



NIOSH Dose Reconstruction Project Development of the Site Profile For W. R. Grace – Erwin, Tennessee

Meeting Date:

July 21, 2005

Meeting With:

United Steelworkers of America Local 5-3677
Erwin, Tennessee

Attendees:

Roger Birchfield	USW (PACE) Local 5-3677
Debra Green	USW (PACE) Local 5-3677
Larry Abel	Former NFS worker, Retired PACE International Union Representative
Gary Sparks	NFS Clerks
Darrel Stockton	NFS Lab Tech
Smith Davenport	Retired NFS

NIOSH/ORAU Worker Outreach Team:

William “Bill” Murray – Oak Ridge Associated Universities (ORAU)
Mark Notich – Advanced Technologies and Laboratories International, Inc. (ATL)
Mark Lewis – ATL
Mary Elliott – ATL

Proceedings

Mark Lewis began the meeting at approximately 3:45 p.m. by thanking the attendees for inviting the team to meet with them and asking that everyone introduce themselves. He explained that he had worked at the Portsmouth Gaseous Diffusion Plant for 29 years and is a member of the United Steelworkers of America. He is now employed by ATL International, a subcontractor to Oak Ridge Associated Universities (ORAU), to conduct worker outreach with labor organizations that represent workers associated with the nuclear weapons complex.

Mr. Lewis said that the purpose of the meeting was to discuss the types of information that will be useful in developing the W. R. Grace/Nuclear Fuel Services Site Profile. Since contractor and government records are used in writing the site profile, worker input is necessary to ensure that the document is not biased against the worker. He explained that the site profile is a “living document” that is revised when new information becomes available that impacts the outcome of dose reconstructions. The Worker Outreach Team will return when the site profile is completed to hear the workers’ comments, and see if



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there is additional information that may be useful in making the site profile and dose reconstructions more accurate.

Mr. Lewis pointed out that Mary Elliott was present to take notes and record the meeting to ensure accuracy of the meeting minutes. He also introduced Mark Notich, the Site Profile Team Leader, and Bill Murray, the Worker Outreach Team Leader. He turned the meeting over to Bill Murray for the presentation.

Mr. Murray said that in the early stages of the Worker Outreach program, site profiles for several sites were completed before the team had the opportunity to meet with workers from the sites. The team conducted meetings with the workers after they had the chance to review the documents. Because the site profiles need to be comprehensive and accurate, they should reflect not only the information in the contractors' and the Department of Energy's records, but also the experiences of the workers at the sites. Several of these early site profiles have been revised to include worker input that could impact the outcome of dose reconstruction for those sites.

Mr. Murray explained that the site profile can be a more accurate instrument if the team can meet with workers at the beginning of the document development process. The site profile teams are getting workers' input while the site profiles are being written. To illustrate the types of information that may be helpful in developing the W. R. Grace/Nuclear Fuel Services site profile, he gave the attendees a copy of a finished site profile for another Atomic Weapons Employer (AWE) site.

Mr. Murray talked briefly about handout materials: *What to Expect During the Dose Reconstruction Process*; *NIOSH Fact Sheet What a Claimant Should Know About Radiation Dose Reconstruction*; and *NIOSH Office of Compensation Analysis and Support*. These publications discuss the role of OCAS and its contractors in the radiation dose reconstruction process.

Mr. Murray explained that the site profile is a document that is used as a technical handbook by the health physicists who perform radiation dose reconstructions. W.R. Grace worked on an Atomic Energy Commission (AEC) contract from 1958 to 1970. The site profile team will be gathering information about the plant operations during that time period, as well as the period of residual contamination which continues through the present. Anyone who has been employed at the plant from 1958 to the present can apply for compensation if they meet the program criteria. Fifty-two claims have been filed for W. R. Grace workers; of these five have been completed. All five of these claims were awarded.

