



NIOSH Dose Reconstruction Project Introductory Meeting on Development of Site Profile for Energy Technology Engineering Center (ETEC)

Meeting Date:

January 19, 2006, 10:00 a.m.

Meeting with:

United Auto Workers (UAW) Local 1519 Retirees' Association, Santa Susana, California

Attendees:

Name	Organization
Robert S. Huffman	President, Retirees' Association, UAW Local 1519, Santa Susana Field Laboratory (SSFL)
Stephen E. Rudolph	UAW Local 1519, Retired
Leopoldo V. Rodriguez	UAW Local 1519, Retired
Charles Armstrong	UAW Local 1519, Retired
Edwin Schaper	UAW Local 1519, Retired
Bob Michaels	UAW Local 1519, Retired
Rudolfo C. Dealva	UAW Local 1519, Retired
Edgar Lavalle	UAW Local 1519, Retired
Don Dirubio	UAW Local 1519, Retired
Norm Pollock	UAW Local 1519, Retired
Arlo Malwitz	UAW Local 1519, Retired
Linda Hayes	UAW Local 1519, Health and Safety
H. F. "Rocky" Rasmussen	UAW Local 1519, Retired
Lynn E. McKie	UAW Local 1519, Retired, SSFL
Lee Wells	UAW Local 1519, Retired, SSFL
Clem Cecka	UAW Local 1519, Retired, SSFL
Duncan Thompson	UAW Local 1519, Retired, SSFL
Ted Fleser	UAW Local 1519, Retired, SSFL
Al Onori	UAW Local 1519, Retired, SSFL

NIOSH/ORAU Team:

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

Melton Chew, M. H. Chew and Associates, Site Profile Team Leader

Steve Meiners, Tricord, Inc.

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

Mary Elliott, ATL

Proceedings:



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The President of the UAW Local 1519 Retirees welcomed the NIOSH/ORAU (Oak Ridge Associated Universities) Worker Outreach Team to their meeting. Mr. Lewis thanked the President for the opportunity to meet with them. He introduced himself and the other Team members: Mark Rolfes, Steve Meiners, Mel Chew, and Mary Elliott. He explained that a recording was being made not to identify the speakers, but to aid in preparing meeting minutes that will accurately capture the concerns and issues raised during the meeting. He requested that everyone sign in on the sheet provided and stated that their names would be included in the minutes, but not their contact information.

Mr. Lewis described his background in organized labor and his work within the nuclear weapons complex. He stated that his career experience led to his current job as the Worker Outreach Team's Union Outreach Specialist on the NIOSH Dose Reconstruction Project.

Mr. Lewis explained that the Team was there to discuss the ETEC Site Profile, a tool that serves as a technical handbook for the dose reconstructors to use in determining the radiation exposures for claimants under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA). Since the primary source of information for the Site Profile is the records kept by the Department of Energy (DOE) and its contractors, the Worker Outreach Team has been charged with getting the "rest of the story" – the workers' perspective – from employees who worked at the site under the DOE nuclear weapons contracts. This a very important task because the "official" records do not always accurately reflect the work practices and radiation safety issues at a given site.

Mr. Lewis stated that, ideally, the Team meets with labor organizations representing the workers before the Site Profile is written. The Team had planned to meet with UAW Local 1519 in May 2005, but several events prevented that meeting from taking place. Although the ETEC Site Profile is nearly finished, it is a "living document," which means that it may be revised if new information comes to light that could affect the dose reconstructions for claimants from the ETEC site. Information from this meeting may not be included in the first edition of the document, but may be included in future revisions. After the ETEC Site Profile is approved, it will be posted on the NIOSH web site: <http://www.cdc.gov/niosh/ocas/ocastbds.html>.

Mr. Lewis said that Mr. Rolfes, Mr. Chew, and Mr. Meiners are health physicists on the NIOSH Dose Reconstruction Project who were present to answer questions and address concerns during the presentation. Mr. Rolfes said that he could not address questions about specific claims, but would take information and communicate answers regarding claims in a timely manner. Mr. Lewis turned the floor over to Mr. Meiners for the presentation.

