



NIOSH Dose Reconstruction Project Meeting On Rocky Flats Site Profile

Date:

June 23, 2004

Meeting with:

United Steelworkers of America Local 8031

Attendees:

Wildon P. Narcisse	United Steelworkers of America Local 8031
John C. Weyandt	United Steelworkers of America Local 8031
F.P.C. (Phil) Cruz	Safety Manager, Rocky Flats Security Officers Local Union 1
Tammy Cockroft	United Steelworkers of America Local 8031
Lewis M. DiGiallonardo	Joint Union/Company Safety Committee
Duronda Pope	Joint Union/Company Safety Committee
John R. Sullivan	United Steelworkers of America Local 8031
J.D. Thompson	United Steelworkers of America Local 8031
Rich Ostrom	United Steelworkers of America Local 8031
Jerry Harden	United Steelworkers of America Local 8031
Darryl Dubrouin	Vice President, Rocky Flats Security Officers Local Union 1
Steven E Trujillo	United Steelworkers of America Local 8031
Thomas R. Deherrera	United Steelworkers of America Local 8031
Carolyn Boller	Representative Mark Udall's staff
Rudy M. Mastellone	Joint Union/Company Safety Committee
Judy .A. Yeater	Joint Union/Company Safety Committee

NIOSH and ORAU Team Representatives:

Brant Ulsh – National Institute for Occupational Safety and Health (NIOSH)

William Murray – Oak Ridge Associated Universities (ORAU)

Robert Meyer – Site Profile Team Leader

Vernon McDougall – ATL International, Inc.

Mark Lewis – ATL International, Inc.

Proceedings

Mark Lewis opened the meeting at 1:15 p.m. by thanking everyone for coming and introducing himself. He explained that his primary function on the team is to get input from union workers, and that the reason the National Institute for Occupational Safety and Health (NIOSH) and the Oak Ridge Associated Universities (ORAU) requested the meeting was for a free exchange of knowledge that would be mutually beneficial. Mr. Lewis said that his 30 years of experience with the Paper, Allied-Industrial, Chemical and Energy Workers International Union (PACE) give him insight to the valuable knowledge that the workers could contribute to the accuracy and completeness of the Site Profile. He stated that he has firsthand knowledge that input from unions at Portsmouth (which was his site when he worked with PACE) is being incorporated into



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their Site Profile and this is a worthwhile venture. He then introduced Bill Murray, saying that he will be giving the presentation, Dawn Catalano, who would be taking notes for a complete, accurate record, and Vernon McDougall, who could help answer questions.

Mr. Lewis turned the meeting over to Brant Ulsh, NIOSH Office of Compensation Analysis and Support (OCAS). Mr. Ulsh said he could give a quick answer to an early question about how the document can help the plant workers. He explained that the Site Profile is used as a tool to do dose reconstruction. Mr. Ulsh also said that if something seemed to be missing or not quite right in the document, NIOSH and ORAU would welcome any input workers could provide. Mr. Ulsh then turned the floor over to Bill Murray, and said that his presentation would explain in detail how the process works. After thanking participants for their time and for including NIOSH and ORAU in their meeting, Mr. Murray introduced Robert Meyer as the team leader who oversaw the development of the Site Profile for Rocky Flats, and then asked everyone to introduce themselves around the table.

Participants voiced opinions of mistrust and dissatisfaction with previous studies at Rocky Flats during their introductions. The general feeling was that they had no confidence in the system and did not believe accurate dose reconstructions could be done for Rocky Flats, considering the fact that so many records are missing. Several participants stated outright that they are seeking Special Exposure Cohort (SEC) status due to the extraordinary circumstances and working conditions, and felt that the meeting regarding dose reconstruction was futile.

The attendees said they were familiar with the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), and had specific questions and issues they wanted to address right away. One attendee suggested that Mr. Murray skip general information slides to save time, and no objections were raised. Mr. Murray moved ahead to the section of his presentation that described the development of the Site Profile, explaining that they are broken down into six sections called Technical Basis Documents (TBDs). Mr. Murray said that the TBDs are written by subject matter experts and require multiple reviews and approval by NIOSH. Mr. Murray acknowledged that information gaps do exist in the documentation, but NIOSH and ORAU make assumptions in dose reconstructions to fill those gaps by using claimant-favorable assumptions that are intended to increase the probability the claim will be approved. He also said that NIOSH and ORAU are aware of, and have documented, many incidents at the Rocky Flats Plant in response to inquiries about the accuracy of the Site Profile. He explained that NIOSH and ORAU use additional information in reconstructing a dose, such as that from the occupational medical X-ray program, taking into consideration the medical techniques and equipments that were used historically. For example, X-rays required as a condition of employment are included in the dose reconstruction *in addition* to the dose in the DOE records. The amount is based on factors such as type of equipment used, since older equipment caused higher doses. None of the X-ray doses is in the official DOE dose records; this is one attempt for NIOSH to be claimant favorable. NIOSH and ORAU also look for evidence that workers were in a particular area to correlate with incidents and other documented doses.



