Meeting Date:
January 18, 2005

Meeting with:
PACE International and Guards Unions

Attendees:

Trent Eckert	PACE
Eric Parker	PACE
Herman Potter	PACE International
Gary Nolley	PACE

NIOSH and ORAU Team Representatives:

Peter Darnell – National Institute for Occupational Safety and Health (NIOSH)

William Murray – Oak Ridge Associated Universities (ORAU)

Mark Lewis – Advanced Technologies and Laboratories International, Inc. (ATL)

Melissa Fish – ORAU

Jeff Vollmer – Environmental Dimensions Inc.

Proceedings

Mark Lewis began the meeting by thanking everyone for attending. After introductions, Mr. Lewis stated that the purpose of the meeting was to help the National Institute for Occupational Safety and Health (NIOSH) and the Oak Ridge Associated Universities (ORAU) Team obtain labor input that can be considered for use in the Mound Site Profile.

Mr. Lewis pointed out that the meeting was being recorded so that the team could accurately record individual concerns and comments. Mr. Lewis emphasized that the team only cares about the concern/comment and not who made the comment. Mr. Lewis explained that the recording will be used to create meeting minutes and that everyone attending would receive the draft meeting minutes.

After introducing himself, Peter Darnell thanked everyone for their time and explained that the Energy Employee Occupational Illness Compensation Program (EEOICPA) is a DOL program and that NIOSH works with the DOL in processing claims submitted under Subpart B of EEOICPA. Mr. Darnell said that NIOSH is trying to calculate the

maximum amount of dose that a worker could have received (probability of causation [POC]). If the POC is above 50%, it is assumed that the radiation exposures caused the cancer and compensation would be awarded. If the POC is below 50%, it is assumed that the radiation exposures did not cause the cancer and compensation would not be awarded.

William Murray began his presentation by thanking everyone for taking the time to come to the meeting to provide worker input into the Mound Site Profile. Mr. Murray told the group that the Mound Site Profile has been completed, been through the review process, and that NIOSH has approved the document. However, the process is not over; all worker input will be evaluated and, if necessary, will be used to revise the Mound Site Profile document.

Mr. Murray explained that there have always been two parts to EEOICPA: Subpart B and Subpart D. However, Subpart D is now Subpart E. Both Subparts are now being administered by DOL. Mr. Murray said that the Worker Outreach team was present to discuss the radiation portion of Subtitle B. Mr. Murray identified significant dates regarding EEOICPA and went on to explain that NIOSH is the federal agency that performs the dose reconstructions under Subtitle B. The Office of Compensation Analysis and Support (OCAS) is the department within NIOSH that is concerned with processing the Subtitle B claims. Because of the magnitude of the EEOICPA project, NIOSH hired Oak Ridge Associated Universities (ORAU) to be the primary contractor.

Mr. Murray explained that he would be talking about the Mound Site Profile, describing what the site profiles are used for, asking for suggestions and information, documenting concerns and issues, and answering questions. Mr. Murray told the group that the Worker Outreach team is interested in any information that former workers or the union members might have that could be used in the Mound Site Profile.

The site profiles are one type of document which supports the dose reconstruction effort. Mr. Murray said that the site profiles are used by radiation specialists to reconstruct radiation doses. Site profiles provide site-specific technical information and minimize the interpretation of data; all radiation specialists are using the same information. Mr. Murray added that all site profile documents can be revised when new information that will impact dose reconstructions comes to light. Mr. Murray explained that the site profiles for Hanford and INEEL are being revised due to new information. Mr. Murray added that after talking with the Building and Construction Trades at the Savannah River site, NIOSH decided that there needs to be a specific technical basis document which covers construction activities at each site.

Mr. Murray told the group that the site profiles consist of five sections: site description, occupational external dosimetry, occupational internal dosimetry, occupational environmental dose, and occupational medical dose.

Mr. Murray specified that the Mound Site Profile team was established in July 2003 and that the Team Leader is Jeff Vollmer. The Mound Site Profile is completed and, after going through an extensive review process, has been approved by NIOSH. Mr. Murray added that the Mound Site Profile as well as other approved site profiles can be found on the NIOSH website at http://www.cdc.gov/niosh/ocas/ocastbds.html.

Mr. Murray explained that the site description portion of the Mound Site Profile provides an overview of the facilities and activities at the Mound site since 1943. The Mound Site Description also documents the radioactive materials and radiation sources and identifies potential radiation exposures from occupational and environmental sources. Mr. Murray added that the Mound site was complex and included research and development on separating and processing many radionuclides (polonium, plutonium, protactinium, thorium, radium, actinium, and tritium), developing neutron sources, and developing and producing weapons components. In addition, Mr. Murray said that developing the Mound Site Profile was difficult because a lot of the information regarding the Mound site was classified and some of it remains classified. However, NIOSH has the ability and clearances to go out to the site and talk to people who might divulge classified information. NIOSH has methods for dealing with classified information. NIOSH is able to use formerly classified information in a way that the information is no longer “classified” in the site profile documents.