During the claims process, there are several opportunities for the claimant to give personal information. When a claim is processed, the claimant (sometimes a survivor) is contacted for a telephone interview. The claimant is asked a series of questions that will be considered in the dose reconstruction. Many times when a survivor is interviewed, they do not have all of the pertinent information. In such cases, the dose reconstructors



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rely on co-worker data to determine some of the variables of the formula. If a claimant feels that some of their personal information may be classified, secure interviews can be arranged.

Mr. Murray said that the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), which was passed in December 2000, includes Subtitle B, which covers claims for radiation-induced cancers, as well as berylliosis and silicosis. After an application for a Subtitle B claim is verified by the U.S. Department of Labor (DOL), it is forwarded to the National Institute for Occupational Safety and Health (NIOSH) for dose reconstruction. If the dose reconstruction shows that the probability is more than 50% that the cancer is caused by radiation exposure, it is sent back to DOL for approval and the claimant receives \$150,000. Medical expenses are also awarded for cancer treatment from the time the claim was filed. NIOSH does not handle claims for berylliosis or silicosis.

Question:

If a claimant had cancer and received treatment prior to filing the claim, can they still be reimbursed for their medical treatment?

Bill Murray:

No. If the claim is awarded, medical expenses are reimbursed from the time the claim is filed and for any expenses for cancer-related medical treatment from that day forward. No medical expenses can be reimbursed for treatment occurring before the claim is filed.

Mr. Murray stated that since July 2001, approximately 20,000 claims have been filed. NIOSH has contracted with ORAU and others to perform the dose reconstructions.

Mr. Murray said that the site profile team, led by Mark Notich, is looking for information that will be useful in developing the W. R. Grace Site Profile.

The radiation dose that NIOSH considers under EEOICPA differs from the official dose that is calculated for a worker while employed at a site. The EEOICPA radiation dose has several components: Occupational External Dose, Occupational Internal Dose, and Medical X-ray Dose. The site profile contains information on these components, as well as a Site Description.

The section on Occupational External Dose describes the dosimetry programs at the plant during the contract period. It discusses which workers wore badges and what types of dosimeters they were issued. It also describes the types of radiation that were measured (e.g.: beta, gamma, and/or neutron radiation), the frequency of badge exchange, how the badges were worn, how lost or missing badges were handled, and if there were any problems with the badges. This section also discusses any changes in the dosimetry program over time.

Because of the way the law is written, NIOSH makes every effort to make the dose reconstructions claimant-favorable – to increase the chance that the claim will be



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awarded. There are many cases where dosimeter readings were reported as zero. In these instances, a “missed dose” component is applied: one-half of the minimum detectable level (MDL) is multiplied by the number of times per year the badge was exchanged. For example, if the MDL is 50 millirems (mrem) and the badges were exchanged weekly, the missed dose for that year would be calculated by multiplying one-half of the MDL (1/2 times 50 mrem = 25 mrem) by 52 exchanges. The missed dose for that year would be 1300 mrem or 1.3 rem.

The Occupational Internal Dose section is included in the site profile for workers who may have been exposed to radiation by inhaling or ingesting contaminants. This section details what radioactive materials were present onsite and how radioactive contamination was controlled. Uranium, thorium, and plutonium were handled at W. R. Grace. It also discusses whether or not air monitoring was performed, which radioactive materials were monitored, and in which areas the monitoring was done. Any available bioassay (urinalysis) information is given, and whether or not whole body counts and chest counts were done.

Comment:

At one time, we had 100% plutonium here. We ran 20% plutonium for years. We also had highly-enriched uranium-233 (HEU, 97.66%). It was enriched at the Oak Ridge and Portsmouth Gaseous Diffusion Plants and the tails were shipped here.

Comment:

There were different orders, especially in the Scrap Building where they handled highly enriched scrap. Different orders came from different places.

Bill Murray:

Do you have any information regarding how they controlled contamination – whether they took swipes to check for contamination?

