everything all over and it could very easily be spreading contamination.

Comment:

Today there was a lithium fire at the K-25 site on the property-protected side of the plant.



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Comment:

In times past, a dried up vial of a cousin to the West Nile Virus was found in K-25. When they were doing the clean up on K-31 and K-33, they found things that were not supposed to be in those buildings. I have also heard stories from guards who said that years ago they would have releases at night so that the releases would not be seen.

Comment:

We have had a couple of communication problems. One particular incident resulted when we had a security check to do. The guards were told that they no longer needed to dress out in a specific area because the area had been cleaned up. For ten months, I did not dress out during my security check. Later I found out that the clean-up job never was performed and that I had been going unprotected into a contaminated area. Sometimes the security personnel are the last people to know important information. There is a communication problem most likely due to the numerous contractors performing different types of work.

Comment:

There is a problem with prostate cancer at K-25 for workers who worked in the Centrifuge Building.

Mark Lewis:

NIOSH puts on a class on how they reconstruct doses; it is Integrated Modules for Bioassay Analysis (IMBA) training. The training was very helpful to the people who attended in the past. If they have the training again, I will contact you to see if you are interested.

Jay Maisler:

The tough thing that we face is that emotions are high when people are ill. It is important to understand that just because a person is sick does not mean that all sick workers will be compensated. The site profile can give people who are submitting claims reasonable assurance that they are getting a fair shake. We are trying to make sure that we have the best information so that we can do the right thing for the people who submit claims.

Comment:

If there is any information that you could send me about this program I would be happy to put it in the kitchen so that people could pick it up and read it if they choose to do so.

Bill Murray and Mark Lewis thanked the participants for their input and for taking the time to attend this meeting. The meeting concluded at 5:00 p.m.