Mr. Murray pointed out that Mound had an external dosimetry program that began in 1943 for beta, gamma, and x ray and in 1949 for neutron exposures.. The external dosimetry program is described in the Occupational External Dosimetry section of the Mound Site Profile The section includes information about dosimeter technology, exchange frequency, workplace radiation fields, and worker locations around radiation sources, e.g., the use of glove boxes at Mound. There is also information about the sources of exposure at the site, methods and practices used by the site over time, and adjustments to recorded doses. This section also looks at the minimum detectable levels (MDLs) on badges to see the lowest radiation dose that could be detected. Mr. Murray explained that the dose reconstruction attempts to account for the MDL by assigning a dose even when a claimant’s recorded value after reading the badge is zero. In cases of recorded zeros, half of the MDL is the dose that is assigned to the claimant for each badge exchange. In assigning an external dose for every recorded zero, NIOSH believes that the dose reconstruction is claimant favorable.

The Occupational Internal Dosimetry section of the Mound Site Profile includes information regarding methods and practices of the internal dosimetry program, sources of exposure, and reporting levels. Mr. Murray also explained that the Internal Dosimetry section includes a discussion regarding the minimum detectable activity (MDA) for the two primary techniques for measuring internal exposure: whole body/chest counting and urinalysis. The Mound internal bioassay program started in 1944 collecting and analyzing urine and fecal samples for radionuclides. Mr. Murray added that gamma-

emitting radioactive materials were measured inside the body with whole body counting from 1960 to 1970 and with chest counting from 1970 to 2003. Finally, Mr. Murray emphasized that the Occupational Internal Dosimetry applies only to workers who were involved in a formal dosimetry program.

The Occupational Environmental Dose section of the Mound Site Profile provides guidance regarding workers who were not in the formal monitoring program. Mr. Murray pointed out that this section is important because workers who were not monitored could have been exposed to radiation on the Mound site from radioactive materials released into the air and radioactive materials in the work environment. He explained that the external dose component results from radiation sources inside buildings, radioactive wastes, storage, etc. Site-wide monitoring data are used to calculate the external dose for unmonitored workers. Regarding the internal dose component, Mr. Murray explained that the annual intake of radioactive material is calculated from the average annual air concentration, using localized air sampling data. He said that the unmonitored portion of a worker's dose would never show up on a DOE record..NIOSH is trying to be claimant favorable by accounting for unmonitored environmental dose.

Mr. Murray explained that the Occupation Medical Dose section of the site profile is another example of being claimant favorable. The Occupational Medical Dose provides guidance about adding the dose from employer-required x rays to the reconstructed dose. This section provides the frequency of employer-required x rays and the x-ray equipment and techniques that were used at the Mound site. He said that only chest x rays required by the employer are included. He also explained that the x-ray equipment changed over time and that older equipment gave off more x-ray radiation resulting in higher doses. Thus, the type of x-ray equipment used at the Mound site is very important information.

Jeff Vollmer indicated that he did not find any evidence of the use of photoflurographic x-ray equipment being used at the Mound site. He told the group that if anyone had any knowledge specifically regarding the use of photoflurographic x rays occurring at the Mound site, he would like that information. It would be very useful and an important part of the Occupational Medical Dose section of the Mound Site Profile.

Mr. Murray provided an example of photoflurographic x-ray equipment being used at the Y-12 site in Oak Ridge, Tennessee. He said that a Y-12 medical x-ray technician swore that Y-12 did not use photoflurographic equipment. However, the team found different x-ray film sizes as well as old memos, and was able to document that photoflurographic x-ray equipment was used for worker chest x-rays at Y-12.

Question: During what years was the photoflurographic equipment generally used?
William Murray: Most of the original DOE sites opened up in 1942 or 1943 which is when photoflurographic equipment was the standard technique being used everywhere.

At K-25, the photoflurographic equipment was used until 1951. However, in general photoflurographic equipment was not used past the mid to late 40s.

Question: What equipment was used at the Mound site for x rays?
Jeff Vollmer: I could not find any evidence of photoflurographic equipment being used at the Mound site.