Mr. Meiners thanked the retired union members for the opportunity to meet with them. He stated that the purpose of the meeting is two-fold: it serves as an opportunity for workers and former workers to provide suggestions and information for the Site Profile, as well as a providing a means for the Worker Outreach Team to document their comments and answer any questions regarding the Site Profile and the dose reconstruction process.

Mr. Meiners gave an overview of EEOICPA. The legislation was passed to compensate workers from the nuclear weapons program who have become ill as the result of exposure to radiation or toxic substances during their employment. A Site Profile document is prepared for many of the



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sites that were involved in these programs. The Site Profile serves as technical guidance in reconstructing the energy workers' radiation doses over the course of their careers.

All EEOICPA claims are filed through the Department of Labor, which verifies the claimant's or former worker's employment and medical diagnosis. Two types of claims may be filed under this program. Subtitle B claims may be filed for radiation-induced cancers, berylliosis and some silicosis claims. Subtitle E claims may be filed for diseases related to toxic chemical exposure. Employees or former employees who work(ed) for facilities or companies under contract with the AEC or DOE can file claims for \$150,000 for Subtitle B, but the type of facility determines eligibility for Subtitle E. Surviving spouses or children may also file a claim on the worker's behalf if the worker is deceased. NIOSH receives only Subtitle B cancer claims for radiation dose reconstruction. NIOSH established the Office of Compensation Analysis and Support (OCAS) to facilitate and provide oversight for the dose reconstruction efforts. Due to the large number of claims submitted, NIOSH hired ORAU and its subcontractors to assist with the dose reconstructions and other associated tasks.

The Site Profile is used by the health physicists who reconstruct workers' EEOICPA radiation doses. The information in the document allows the dose reconstructors to consistently use the same data to provide a framework for all claims from that site. To determine the likelihood, or "probability of causation" (POC), that a worker's cancer is related to his or her occupational radiation dose, the worker's dose is reconstructed from dose records and the claims interview process – is entered into a computer program to calculate the POC for that type of cancer. The claim is awarded if the program finds that the cancer is "as likely as not" (greater than 50% POC) to have been caused the worker's occupational radiation dose.

The Site Profile Team uses records from DOE and its contractors for most of the information in the document. But to ensure that the document is an accurate and comprehensive tool for radiation dose reconstruction, input from people who actually worked at the site is needed regarding daily plant operations, safety practices, dosimetry and bioassay programs, and any incidents or accidents affecting a large population of workers at the site. Because the workers are the "site experts," the knowledge they can provide improves the quality of the Site Profile, resulting in more effective evaluations of workers' radiation doses.

The ETEC Site Profile is a collection of historic, site-specific, technical information that includes six sections: Introduction, Site Description, External Dose, Internal Dose, Environmental Dose, and Medical Dose.

The Site Description is a summary of the ETEC facilities that were used in contracts between DOE and Rockwell's Atomics International and its successors from 1948 to the present in the nuclear energy and weapons programs. It describes the radiation-related programs that took place in each building, along with radiation sources that were present. Incidents or accidents that occurred in these areas are also discussed in this section.

The Medical Dose section describes the medical X-ray programs that were in place during the contract periods. This section discusses which workers received medical X-rays as a condition of their employment, as well as the frequency and types of X-rays that were regularly required, and how the medical program changed over time. If site-specific information on the frequency of X-



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ray examinations is not available, NIOSH assumes one chest X-ray per employee per year for dose reconstruction purposes.

The section on External Dose describes the external dosimetry programs that were in place at the plant. It gives details such as which workers wore dosimeter badges and what types of dosimeters they were issued. It also describes the types of radiation that were measured, the frequency of badge exchange, and the badging practices as outlined in the dosimetry programs, as well as changes in the dosimetry program over time. In an effort to be claimant-favorable, NIOSH applies a “missed dose” component to compensate for cases where dosimeter readings were reported as zero. This “missed dose” is calculated as one-half of the minimum detectable level (MDL).

