

National Institute for Occupational Safety and Health (NIOSH)  
SEC Worker Outreach Meeting for the Los Alamos National Laboratory  
(LANL)

**Meeting Date:** September 17, 2008, 4:00 p.m.

**Meeting with:** New Mexico Building and Construction Trades Council (BCTC), Española, New Mexico

**NIOSH Worker Outreach Team**

Greg Macievic, PhD, National Institute for Occupational Safety and Health (NIOSH), Office of Compensation Analysis and Support (OCAS), Health Physicist

Wilfrid “Buck” Cameron, Advanced Technologies and Laboratories (ATL) International, Inc., Senior Outreach Specialist

Mark Lewis, ATL, Senior Outreach Specialist

Mary Elliott, ATL, Writer/Editor

**Also present:**

Loretta Valerio, New Mexico Office of Nuclear Workers’ Advocacy, Director

**Proceedings:**

Buck Cameron opened the meeting at approximately 4:25 p.m. He briefly explained the Energy Employees Occupational Illness Compensation Program Act (EEOICPA or the Act), which was enacted by the U.S. Congress in 2000 to compensate workers from the U.S. Department of Energy (DOE) nuclear weapons complex who became ill as the result of their occupational exposures to radiation and toxic chemicals. The EEOICPA provides for compensation and medical care for these workers under two subtitles: Part E for diseases caused by exposure to toxic chemicals and Part B for cancers caused by exposure to ionizing radiation. The National Institute for Occupational Safety and Health (NIOSH) handles only Part B claims.

[Name redacted] asked if subcontractors are eligible to apply for compensation and if they had to work onsite. Mr. Cameron explained that subcontractors are eligible, but they must have worked onsite at a nuclear weapons facility such as Los Alamos National Laboratory (LANL or the Lab) or Hanford to meet the employment criteria. The worker submits a Part B EEOICPA claim for radiation-induced cancer to the U.S. Department of Labor (DOL), the agency that is responsible for verifying the worker’s medical diagnosis and employment at a DOE nuclear weapons site. The DOL then forwards the claim to NIOSH for dose reconstruction. NIOSH requests the worker’s radiation dose records from DOE. Those records and any other available exposure information are used to reconstruct the worker’s radiation dose to determine the probability that the worker’s cancer may have been caused by radiation exposure.

The Special Exposure Cohort (SEC) was written into the Act because the records at many of the nuclear weapons sites are not adequate to reconstruct radiation doses for many workers. The SEC provides for a petition to be filed on behalf of a class of workers to add that class to the Cohort. If NIOSH determines that dose reconstructions are not possible for the class, eligible workers can be compensated without a dose reconstruction.

Mr. Cameron stated that NIOSH acknowledges the possibility that many construction and building trades workers fit into that category. He cited the existing SEC class for all LANL employees through 1975, which was added to the SEC because there is a lack of internal monitoring information for certain radioactive materials during that period. He introduced [name redacted], a LANL employee who has filed another SEC petition on behalf of a class of LANL workers from 1976 through 2005. Mr. Cameron also introduced Greg Macievic, the NIOSH health physicist who is evaluating that petition. Dr. Macievic is searching for records to determine whether or not NIOSH has sufficient information to perform accurate dose reconstructions for the class of workers named in the petition. Mr. Cameron asked the attendees to describe their work activities at LANL as well as the practices that were in place to monitor their radiation doses. He emphasized that any information they share with Dr. Macievic regarding their work environment and monitoring practices during the period covered by the petition may help workers from the building and construction trades receive compensation for their cancers under the SEC.

[Name redacted] asked whether it is necessary for a person to have a dose reconstruction if he worked in the same shop as a co-worker and files a claim for the same cancer, or if he can be compensated by giving an affidavit that several people from the same work area developed the same cancer as someone who received compensation. Dr. Macievic responded that a dose reconstruction must be done for each individual. NIOSH is looking for information from workers regarding their work assignments and the monitoring practices in different technical areas during the period from 1976 to 2005 to evaluate the petition. NIOSH is hopeful that a data search of LANL records may turn up radiation work permits (RWPs), contamination surveys, and other documents that may provide raw data that can be used to model radiation doses. Dr. Macievic explained that there may be an associated dose for workers in the same trade, but NIOSH cannot duplicate the dose for all of the workers because it is unlikely that the associated workers would receive the same dose unless they were doing exactly the same jobs in the same location for the same length of time – each individual dose must still be calculated. However, NIOSH can develop a model that can assign extra dose to the type of activity the workers were doing that was not monitored at the time. As an example, Dr. Macievic stated that the guards and firefighters often discovered after the fact that they had been sent into contamination areas when they had to decontaminate their equipment. In addition to one-time contamination incidents, NIOSH needs to know about routine work practices in which unmonitored or unprotected trades workers were sent into areas where other workers were monitored or wore personal protective equipment (PPE).