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Several more questions were asked (see next section) and at about this point the meeting turned more to discussion rather than completion of Mr. Murray's prepared presentation.

Discussion Session

Concern/Question:

What is the development of the Site Profile going to accomplish? I worked with Watson/Miller in Washington and do not see that this process can help us.

William Murray:

It will help determine what occurred at the plant to help us understand the background for dose reconstructions.

Mark Lewis:

She suggested we do this – we also have Carolyn Boller from Congressman Udall's office with us today. NIOSH and ORAU have support from lawmakers who have faith in this program.

Concern/Question:

Are NIOSH and ORAU aware that \$10 million has been allocated for neutron exposure and is that the only funding there is?

Brant Ulsh:

There are other types of exposures covered as Mr. Murray will explain in detail.

Question:

What will NIOSH and ORAU do with the data collected?

William Murray:

The information will be incorporated into the Site Profile, and then the information is used to process claims and perform dose reconstructions.

Concern/Question:

How much will this exercise expedite claims processing? There are folks here who have been waiting two years for an answer already.

Brant Ulsh:

The Act was only passed in 2000 and NIOSH needed time to establish a process from the ground up. The organization, including the contracting team, was built to put the operation in place

William Murray:

ORAU was awarded the contract in September of 2002, and we have the responsibility to do the dose reconstructions. The first 1,000 claims took 14 months to complete; the next 1,000 were done in 14 weeks. This is a very detailed process; NIOSH and ORAU had to be meticulous and sure not to overlook anything in developing the process. There have been 4,000 claims processed now, and the goal is to complete 200 per week now that guidelines are in place.



Concern: (composite)

Rocky Flats has been the subject of many studies that have not benefited the workers to date. The workers' feeling is that doses can not be reconstructed due to the circumstances and events at the plant, and they are seeking Special Exposure Cohort status. Film badges were the only items considered 'legal record,' but chemical contaminants and incidents must also be taken into account, although they are too numerous to be consolidated into a report such as the Site Profile.

Production and security workers share the same concerns and dilemma. The guards have particular difficulty filing claims since they were never on the roster, despite the fact that they walked among the workers daily. The guards were never monitored and no record exists that they were in areas of concern. No valid dose reconstruction can be completed with such severely lacking documentation. The guards were pushed further outside the program (monitoring) because they were not part of the protective personnel equipment program. They were occasionally given a lead apron, but not much else. They had to remain with the material because they were guarding it. Thus there was frequent, unreported movement. Furthermore, readings were zeroed out when workers checked their records. Overall, there is no confidence in the process.

Vernon McDougall:

The National Oversight Committee (the Advisory Board on Radiation and Worker Health) instructed NIOSH to start up the outreach program in order to get this kind of information for Site Profiles. There is keen awareness that records do not contain many instances such as these.

Comment: (referring to page 4)

The x-ray devices used in the past were outside the norm, so typical medical dose calculations will probably not be appropriate for Rocky Flats. Also, there was no mention of radon in the Site Profile. Excessive doses were received resulting in synergistic effects of alpha emitters. There were cascades and many alpha exposures over time.

Question:

Can we get copies of the TBDs?

William Murray:

All approved documents can be found on the website. Mr. Trujillo has indicated that he has a copy already printed.

Question:

Would it reduce the dose of record to include x-rays?

William Murray:

No, the x-rays are calculated in the medical dose in addition to the dose of record. However, only x-rays required as a condition of employment, such as annual chest x-rays, are counted in the dose reconstruction. If you require an x-ray for an accident or condition outside of work, that dose would not be included.

Concern/Comment:

X-rays were used to determine beryllium issues here. They were done often and regularly.



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William Murray:

Since the X-rays were not considered a condition of employment, they are not included in the dose.