Question: Were personnel records looked at? Would they indicate whether or not photoflurographic X-Rays were used?
Jeff Vollmer: After reviewing the personnel records from the 1940s to the 1960s, there was no indication of photoflurographic equipment being used. In addition to reviewing the personnel records, I tried to get in touch with the site doctor but was unsuccessful.
Audience: A member of the audience indicated that he might be able to get in touch with the doctor.

Question: Are there written procedures for taking x rays?
Peter Darnell: Currently, most sites do not have written procedures for taking x rays; most sites just have techniques for using x-ray machines. Calibration records are being kept now. Calibration recording keeping began in the 70s and by the 80s was country wide. It is difficult to reconstruct medical dose for the years prior to the 70s.

Comment: It would seem that if documentation regarding the use of photoflurographic equipment was found at Y-12, the same equipment and process would have been used at the Mound site during that same time period.
William Murray: The type of equipment and technique used would depend on the Medical Director at each site.

Mr. Murray reminded the group that a critical piece of the occupational medical dose is to find out if photoflurographic x rays were taken at the Mound site.

In conclusion, Mr. Murray told the group that developing a usable site profile is an important task and that the site profiles can be changed based on new input. All comments should be sent directly to NIOSH. Mr. Murray provided the mailing address, fax number, and email address for submitting site profile comments. In addition, he provided the NIOSH Office of Compensation Analysis and Support website address.

Mark Lewis reminded the group that it is important to find out what type of x-ray equipment was used at the Mound site and to get that information to NIOSH as well as any other pertinent site specific information. Mr. Lewis also congratulated Jeff Vollmer on writing one of the most understandable site profiles that he has read.

Discussion Session

Concern: How technically feasible and correct is it to use memorandums as reference material in the Mound Site Profile? Was there any review regarding if what was said was true or could have been true?
Jeff Vollmer: We looked at all kinds of work-related documents, including procedures. We search procedures and other documents looking for technical accuracy.

Concern: There was an incorrect statement made in a memorandum regarding a specific year and neutrons.
Jeff Vollmer: The documents, including the memorandums were all read and formed a rough outline. From there, we filled in additional information and checked information in the timeline with other documents to make sure that the information matched up.

Question: How far back do the archives go regarding internal dosimetry?
Jeff Vollmer: We used the Dayton Record Center. There were five people working on the Mound site for a week and then I returned to the Mound site on two other occasions.

Question: Were the procedures that were looked at application procedures (how they sampled, how they measured)?
Jeff Vollmer: Yes.

Question: Was there a formal technical basis that went along with the procedures that was reviewed or was it done by memorandum?
Jeff Vollmer: We first looked for a technical basis document regarding procedures and/or explanations of why they did what they did. Any other records that were found were also evaluated and added into the process.

Question: What was the earliest technical basis document that was found?
Jeff Vollmer: I cannot specifically answer that but I believe there were documents from the 1950s.

Question: Was there any review regarding the technical correctness of the technical basis documents?
Jeff Vollmer: Yes, we looked at the type of film that was used as well as the reported error and what would be the real error.

Question: I noticed there are a lot of calculations. What is the 300-340 millirem based on?
Jeff Vollmer: The 300-340 millirem is based on the film badges.

Question: Did that have a technical basis?

Jeff Vollmer: Yes. However, Mound did trail other sites as far as implementing other/newer procedures.
Peter Darnell: Yes, there is a technical basis. We apply today's science to the knowledge and data from years ago.

Concern: I am also concerned about how they got the data because what is recorded on paper does not necessarily reflect what really happened. This is the reason that I asked if there were procedures regarding how they took the measurements. For example, did they always wait four hours after an exposure to perform a urinalysis? We know that they never did. Did they take two urinalyses in succession? We know that was not always done. Were these routine samples or were these special samples? There are so many things that could have impacted the urinalysis results which are being used as data.
Pete Darnell: To be very blunt, I believe that every case we have run thus far you are either well above 50% or you are well below 50%. When performing the dose reconstructions, we use the worst time period so that the dose is claimant favorable.

Concern: It was claimed that neutrons were never at Portsmouth. Later it was discovered that you had just as many neutrons in the (inaudible). Paducah, the Portsmouth sister site, ignored the fact that there were neutron readings on the badges at Portsmouth.

Concern: The placement of environmental badges could impact the readings.
Jeff Vollmer: We found new ways of reconstructing the environmental dose and we found the worst case scenario and used that data.

At this point the group indicated that PACE would be sending in written comments regarding the Mound Site Profile. The group added that they have discovered that there are similarities across all sites. We have managed to bring workers together to discuss what went on and to recall specific events.

Again, Mark Lewis thanked everyone for taking the time to attend the meeting and their willingness to provide comments regarding the Mound Site Profile.