[Name redacted] stated that before the Tiger Team investigation, construction trades workers were often sent into “hot” areas unmonitored and without protective clothing. After the investigation, they were not always monitored but were required to wear booties and smocks in many of the same areas where they previously had worked without protective equipment. [Name redacted] added that a rope or line was often the only thing that distinguished a “hot” area from a clean one.

Mr. Cameron explained that Mary Elliott was recording the meeting and taking notes. Ms. Elliott explained that the recording is used only to prepare accurate minutes of the meeting. NIOSH redacts, or removes, any personal information that is protected by the Privacy Act before the minutes are posted on the NIOSH Web site.

Dr. Macievic stated that when a worker’s dose information is lacking, he is put into a general job category, such as a laborer or a chemical operator. Like the guards and firefighters, construction and trades workers at LANL work around equipment and piping that has carried a wide variety

of radioactive materials and that varies from facility to facility. He stated that information workers can give about specific time periods may help NIOSH locate data. If the records exist, they may contain data for monitored workers or workers who had bioassay testing for specific materials. The records may also provide radiation levels and contamination levels so NIOSH can determine the radiation doses in a given place at a given time, which may help NIOSH associate the doses for monitored workers with the construction and trades workers who were in that area at that time.

[Name redacted] asked where Dr. Macievic planned to find the records that he was talking about. He commented that he understood that many of the medical records that have not been available are in boxes in a basement somewhere. He stated that, while he understands and supports the NIOSH efforts to locate the records, he would like to hear how Dr. Macievic proposes to get those documents. Dr. Macievic responded that he is not searching for the medical records because those are provided during the initial part of the claims process. NIOSH is looking for the survey reports that contain the source data from the measurements taken by radiological control technicians (RCTs) in the field. NIOSH has only sparse dosimetry and bioassay data for the class of workers named in the petition – guards, firefighters, construction and trades workers. NIOSH is searching the DOE Records Centers to try to locate records that contain data for the radiation and contamination levels so they can use that, along with what they know about what trades workers did in certain areas, to model radiation doses that reflect what those workers would have received for the type of work and the amount of time they spent in those areas. The purpose of the SEC evaluation is to determine whether this information is available so NIOSH can assign radiation doses for the class of workers named in the petition. [Name redacted] commented that the TLD records are on the hill. Dr. Macievic responded that NIOSH is not looking for TLD records, but for the RWPs and contamination surveys that have the radiation measurement data, which is independent of the individual data.

[Name redacted] commented that he had “burned out” in 30 seconds at one of the reactors in the 100 Area at Hanford and was not allowed to go back in for seven days. He quit because he didn’t want to wait around for seven days without working. He wondered if that situation had been recorded as an incident. A discussion between [name redacted] and Dr. Macievic established that the burden is not on the worker to prove what materials and exposures they may have had in certain areas. The burden of proof is on NIOSH to locate the information that may determine whether a dose can be assigned to unmonitored workers in those areas during a particular time. Dr. Macievic acknowledged that [Name redacted] had made a good representation in the SEC petition of the radioactive materials associated with the different technical areas at LANL. Specific information from the workers can help NIOSH find information for the petition evaluation – for example, the technical area or building, the year, the type of activity, the length of time spent performing a certain job. It is also helpful to know if the worker did not find out until after a job that he had been working in a contamination zone and whether that was a routine occurrence. If NIOSH cannot find the information to calculate the “missed dose” for the whole group of unmonitored workers, then the class may be added to the SEC. Mr. Cameron added that Dr. Macievic’s job is to figure out if NIOSH can assign the dose. If not, then the class may become part of the SEC. If the “missed dose” can be determined, the additional information will be used in dose reconstructions.