Concern/Comment:

The medical department did all full body decontamination functions – this should also be part of our dose history. There is no workers advocacy in this area.

Question:

Why were medically necessary x-rays (for beryllium) not included?

Brant Ulsh:

NIOSH looked at this particular situation and decided that only the X-rays that are required as a condition of employment would be included in the dose reconstruction.

Concern/Comment:

Workers had to go through whatever medical procedures the plant told them to. It was implied that keeping your job depended on compliance with requests for medical testing. Everyone was going on the assumption that non-compliance would invalidate worker's compensation rights.

Brant Ulsh:

I would strongly encourage you to make formal comment on these issues to NIOSH and submit them through official channels as described in Mr. Murray's handout and presentation.

Question:

Are the amounts of dose based on chronic or acute exposure? Was the amount of time spent in an area considered?

Brant Ulsh:

We use whichever is most claimant-favorable for external exposures, i.e., acute for photon, and chronic for environmental and neutron; internal exposures are always chronic. We use air concentrations to calculate annual intake for every year in the Site Profile.

Concern/Comment:

There were incidents of acute inhalation, particularly by the truck drivers during the fire.

Concern/Comment:

We never had 'whole body counts;' they were only over each lung and the liver, although the liver exams are not done anymore. The term is misleading and makes the program look better than it has been for us.

Concern/Question:

Will NIOSH and ORAU find the records necessary on background dosimeters for more accuracy in the Site Profile?

William Murray:

Yes, background badges are calculated in and work in your favor.



Concern/Question:

The panels of doctors who review the claims deduct environmental count from total dose on the record and this ends up giving the worker a negative. Is the legal dose going to show that?

Brant Ulsh:

NIOSH will add background back into the dose. Individuals who show a zero dose are given a missed dose to make up for it.

Vernon McDougall:

The legal dose is only part of what NIOSH calculates. The environmental and medical doses are added to the record. There are two parts of this law and two sets of claim forms to be submitted. One set goes to the Department of Labor (DOL). This is the claim (part) we're here to discuss today that includes compensation of \$150,000 and medical coverage for that cancer. The other part is for Workers' Compensation. The Department of Energy processes those claims, and that's where you come across the three doctor panel. The compensation program that NIOSH administers, and the team is here to explain today, falls under Subpart B.

Brant Ulsh:

Dose calculation is done using modeling based on information provided by the claimant. NIOSH tries to help each claimant get closer to get to a greater than 50% probability of causation by including doses other than the dose in the DOE records.

Concern/Question:

How much dose does it take to get the probability of causation over 50%?

Brant Ulsh:

Many factors go into that. For example, in skin cancer cases, ethnicity is important. Latency (the length of time between exposure and diagnosis of cancer) is an important factor. For lung cancer, higher doses are required to compensate smokers since smoking is known to cause cancer regardless of radiation exposure. Age at exposure also goes into the calculation. And different cancers have different levels of risk for a given radiation dose.

Resource Center:

The Resource Center does not adjudicate, we only figure the probability of causation based on numbers from NIOSH.

Concern/Question:

Wasn't there supposed to be a 'no fault' stipulation to the effect that if you had certain cancers or a certain exposure you were automatically qualified?

William Murray:

That situation is a variation of the program. Special Exposure Cohorts (SECs) are granted under certain circumstances. The requirement is that NIOSH could not do dose reconstruction for individual cases. There are four (4) approved SECs: 3 are gaseous diffusion plants and the 4th is a DOE facility in Amchitka Island in Alaska where nuclear devices were detonated underground between 1965 and 1971. The SEC claims are limited to 22 specified cancers. For cancers not on the list, a dose reconstruction must be done.



Brant Ulsh:

NIOSH is acutely aware of information gaps and has been directed by Congress to take the necessary steps to fill them and complete the claims. We first focused on those claims that could be done quickly, meaning those that were at either end of the spectrum (clearly compensable or clearly non-compensable). We are now moving on those that are in the middle.

Concern/Question:

Are other studies considered in the model? One Russian report said that Rocky Flats is off by a factor of 10. The particle size is not what we have experienced here. Is the information in the TBD based on particle size?

Robert Meyer:

Section 5 of the Site Profile has to be revised; the staff working on it came to the realization that it was too difficult to determine in the first iteration.

Question/Comment:

Is NIOSH aware of Langham's curve? The Mayak report in Russia is the closest to what's been going on at Rocky Flats – this site needs to be approached as a composite. We know the intentions are good, but people need help now.