The Internal Dose section describes the internal dosimetry and bioassay programs and which workers were included in them. It discusses the radioactive materials that were present and how radioactive contamination was controlled, as well as the air monitoring programs. Bioassay information is given, as well as information regarding whole body and chest counting.

The Environmental Dose section is included to allow for workers who were not monitored in dosimetry programs. Site-wide monitoring for air concentrations is used as a basis to determine internal environmental doses, and materials in storage and waste pits are considered for external environmental doses.

Mr. Meiners concluded the presentation by reiterating that the site profile teams rely on workers' information to make the Site Profiles more comprehensive and accurate documents for calculating dose reconstructions for claimants. Any information that might contribute to revisions to the Site Profile can be sent directly to NIOSH at the addresses in the presentation, as well as by fax at the number provided. When the ETEC Site Profile is complete, the document will be posted on the NIOSH website, which is also a very useful source of information on the EEOICPA program.

Question:

What about those of us who don't have computers or internet access?

Steve Meiners:

Public libraries usually have internet access available to the public. NIOSH also has toll-free numbers that you can call for information. The information is in the presentation folder.

Comment:

Most of the exposures we were aware of were not from radiation.

Steve Meiners:

EEOICPA has mechanisms in place to compensate for chemical exposures, too. Claims can be pursued under both Subtitles B and E.

Mark Lewis:

You should pursue a claim if you believe that any illness you have now or have had in the past may be related to chemical or radiation exposure during your employment. If you are in doubt, you should call the DOL Resource Center.

Question:

Does this profile have a geographic area that it encompasses?



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Steve Meiners:

That is an excellent transition question. I'm going to turn the program over to Mel Chew, who is the Site Profile Team Leader and the author of the ETEC Site Profile.

Mel Chew:

Thank you, Steve, and thank you all for having us here today as part of your meeting. I had the pleasure of putting the team together and we came down to begin gathering information for the document at the beginning of November 2005. It was our goal to put together the most accurate information available to us in a very timely manner. What we found was fascinating – you should be proud to have been a part of the history of ETEC.

To address your specific question, sir, we looked at all the facilities involved in the Atomics International/Rocketdyne contracts – Downey, Canoga Park, Desoto Avenue and especially Area IV at the Santa Susana Field Laboratory.

The Site Profile Team looked at many documents from the late 1940s and the 1950s and on up through the present – the experimental reactors, the fuel fabrication for those reactors, the accelerators, and the research and development programs that have taken place here over the years. The diverse technical operations here are amazing. During our first site visit we went to one of the buildings up in Area IV that housed 147 four-drawer files. Fortunately they were very well catalogued – outstanding records of the radiation programs, very well documented. We were able to find documentation back from the very early days in the 1940s. The reactor programs from the 1950s and 1960s, as well as the fuel fabrication programs were also well-documented. The Site Profile will reflect that – the Site Description for this site is much larger than the usual 25 to 30 pages. If you have a chance to look at the Site Profile, I would hope that is where you would start. As you review this section, if you think that there is information missing on any program that you know about here that involved radiation work, please let us know and we will search out the information.

I need your help in finding some missing information about a program that involved a small thorium reactor that operated on only a few watts. This was the Advanced Thorium Reactor that operated from 1960 to 1974. We need to look at the fuel mixture for that reactor. Does anybody have any knowledge of that?

The Medical section is very important. We actually talked to the early doctors that worked on the program. I also met with the current doctor on staff and looked at some of the files, even pulling out X-ray films so I could clearly understand what kinds of machines were used.

In an effort to be favorable to the claimant, NIOSH gives the benefit of the doubt when there is no clear evidence of the claimant's radiation exposure. If no dosimetry records or bioassay data are available, the dose reconstructors assign a default value to reconstruct the radiation exposure – usually the maximum radiation dose from the operation in which the claimant participated.

We looked at the internal exposures. For example, we know that there was a powder room. They made some of the fuel there, so we looked that the operation, the kind of sampling they used, what kind of bioassay program – lung counting or urinalysis – that they had.