[Name redacted] asked why NIOSH did not start with the “hottest” site, TA-53. [Name redacted] added that the Old DP Site, TA-55, TA-50, TA-53, the Beam Line, and CMR were all high radiation areas. Dr. Macievic responded that NIOSH can query the records database for survey data for a particular facility in a particular year. [Name redacted] commented that the

first LANL SEC covers the entire LANL site. Dr. Macievic responded to [Name redacted] that, in order to search the database for specific information, NIOSH needs the input from workers, such as lengths of time spent in specific activities and descriptions of the monitoring practices (or lack of them) when they were working on equipment in certain areas, to build the whole picture for a worker in a specific activity in a facility. Dr. Macievic explained that a dose reconstructor might assume from a worker's job classification that he was in a clean area without an understanding of the type of work he was doing. NIOSH hopes to find many useful records in the data search. [Name redacted] asked if NIOSH is looking at the sources of radiation, such as the accelerator in TA-53. Dr. Macievic confirmed that NIOSH is looking at those sources as well as getting the input from the workers in the proposed SEC class so NIOSH can focus the search to find survey data on the sources and activation products associated with them.

Dr. Macievic asked the attendees if they worked all over LANL or if their work was concentrated on particular facilities or technical areas. The consensus answer was that construction trades workers went everywhere. Dr. Macievic asked if RWPs were posted for all of their jobs. The attendees responded that there were RWPs most of the time. [Name redacted] stated that when the pipefitters cut into pipe they suited up and wore respirators for jobs that had limits ranging from five minutes to five hours.

[Name redacted] commented that the dose reconstruction was based almost entirely on a worker's TLD records. Dr. Macievic responded that dose reconstruction uses information from the site profile and other documents in the NIOSH database in addition to the worker's dosimetry records to estimate the worker's dose. Survey reports and other documents from the petition evaluation data search will be added to the database so there is hard data that the dose reconstructors can also use to factor into the dose estimate instead of assuming the workers were in a clean area.

Dr. Macievic explained that the new information will also be used to update the LANL Site Profile. The worker's TLD data reflects the external dose. Other dose components that figure into the dose reconstruction are the medical, internal, and environmental doses. An airborne contamination event may not cause an increase on the TLD, but if a contamination survey report documents that there was potential contamination from resuspension, the internal dose may increase. The dose of record may stay the same, but there will be a "missed dose" in the site profile that adds internal and external dose for unmonitored trades workers in that area. The years or time periods are important, as in the case of the guards, firefighters who responded during the Cerro Grande fire. A "missed dose" associated with the detection limit of the TLD is also added to the dose estimate.

The intention of the data search during the petition evaluation is to see if there is information available that will help NIOSH create the "missed dose" that can be added to the workers' dose estimates. There is not much information in the LANL dosimetry records about the monitoring done for many of the radionuclides so NIOSH will look for some of the higher readings associated with that type of radionuclide and assign a dose based on those readings. NIOSH located LANL records from 1992 on in Denver but is still working with LANL to locate records from 1976 to 1991. If records are available for that time period, NIOSH will code the data they find in the records for the computer program that models the dose.

[Name redacted] stated that he only found one paragraph on LANSCE in the LANL Site Profile; the rest of the information is on LAMPF (Los Alamos Meson Physics Facility), which he said is outdated material. The Beam Line was converted from low-energy meson physics to high-energy neutron physics without engineering upgrades to the Beam Stop and Crypt area in 1989

and the facility's name was changed from LAMPF to LANSCE (Los Alamos Neutron Science Center). All of the engineering upgrades were done from there up. He said that he has a problem with there being only a single paragraph about LANSCE because the experiment went from 1989 to 1998. [Name redacted] added that the Model 776 TLDs only recorded from 25 to 50 MeV (megaelectron volts), but in 1990 LANSCE was already reaching 800 MeV on the Beam Line. The Beam Stop and Crypt is the only Category 3 area in that area.

Dr. Macievic asked if any of the attendees worked in the area while LANSCE was operating, or if work was only done in the area when the operation was shut down. [Name redacted] responded that the ironworkers were stationed at end of the Beam Line. He said that someone had explained to him that the ironworkers were positioned like they were "behind targets on a rifle range." Dr. Macievic asked which building [name redacted] worked in at the time. [Name redacted] responded that he was working in Building 3M, the category 3 fission reactor. He said that he had given NIOSH a 1994 report that places the ironworkers at those buildings. Dr. Macievic said that he would take a look at it. [Name redacted] commented that LANL scientists wrote articles for periodicals to explain the experiments at LAMPF and LANSCE. He added that the Lab is holding back information on the transition from meson physics to neutron physics. He stated that a 1998 surveillance study stated that the TLD stations were recording in the thousands.