Mark Lewis:

You were on strike here for a long time over safety issues.

Response:

We had a Congressional Hearing in 1985 to get that resolved.

Response:

Yes. We went to the street until we got a clause in our contract that said we could refuse to handle some of the material without getting fired. They told us we could eat it and we told them “Well, go ahead, then.”

Bill Murray:

When did that happen?

Response:

That language – for limited work refusal – was written into our contract after either the 1967 or the 1970 strike. It was so bad down here that for a long time; this was the only place where workers had that kind of clause in their contract. The Health and Safety



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person at that time would come into a meeting and make a joke of it. We would be running thorium, and he would say “That stuff won’t hurt you. I wouldn’t care to eat some of it.” He died of cancer. I was a radiation technician for over 30 years. I could tell you some horror stories.

Bill Murray:

That is the kind of information that will be useful.

Response:

I know a lot of people who can tell you stories from the 1960s and 1970s.

Mark Lewis:

Then our mission will be accomplished. That would be great.

Question:

Do you get records from Nuclear Fuel Services, like where they got the materials?

Bill Murray:

Yes.

Mark Notich:

If the records are available through the Nuclear Regulatory Commission, we can ask for them. But if they are business-sensitive records, Nuclear Fuel Services is under no obligation to give them to us.

Question:

Have they been asked for these records yet?

Mark Notich:

I don’t believe so. We’re just beginning the process.

Mark Lewis:

We have come to you first.

Bill Murray:

Let me make a point. NIOSH may be able to make a case to get them. They have lawyers on their staff who can tell us whether or not they can get the information.

Question:

Are you entitled to all the dosimetry records?

Bill Murray:

If there were dosimetry records, NIOSH can get them.

Mark Lewis:

There will have to be special arrangements if the records are in a classified vault. Personnel with clearances would have to be sent in to retrieve them.

Comment:

Only the Navy Fuel contract was classified. Everything else is not classified. We did orders for General Electric and many other places. We got the contracts for anything



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DOE couldn't get anyone else to handle. That is how we got our doses. When the plant started up, we carried the materials in our hands – we had very few dry boxes.

Comment:

They gave us half-face respirators that didn't even seal.

Comment:

If you had respirators, you could be in there working and they would say "As long as it has vacuum, you are okay." But you would still get contaminated beyond belief.

Comment:

If you were in the respirator program, you would clean your respirator by running water over it and wiping it with a towel. They were not checked for a long time. When we finally got them checked, they were so contaminated with radiation that we had to throw most of them away.

Bill Murray:

When we talk about the internal dose – that is where the respirators would come in. Did they do any air monitoring? Would there be any monitoring records?

Response:

Yes, they did air monitoring.

Bill Murray:

How frequently and what contaminants did they monitor for? We will try to get those records. Where were the monitors set up? Did they take urine samples from people? Did they do bioassay here? Did they do whole body or chest counting? Did they put you in a chamber?

Response:

They did in the later years.

Bill Murray:

Did they send you to Oak Ridge for that or did they do it here?

Response:

No, they have their own chamber here. We get a whole body count once a year.

Response:

They didn't have the chamber in the early years, during the contract.

Response:

There were workers in the early years who had such high exposures that they could not go into the plant for years.

Mark Lewis:

Are any of those workers still around?

Response:

Yes, one of them lives right behind the plant.



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Mark Lewis:

That's someone Mark (Notich) would probably like to talk to.

Response:

We can arrange that.

Bill Murray:

It is important to know which workers had the body and chest counts, which workers gave urine samples – we want to know if everyone was tested. Were there any changes in the programs? It is also critical to document the time periods for these monitoring programs.

Mr. Murray continued with the presentation: The Occupational Medical Dose section gives information on 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. This section also details the types of X-ray equipment used at the plant. The X-rays that are counted are only the ones that are required for the job. X-rays for injuries are not included.

Comment:

In the early years, we got an annual chest X-ray.