Brant Ulsh:

Our risk models are based on recommendations from the International Commission on Radiological Protection, which are based largely on the atomic bomb survivors. Our intake/deposition models are also based on ICRP models, which are based on a composite of many studies and represent the consensus opinion on the best available scientific knowledge.

Concern/Comment:

Plant records are inaccurate and misleading. Badges were worn outside the lead apron, but not where it would read the actual exposure. For example, when working in gloveboxes, the badge was worn on the chest. But the exposure was to the lower body, so it would not be read. There were cases of high neutron and gamma doses in Building 371 that were so extreme that aprons were worn on both the front and back. Procedure dictated how the work was to be done. But people were in such a rush to get away from the danger that they would cut holes in the protective gear in order to work faster. Is that kind of information going to be included in the Site Profile?

Brant Ulsh:

That is the kind of input NIOSH needs to revise the documents.

Concern/Comment:

There have been four (4) deaths out of this plant that were proven to be due to sustained radiation exposure.

Concern/Comment:

Some highly shielded gloveboxes got in the way of the work; in order to complete tasks, workers would handle the material without the protection. This kind of exposure will never show up in dose reports.



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Robert Meyer:

Everything you mention would be considered in individual cases. Please read sections 5 and 6 of the document and make comments that would be helpful overall.

William Murray:

These issues also come up in the telephone interviews for evaluation of personal circumstances.

Concern/Comment:

There are too many variable at this plant to get an accurate Site Profile. There were no Q/A processes for dosimetry prior to 1993; it was supposed to be included in production procedures. Information is out there that could help sick people get paid.

Brant Ulsh:

NIOSH and ORAU have no way of knowing about these anomalies unless someone brings it up. That is the purpose of the outreach program.

Concern/Comment:

Workers don't want to be known for poor work habits. Management shamed workers into actions like leaving TLDs off when they reached their limit so they could finish vital work to help their country.

Comment/Question:

Are NIOSH and ORAU familiar with the Joe Albridge report regarding film badges and dose reconstruction?

Brant Ulsh:

I am not personally familiar with that report. NIOSH and ORAU are aware of the neutron dose reconstruction effort for Rocky Flats, and will use any information that project provides when it becomes available.

Concern/Comment:

Some people are incapacitated and can only remember so much. For example, ZIPPER (Zero Power Plutonium Production [ZPPR] production shut down in 1971 – that's all we know about it. How can you do dose reconstruction without knowing nuclides? Furthermore, classified information can't be disclosed, and NIOSH interviewers can't see badges.

Brant Ulsh:

NIOSH has the ability to conduct classified interviews with claimants who need to discuss that kind of information. We have conducted such interviews in the past at a claimants request and are willing to do so whenever necessary.

Concern/Comment:

Re-engineering created unwarranted doses. Shortcuts were taken because procedures weren't functional enough and did not give sufficient time for the job to get done.

Robert Meyer:

Look at what we found (in the Site Profile) and use it as a basis for a write-up to NIOSH; look for what's missing.



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Concern/Comment:

We are in the process of doing that. We wanted to prompt you to bring information back to NIOSH for further investigation with today's comments.

The Site Profile is the company profile only – it does not indicate any interviews or accuracy. We feel the records used are skewed.

Brant Ulsh:

NIOSH will go back and revise a dose reconstruction if new information is added.

Question:

What is the revision process?

William Murray:

The Site Profile is revised as we gather new data. Each revision has to go through the review process to be sure concerns are addressed thoroughly.

Mark Lewis:

Revisions to the document never go through the plant; the reviews are strictly NIOSH and ORAU.

Question:

Will a claimant get notification if NIOSH or ORAU finds an anomaly in the worker's record?

Vernon McDougall:

Notification is only given on the status of a claim. Records used for the Site Profile do not include individual files.

Brant Ulsh:

Claimants receive dose reconstruction reports. DOE records are used, and you can access your own record in accordance with the Freedom of Information Act. Claimants can also contest results if there seems to be an inconsistency.

Question:

How does NIOSH deal with a survivor filing a claim who can only relate what the deceased said?

William Murray:

NIOSH realizes there can be times when the interview does not yield a lot of information from survivors. Claimants can name co-workers who might be able to offer more details.

Question:

Why are so few claims paid if NIOSH keeps saying the program is claimant-favorable? How many claims have actually been paid to Rocky Flats applicants in comparison to the total number filed?