[Name redacted] told Dr. Macievic that he had started working in the area in 1994. He stated that half of the ironworkers working there at the time had since died from cancer. [Name redacted] explained that he was among the ironworkers who added 20,000 tons of additional shielding blocks because the beam stop was not stopping the neutrons. Dr. Macievic confirmed that neutron radiation produces a lot of scatter. Additional shielding was also placed on the hangar doors to stop the scatter. [Name redacted] stated that he would provide the periodical in a pdf file.

Dr. Macievic stated that the information from [name redacted] would be useful in searching LANL records for terms such as "neutron measurements," "neutron energy," and "neutron detectors" that may help NIOSH find survey information. He asked [name redacted] when the Lab added the extra shielding. [Name redacted] responded that the project lasted for two years. The project originally called for the addition of 10,000 tons of additional shielding but another 10,000 tons was added because the first 10,000 tons could not stop the neutrons. At one point during the project, the Lab installed new sensors at the end of the Beam Line and then the ironworkers were transferred to the 38 Shop.

[Name redacted] stated that the TLD that he wore was worthless since it did not detect radiation above 50 MeV. Dr. Macievic responded that the "missed dosed" associated with the activity can be determined from the energy range of the beam. [Name redacted] stated that the area TLDs at the Lagoons at the meson facility (where the ironworkers were installing shielding) read in the 2,000 to 3,000 millirem range, some of the highest at LANL. [Name redacted] added that the high range was noted in the 1999 LANL Environmental Surveillance Report. [Name redacted] stated that the surveillance said that in previous years, the readings were the same or higher. Dr. Macievic noted the presence of the area TLD monitors at the Lagoons. [Name redacted] stated that after the ironworkers were transferred to the 38 Shop from the beam stop, the Lab "wiped out all evidence" that the ironworkers had been there and destroyed the Burn Shed where he and [name redacted] had worked day and night to burn the shielding block to fill the orders for the different shapes and sizes. The blocks were between six inches and three feet thick and were drilled and tapped with a picking eye. The first 10,000 tons of shielding block was gathered from used shielding block from all the LANL facilities because they were in a hurry to get the

shielding block up at the Beam Line. The second 10,000 tons of used shielding block came from Oak Ridge (500 semi loads of two 10-ton pieces). [Name redacted] stated that he had been told that some of the blocks from Oak Ridge were going to be “hot.” Some of the LANL blocks came from the Bone Yard at the meson facility where the bulk shielding was discarded after the Beam Line shots blew holes through them. Dr. Macievic commented that there had to have been a lot of activation in the steel, which might have caused the 500+ rem dose in [name redacted] record. Dr. Macievic asked if the Bone Yard was a posted area. [Name redacted] stated that people jogged through the area even though there was a cable across the road.

[Name redacted] stated that NIOSH will have difficulty getting records from LANL. Dr. Macievic responded that NIOSH is not relying on the Lab to produce the records. [Name redacted] expressed his disappointment in the EEOICPA claims process, stating that his problems began when DOL used the wrong ICD code for his cancer. He hopes the SEC will be granted so he can be done with the process.

Dr. Macievic stated that NIOSH must find enough data to show what was happening in the LANL facilities to assign dose to the proposed class of workers; if the data is not there, the SEC may be granted. The LANL SEC for the earlier period was granted because there were not enough records to perform dose reconstructions for the entire class of workers. If an additional SEC class is granted through 2005, LANL’s recordkeeping may be in question with federal regulatory statutes. [Name redacted] commented that LANL’s operations are experimental by nature, so the Lab never knows the outcome from the onset. Dr. Macievic responded that the puzzle that NIOSH needs to solve is whether LANL knew about everything that they needed to monitor for and if they did the bioassay and other field survey measurements to keep the records that NIOSH needs to evaluate the petition, or if LANL documented that bioassay or other measurements were not needed because the workers’ radiation doses were within the regulatory limits. Dr. Macievic is hopeful that NIOSH can locate the records with the raw data showing the base level so that the workers’ cumulative dose records – the summary information – will not have to be used.