Comment:

In later years, the requirement changed to receive a chest X-ray every other year, until about age 55 when it becomes annual.

Bill Murray:

It is age-dependent, then. The requirements changed over time. That is an important thing to note also.

Mark Lewis:

Were the heavy laborers – like laundry workers, or police, or fire – required to get them every year?

Response:

It was the same for everyone. This was part of the physical, not related to exposure.

Bill Murray:

Was anyone required to have lower back X-rays? In the early 1950s, some workers at Oak Ridge were required to have lumbar spine X-rays because it was believed that potential back problems could be detected that way. If anyone can remember being required to get any other type of X-ray for their job that would be important for us to know.

Mark Notich:

Were the X-rays taken straight on or were they from the side?

Response:

The only ones we've ever had were taken from the posterior view; the machine was behind us.



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Bill Murray:

In some places, the chest X-rays are taken from the back and also from the side.

Response:

During one of my physicals, they took X-rays from the side when they saw some spots on the film. They did several extra films that day. The spots turned out not to be anything, thankfully.

The Site Description covers the contract period from 1958 to 1970, as well as the residual contamination period which runs to present day. Workers could be exposed to the residual contamination and that would have to be accounted for if they file a claim.

Comment:

When things were decommissioned in the 1950s, 1960s, and 1970s, we just buried them out there in the field. We're just completing the decommissioning of the ponds and all the stuff that was buried way back then. They (NFS) are still digging it up and sending it off.

Bill Murray:

That is going to be an interesting point. If that was all stuff that was decommissioned during the contract period, exposure would need to be accounted for that. One of the problems that you have alluded to is that any kind of fuel for anybody (other contracts) was done here if they couldn't get it done anywhere else. You've got Navy Nuclear Fuels for submarines and an NRC license to work with materials here – and that dose doesn't count. Nor does the commercial NRC work. As far as I know right now, you cannot count on the NRC dose being counted.

The Site Description gives details about what radiation sources were used there, what activities and processes took place, and what buildings and areas were used in the AEC operations. Were the same buildings used for other operations? If so, that would be residual contamination. Dates and details are very important here, due to the number of contracts and companies involved at this site. The site profile team is going to have their hands full trying to sort it all out. We need to be very accurate, so the workers can be given the best dose reconstruction we can under this law. Were there any major site-wide accidents? Were there major incidents or accidents – criticalities or exposures affecting a large group of workers – that occurred during the contract period?

The smaller incidents, involving only a few workers, can be reported during the claimant's telephone interview. This interview has a series of questions that ask for personal information. The interview is typed up and sent to the claimant for concurrence in the form of a draft dose reconstruction. The ORAU Team conducts a close-out interview with the claimant, and a final dose reconstruction report is written. The case and final report are then returned to DOL for the final decision.

Mark Lewis:

This may be a good time to explain the site profile conflict of interest issue.



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Bill Murray:

That is a good point. To avoid a conflict of interest, ORAU agreed that if a health physicist has worked at any given site, that person may not do a dose reconstruction for any other person who has worked at that site. At some of the major DOE sites, this is a problem. There are a limited number of health physics people who are available and many of them have worked at DOE sites. This conflict of interest now extends to authors of the site profile. They can provide technical information but they cannot be the responsible author.

I would also like to mention the Special Exposure Cohort (SEC). If you do not think that your radiation dose can be adequately reconstructed – an individual, a group of people, or a union – you can apply for SEC status. The three gaseous diffusion plants at Paducah, Portsmouth, and Oak Ridge, as well as a test facility in Alaska, were originally written into the law as SECs. If a claimant worked at an SEC, has one of the twenty-two cancers specified in the law, and worked at the site for 250 days, the claim is automatically awarded – no dose reconstruction needs to be done. The DOL will verify two things: that the cancer is one of those specified and that the claimant was employed at the site for the prescribed time. There is an opportunity for other groups at other sites to petition for SEC status.