Brant Ulsh:

That information is on the NIOSH website and without the information on hand the only accurate answer would be that about 30% of the dose reconstructions NIOSH and ORAU have done so far have had probabilities of causation less than 50%. However, you have to remember



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that the claims are not done randomly – NIOSH and ORAU do the easy ones first so that percentage will most likely change over time.

DOL:

There are currently more than 800 claims pending; 863 are at NIOSH. Twenty-five claims have been paid a total of \$25 million. These are Rocky Flats employees who have been paid mostly for chronic beryllium, not for cancer.

Mark Lewis:

You can get the breakdown on the website.

Robert Meyer:

Sections 2-6 of the Site Profile were approved in January. This has helped get more claims processed.

Brant Ulsh:

NIOSH does program evaluation reports, and then revises claims with the new information.

Concern/Question:

How does NIOSH access dose solubility vs. non-solubility?

Robert Meyer:

To do so requires an understanding chemical forms used at the site. This involves experts who use the latest data and models to come to a conclusion.

Concern/Comment:

The system is fundamentally flawed – doses didn't migrate enough to be detected. We suspect there are many plant workers who received doses but they can not get the numbers because of this.

Robert Meyer:

Models are run with new information as it is obtained, but NIOSH has to make assumptions when data are not available. Doses are calculated using the highest possible numbers.

Concern/Comment:

Plutonium is bone-seeking; what's in my lungs will never show up.

Robert Meyer:

If there is any room for doubt regarding solubility, NIOSH will always go higher in the assumption. Any reasonable possibility will go on record as whichever will give the claimant the highest dose. Most of the claims paid for Rocky Flats have been for lung cancer with positive results for plutonium or for leukemia.

A history of concentrations is accounted for in Section 5 of the Site Profile. Recommendations have been made to NIOSH based on findings. The team has been spending a lot of time in the records center looking for new information. The fire and accident history makes Rocky Flats one of the most difficult sites to evaluate. The team has attempted to put all potentially dangerous accidents in Section 2. We have been to Los Alamos where the records are kept to check on any additional incidents to research. With this additional information, we can see if we originally recommended the right dose. NIOSH will consider all feedback, although paper



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records are best. Anything that you can document or submit in writing has to be looked at according to the review process.

Concern/Question:

Have incidents that occurred since 1977 been used? There must be records since then.

Robert Meyer:

The team was unable to find any records; if you can get anything it would be greatly appreciated.

Concern/Comment:

There was a chronic issue in Building 771 that should have been included in the Site Profile. It ended up in a shut-down with no explanation later.

Robert Meyer:

The team did see records up to the late 1990's and used that information for Section 5 of the Site Profile for calculating doses. Section 2 is only historical information, so it would not be included there.

Concern/Question:

What scale is required for an incident to be documented? Accidents happen when workers don't follow procedures and this happens more often than they would like to admit. What size dose is required to make it into the documented record?

Robert Meyer:

Ideally, these kinds of incidents are used for an individual worker's dose reconstruction, not the development of the Site Profile.

Concern/Comment:

Perhaps incidents such as these should be catalogued in a new section of the Site Profile with specifics to document time, place, and dose.

Question:

Will small incidents such as these raise the baseline?

Robert Meyer:

Information about smaller occurrences will more likely be used to fill gaps in dose reconstructions.

Question:

What have NIOSH and ORAU learned from other meetings?

Brant Ulsh:

One example is that a concern was raised at a meeting in Hanford regarding the underestimation of organ doses when badges were worn at chest level, but the organs were at waist level. This is a concern for glovebox workers and we are currently evaluating what effect this might have.

Concern/Comment:

Workers saw high counts on badges as a means for the company to administer unjust punishment with loss of hours or overtime. Workers would shield or hide their badges in order to stay on



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payroll; they also would sign waivers in order to get more hours without being properly informed of the dangers.

Question:

What happens if a worker doesn't get any diagnosis for 20 years? Will the program be gone?

DOL:

This is an entitlement program similar to the black lung program that has been in place since the 1940s.

William Murray:

If there are no more questions the meeting will break up shortly, but please note that the addresses and procedures to submit your questions and concerns to NIOSH are included in your copy of the presentation.

Attachments:

- Sign-in sheet
- Presentation by William Murray: *Development of the Rocky Flats Plant Site Profile*
- Technical Basis Document for Rocky Flats Plant – Introduction