[Name redacted] excused himself from the meeting due to another commitment. He expressed his thanks to the attendees for coming to meet with the NIOSH team and to [name redacted] for his time and effort spent preparing the SEC petition. He noted that the meeting had been in session for more than an hour and encouraged everyone to give their input.

Dr. Macievic asked if the attendees had participated in a regular bioassay program or if they had been given a baseline bioassay test the first time they had worked at LANL. Several attendees responded that they gave a baseline sample. They did not recall participating in a regular bioassay program. The consensus response was that LANL required bioassay testing for trades workers only if there was a contamination event. They worked all over the site during their careers. Most of the pipefitters had worked at TA-55 and the old DP site. Some of the attendees described their experiences:

- [Name redacted] recalled being scrubbed several times after a contamination event but still having a “hot spot” on his hand. The RCT told him to wear a glove home so he could “sweat the rest of it out.”
- [Name redacted] stated that he went home with a “hot” boot in 1994 or 1995. LANL sent RCTs to his home to take 100 swipes. They also checked his truck for contamination as well as every place he had been that day. He told Dr. Macievic that he had been removing equipment and piping in TA-50 and there was a spill. The RCT who was with him said that it was not a “hot” job, but the count on the floor

swipe was over one million dpm (disintegrations per minute). He was not wearing booties. The count on the sink trap was a half million dpm. He was working less than a foot away from the sink trap and was not wearing a respirator. He had not been wearing booties or protective clothing. Dr. Macievic asked if he had left a bioassay sample. [Name redacted] responded that he had a whole body count but did not know the results. He stated that he had not worked at LANL again after that because he didn't feel safe there.

- [Name redacted] also recalled working in the pump rooms at TA-55 for three or four hours at a time without a TLD so there was no way of knowing how "hot" it was. He recalled stripping down to his underwear when he exited but was told that he was not "hot." Dr. Macievic explained that TLDs do not pick up much radiation above the detection limit unless there is a lot of activity, such as the activation of a large sample of radioactive material; unless a worker is around that type of activity every day, the TLD will not show much accumulation. [Name redacted] stated that he was wearing four sets of coveralls that were taped up with a rain suit over them.
- [Name redacted] explained that there were really three different TLD records for monthly, quarterly, and yearly periods. He stated that the dose reconstructor had only had his yearly report. Dr. Macievic responded that the yearly report is not a summation of the quarterly reports. [Name redacted] stated that when there is a space in the margin of the monthly report, the Lab is either stating that the badge is too "hot," or the badge was lost, or a temporary badge was issued. There were lots of spaces in the margins when he looked through his records. When he started comparing his quarterly reports, they did not match up with his TLD records. He noted that he had kept the TLD he was wearing the last time he walked off the job and had kept it. When he looked at his TLD records, the badge had been recorded. He questioned how they could have recorded the badge when he still had it. Dr. Macievic responded that NIOSH will look at the data that is available and reserve judgment on the integrity of the program.
- [Name redacted] commented that when he was assigned to TA-55, he worked next to the glovebox workers who wore lead shielding (aprons).
- Loretta Valerio stated that when she worked at TA-55 scheduling whole body counts for employees, some of the workers had not had one for seven or eight years. Her job had been to prioritize the schedule based on worker's job descriptions and if they were in the plant on a daily basis. [Name redacted] added that they had whole body counts every year from about 2000 or 2001. Ms. Valerio stated that she had to reschedule workers' appointments for whole body counts because the *in vivo* equipment was down. Dr. Macievic said that the records for whole body counts for specific materials are sporadic depending on what group was involved. He would like to find more information about the criteria over time. The site profile has some information, but he is interested in the 'triggering mechanisms' for requiring urine samples, fecal samples, and whole body counts – is it an incident or a particular job, does a contamination incident do it or does a certain contamination threshold trigger the request for a bioassay sample.
- [Name redacted] replied that he gave a bioassay sample yearly. He recalled doing a nasal swipe for every "hot" job. He was given a bioassay kit to take home if a nasal swipe was contaminated. Dr. Macievic asked if the nasal swipes were done all the

time or only in plutonium areas or where there were other radionuclides. [Name redacted] said that it depended on whether the nasal swipes were available when they left a “hot” job, but almost always at TA-55, CMR, and TA-50. If the CAMs (continuous air monitors) went off while they were in an area, they had to go to the hallway for a nasal swipe and had to leave PF4 until the swipes were counted.