Question:

If any of the fifty-two claimants from W. R. Grace have one of the twenty-two specific cancers, can they file an SEC petition?

Bill Murray:

Yes, they can. Anyone who is qualified may file a petition.

Response:

I think it will be very hard to accurately reconstruct radiation dose for this site. It will be hard to find the right information. You will have to get a lot of your information from workers. We may have to apply for SEC status.

Mark Lewis:

You can look at petitions that have already been granted – Mallinckrodt in St. Louis and the Iowa Army Ammunition Plant – on the OCAS website.

Bill Murray:

I would like to continue with the Site Description. Here are the types of information that we need to know:

- Were AEC operations done in certain buildings? What happened to those buildings? Were they used in any other contracts?
- Were there accidents or incidents? When did they happen? What building?
- Were there any renovations of contaminated buildings? Were facilities demolished? Where did they take these contaminated materials?



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- What were the job titles and descriptions? Anything that could give us a clue as to where people may have worked. Did all the workers at the site work on the AEC contract?

Response:

There were no specific job assignments. Every week, you had to check the schedule to see where you were going to work. Workers sometimes rotated between jobs daily.

Bill Murray:

Was the Naval Fuels contract going on at the same time as the AEC contract?

Response:

That contract started in the 1960s. It was going on when I came to work in 1967.

Response:

The Navy Fuels was in the R & D section.

Bill Murray:

It overlapped the AEC contract.

Mark Lewis:

If you know of any retired personnel from the dosimetry program, they may have very valuable information for the site profile team.

Response:

Some of these people are still alive. One of the men from the bioassay programs is still around. We can talk to some of them.

Mark Lewis:

As we mentioned before, classified interviews can be arranged.

Comment:

They rotated workers in and out of the “hot” areas under the terms of the contract.

Mark Lewis:

That will make it hard to figure your dose... if you worked on one contract one day and another the next.

Comment:

I’ve seen them take a dosimeter with a high reading and tap it on a desk to get the reading down to zero and hand it back to you.

Comment:

We did some work with uranium-233. They took regular readings from our pencil dosimeters and kept records. If you picked up a lot of radiation, you would be moved around to other areas. After a couple weeks, you would be working with uranium-233 again.

Mark Lewis:

Do the fire department and guards here have their own union?



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Response:

The guards have their own union now. They were not organized during the contract period.

Response:

We only had four guards – one per shift.

Mark Lewis:

What about the fire department – mutual aid?

Response:

If there was a fire, the local fire department was called. But we didn't have many fires, so it was usually handled inside the plant. Now we have a fire brigade – since the mid-1980s.

Mr. Murray continued his presentation by describing the types of information sources that are useful in developing the site profile. Are there any records that the team should know about? If they are business sensitive, they can be requested. If there are any radiation records that are available, they would be useful. Are they accurate and complete? Is there anyone with more information that should be interviewed such as radiation technicians or health physicists? The site profile team could meet with a group of workers, or have conference calls or exchange e-mails to gather information.

Mark Lewis:

You can ask whomever you want to come to your meeting, whether they are current employees or retirees, hourly or salary. It is your meeting – we are your guests.

Bill Murray:

It would be good to get maintenance people and the guards involved, too. Those people worked site-wide.

Mark Notich:

Were the maintenance personnel badged?

Response:

At one time, everybody in the plant was badged. The office workers are not badged any more.

Mark Notich:

Who maintained all the dosimetry records?

Response:

The safety department did.

Comment:

The company has all the records. Before they could be approved for decommissioning in 1993, they had to do an intensive site characterization. I don't know whether you can get it or not, but they have one because all the material that is being decommissioned is being transported to the burial ground.



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Mark Notich:

There should be a decommissioning plan filed with the Nuclear Regulatory Commission (NRC). We have looked at some of the records from the NRC on this site, and a lot of sensitive information has been redacted.