We also looked at the environmental ambient radiation dose for the Environmental section. Even though you may not have been working next to a reactor, or directly inside one of the powder



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rooms, you may have potentially received a radiation exposure. We looked very carefully at the environmental reports.

The section on external radiation tells which people wore dosimetry badges and which did not. We know that there were different exchange frequencies for different workers. All of this is factored in when a claimant's radiation exposure is calculated. We know that the badging changed from film badges to TLDs (thermoluminescent dosimeters), so there was a change in the sensitivity of the dosimetry methods.

We've covered the Medical, Internal, External and Environmental Sections. Those are the four main technical documents in the Site Profile that help reconstruct a claimant's dose. The fifth section is the Site Description and the other is the Introduction. The documents are still being developed, but if you have anything you would like to share with us that you feel is missing please share that information with us. We will research it and address it in the document as necessary.

Question:

Do you have access to the UCLA (University of California Los Angeles) studies? They asked some of the same questions.

Mel Chew:

Yes, I think they did some groundwater studies. We do have access to that information. They probably did most of their study from personal interviews. We did it from existing records. That was our starting point. We had to get something on paper. We do have access to information other than the site information to use in writing our documents. There have been quite a few cases that have been filed, so we had a deadline to meet to get the documents into the review process.

Comment:

Boeing just settled a lawsuit for \$30 million with area residents over environmental issues.

Mel Chew:

Did they settle with individuals?

Response:

They settled with one hundred families.

Mel Chew:

And they were people who lived around the area? EEOICPA is for employees and former employees who worked at the sites. The Site Profile states that you went back and forth between Atomics International (AI) and Rocketdyne. One day you might have been working on something for the space shuttle program and the next day be working at one of the reactors. Any exposure you may have received on any of these programs was considered.

Comment:

We were all on top of the hill.

Mel Chew:

I saw a couple of those big tanks – a lot of work went into just getting them up there.

Question:



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How can you identify the location of a project – by building or by timeframe of the operations? We had an X-ray program in a building and the year was 1983-84, and the work was classified. Who determines if an operation is not considered as, shall we say, secret any longer?

Mel Chew:

X-rays... ok... We are familiar with each building and we try to chronologically determine what went on in these buildings and what we can say that is unclassified. These documents are unclassified. If there were some X-ray machines there, it would talk about the size of the machine or if they used radionuclide sources. That would be a very good thing for you to look at if you get a chance to see the Site Profile. Go right to that particular section and make sure that we have information about the program. Not that all the information will be in there – if you are a claimant and you say that you worked in that particular building, the dose reconstructor can pull the information for that building and work on the claim. The Site Profile is not the only source of information. The dose reconstructors use many other sources of information to process individual claims. Many small projects were conducted here, mostly research and development. Some of the other DOE facilities were mainly production with many people working on a few projects. Here you had many small projects with a few people working at a lot of different things.

Comment:

When AI started, everyone had a clearance. Then Rocketdyne – a lot of work was done on the hill with the goal of putting man on the moon. But we all worked on the hill and it was possible for everyone to have exposure if there was a meltdown.

Mel Chew:

If you were badged, even if you worked on Rocketdyne, everyone wore the same film badge at both sites.

Comment:

Rocketdyne employees did not have badges. Only the AI employees were badged.

Mel Chew:

It is good to address these things. There were quite a few radiographers who went back and forth, and we used the information from their badges to determine the external dose.

Question:

Do you have information on the Ion Propulsion System?

Mel Chew:

We looked at that program. The information we found was that they were primarily research papers. They are building a research facility in Huntsville, Alabama to study ion propulsion, anti-matter and anti-gravity.

Comment:

The vast majority of the work in Area IV had nothing to do with radiation. At the bottom of the hill, the residents in the Valley are all concerned down there about general exposure and they studied the whole 2,700 acres up on the hill to see if there was any “ominous effect.” I worked here for forty-three years. With all the records, the instrumentation, the air monitoring done over the years up here, do we ever really know?

Mel Chew:



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That is a very valid question. The Environmental section deals with the potential exposure to background (ambient) radiation. We have information for potential internal and external exposure to that kind of radiation. They put TLD packets around the site to monitor the environmental external exposures. The levels were fairly low; the reactors operated at low power and were very well shielded. There was not what I would consider a significant amount of radiation present, but you need to read the document to make sure we addressed it properly. The environmental reports are primarily oriented toward chemical effects and include only a small amount of information about the radiation.

Comment:

In the late 1950s, there was a complete meltdown. They scrapped the materials in the yard, where they could be used by anyone. I have often wondered what the possible contamination might actually be.

Mel Chew:

We spent a considerable amount of time going through all versions of the documentation. We have seen the newspaper articles that call this your Chernobyl or Three Mile Island. I'd like to give you my perspective. It was basically a cladding failure, and it was actually more than one. The one everybody talks about was the sodium reactor. They gave us a lot of information on the loss of the cladding and how much material actually escaped. We have that documented fairly well to our satisfaction. When we think of meltdowns, you think of maybe a cloud of contamination. It was a small incident in comparison to Chernobyl – not even close. But technically, some of the cladding did have excess heat and they went into minute detail in their incident reports about what caused that.

There were several other small incidents that we talked about in the document. Boeing did a thorough reporting of incidents that may potentially impact radiation exposure. We actually worked from that particular book. Everything was all included in one book. The cladding failure was well addressed in the documents. We also have some references in the Site Description that talk specifically about that and the exposures to the workers, the public and the environment from several incidents.

Question:

Was there exposure to the people on the hill (the workers)?

Mel Chew:

A small cloud of radioactive material was released and there was not much higher exposure above the ambient level. There weren't many people up there at the time. If you weren't badged and you had exposure, we have enough information, along with the dates, to give a maximum exposure for the incident.

Question:

Do you remember when this happened? Will it be in the Site Profile? We would like to know the dates.

Mel Chew:

Yes, there are specific references to the incident reports with exact dates. And as I mentioned, it also references to the incident reports that came out of that. There was a document that compiled all the incidents and that one is very well documented. The people who reconstructed the event



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actually made a movie to document it. The Site Profile Team actually watched the film. They wanted us to see how the incident may have occurred.

Question:

Is that main report on Building 59? Is that the building we're talking about?

Response (from another attendee):

It was the SRE (Sodium Reactor Experiment).

Mel Chew:

Yes, that's right, as well as other cladding incidents that were worthy of mention. As I said before, not all of the information on that incident is going to be in the Site Profile. But what is in there will lead to a trail of information that the dose reconstructors can use during an individual dose reconstruction.

Question:

Are you familiar with Bridge the Gap?

Mel Chew:

I am not familiar with that. What is it?

Response:

It is a community organization.

Comment:

I have the document. If there was a meltdown, gases were released. They did a lot of stuff here at night. The document shows that there is ten percent (10%) higher radiation exposure to the workers on the hill than the people in the Valley.

Mark Lewis:

Most of you worked in the non-radiation programs. If you know someone who worked on the AI side who you could pass this information on to, it would be good to have the document looked at from the workers' point of view. If there is anyone who has classified information that should be included in the document, secure interviews can be set up.

The Site Profile will be published on the NIOSH website when it is finished. The web address is: <http://www.cdc.gov/niosh/ocas/ocastbds.html>. If you don't have computer access, we can send you a hard copy. We will come back to meet with you again after the Site Profile is done and you have had a chance to look it over.

Question:

One more question on that site geographical definition: Does the Site Profile go back to the late 1940s – as far as the buildings and the basic perimeter? Is that in the document so we can look at it?

Mel Chew:

Yes, it goes all the way back to the beginning. I found the date for the SRE incident. It was July 26, 1959.

Mr. Lewis again thanked the union members and former workers for including the Worker Outreach Team in their meeting. The meeting concluded at approximately 10:45 a.m.