Comment:

You should be able to get the site characterization. They had to have that before they could begin decommissioning.

Comment:

In 1993, the company had “Equitech” come in to take samples for the site characterization. The radiation technicians had always taken soil and well samples – environmental-type samples. We filed a grievance and won. They had to turn the work back over to us. They did the site characterization before we ever started digging and moving and they made the determination of what to dig. Some of that material had been put there since the plant started up.

Bill Murray:

Mark Notich has been talking about these reports being redacted to take out the classified information. NIOSH has security-cleared personnel who can look at those documents before they are edited. We can ask NIOSH to look at these documents, determine if any of the redacted information can be used in the site profile, and request that the pertinent information be declassified.

More information on EEOICPA can be found on the OCAS website at this address: <http://www.cdc.gov/niosh/ocas/>. Site profiles that have been completed for other sites can be viewed there, as well as the SEC petitions that were discussed earlier. Additional information can be sent directly to NIOSH at either the mailing address or the e-mail address in the presentation.

Question:

I just want to clarify something. The information we are looking for will be from the AEC contract period and what was produced during that time period, correct? And if a building was used for that contract, and is still in use, it is included in the profile? I suspect that we are still using some of those buildings today. Or if the material was buried onsite – anything associated with that time period? Anything associated with any other contract is not applicable.

Bill Murray:

Correct. If the building was demolished and disposed of onsite, it is included also. Right now, we are only interested in the AEC contract.

Response:

We need to focus on that for you right now until we are told otherwise.



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Comment:

We just demolished the main building where most of the AEC work was done – the scrap recovery plant. We were still using most of the stuff from that building up until it was decommissioned. Some of the dry boxes from that time period are still over there – 2 years later.

Bill Murray:

They must have done an evaluation.

Response:

Yes, they had to do a profile. We drilled holes in the walls and the floors...

Mark Notich:

One of the questions here is “Who owns all this information?” If Nuclear Fuel Services is still the owner, it may take longer to get the records than it would if the NRC has the records.

Response:

The AEC and the NRC were involved in this all along. They should have the records. They did the site characterization to see what materials were out there – whether it was plutonium, uranium-233, uranium-235...

Mark Lewis:

People think that NIOSH and ORAU have all this information. But until it gets on this site profile – until the site profile team has the information – it doesn't exist. It is the site profile that determines the dose reconstruction results – because this document is what they use to get those results. Unless you know that the team has specific information, you should assume that they don't have it. The radiation dose is assigned from the records that are available. If you have letters or old records in the archives from the past, these can be very valuable.

Mark Notich:

The bottom line really is that it is better for the site profile authors to use documented information than what is in someone's memory from 1962. Getting information from the workers is necessary, but if you have a document to back it up – that is much better.

The USWA Vice President handed the team copies of the document NFS History, a timeline of the company since its inception in 1957.

Mark Notich:

Have the employees been given their dose records? That would be extremely helpful to us. If we can get those, we can remove the workers' names and personal information.

Response:

How long does the company have to keep these records? Is there a timeframe? What if we can get some of the older employees to ask the company to turn over an employee's dose records back to date of hire?

Mark Notich:

I would think that the company would have to maintain these records.



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Response (*turns to another attendee*):

You ought to go do that tomorrow.

Mark Notich:

That would be very valuable.

Response:

I'll ask (*name withheld*) how far back the dose records go.

Response:

We can do a FOIA (Freedom of Information Act) request for the dose records. That is an OSHA law.

Question:

How long do we have to get this information to you?

Mark Notich:

My next due date is September 30.

Bill Murray:

These site profile documents can be revised any time after that. Several site profiles have been revised based on information that became available after the profile was complete.

Mark Lewis:

From the labor standpoint, any information you can get that can be included in the first edition will make it a better profile.

Bill Murray concluded the meeting at 5:10 p.m., thanking the attendees for inviting the team to meet with them.