- Ms. Valerio stated that it took her almost a year to convince NMT that workers needed special respirators in the Evaporator Room. [Name redacted] stated that work assignments in that room required a full face respirator with an air supply.

Dr. Macievic asked the attendees if they wore breathing zone samplers when they worked in high contamination areas. He also asked if the RCTs specified the need for special equipment based on the surveys for the RWPs. [Name redacted] responded that the RCTs issued the special equipment – for example, “the RCTs had a kind of heat exchanger that they put on us” when they worked in Room 401 with the glovebox and in the equipment room. Dr. Macievic asked when the dosimetry policy changed to the RCTs giving them dosimeters. [Name redacted] responded that the policy had changed slowly. He stated that he had come out of a “hot” area to check his hands before he ate lunch and found the machine off. When he told the RCTs that the machine wasn’t working, they said he had turned it off. Dr. Macievic stated that NIOSH is looking for the reports so the evaluation is based on real data. He asked if the nasal swipes were ever recorded. [Name redacted] responded that it depended on the job they were doing. He said that if he came out of the equipment room with 4 sets of coveralls and a rain suit and full face air supply, by the time he had stripped down to his underwear, there was never any contamination on his body even when the suit was contaminated. Dr. Macievic confirmed that the contamination was just to the measuring instrument. He commented that tritium and some other radionuclides are able to penetrate protective equipment and cause contamination. He also noted that a gradual introduction of radiation protection measures probably indicates that the various groups and RCTs were able to make independent decisions about those measures.

[Name redacted] initiated a discussion about the RWP process. Dr. Macievic asked the attendees if it was common practice to have an RWP for every job. [Name redacted] responded that RWPs came later. He recalled that there were many jobs that they did not even have safety meetings or RWPs, up until approximately 2000. He stated that he worked in the construction zones where they did not do much maintenance work, but they did encounter “hot spots” where they were told to stay behind a tape or a line.

[Name redacted] stated that from about 1975 through the 1980s, they were paid 10% extra on a “hot” job if they were working very close to a taped off area. He began working at LANL in May 1975. His first overtime weekend job was a few weeks later and a RCT was on the job site with them for spot checks. They were using a cutting torch so there was airborne material. Dr. Macievic noted that RWPs were not a common practice at the time. [Name redacted] stated that RWPs were not posted prior to the Tiger Team investigation.

[Name redacted] asked Dr. Macievic if NIOSH had contacted any of the RCTs from the petition time period. Dr. Macievic asked if the attendees could provide him with names of some of the RCTs who were taking measurements in the field during their jobs. They responded with several names: [name redacted] at DP and CMR; [name redacted] at TA-55; [name redacted] at TA-55; [name redacted], who had a very long career at LANL and worked at TA-50 toward the end of his tenure; [name redacted] at TA-55; and [name redacted]. Dr. Macievic commented that these names may also be useful in a database search to locate reports containing survey data. [Name redacted] asked Dr. Macievic if it would be useful to have the names of some of the building

managers. Dr. Macievic replied that NIOSH prefers to talk with the personnel who actually took the field survey measurements because management personnel sometimes take offense when they are questioned about the programs. [Name redacted] commented that he would expect the same from the technicians. [Name redacted] commented that the technicians may be able to help Dr. Macievic locate the documents. Ms. Valerio commented that [Name redacted] was an RCT who worked all the 'hot' areas at LANL and is now retired. She volunteered to contact the RCTs who have retired to ask them to call Dr. Macievic. Dr. Macievic commented that telephone conversations would be limited to informal discussion on an unclassified level, such as the names of forms and reports that were used to record survey data and other information. [Name redacted] noted that [name redacted] is a long-time employee at the LANL hospital and may be able to help locate retirees.

[Name redacted] recalled that DOL had held meetings with LANL employees and asked questions about their job activities. She noted that the DOL should have notes on all of those discussions. Dr. Macievic stated that the DOL information is generally personal information about the workers who were interviewed and not the field data that NIOSH needs now. [Name redacted] commented that some LANL employees may not want to talk with NIOSH because they are angry about how long dose reconstruction is taking. Dr. Macievic acknowledged that the dose reconstruction program started up under pressure to get dose reconstructions done and many site records were not immediately available.

A discussion ensued regarding illnesses relating to the chemical exposures at LANL. [Name redacted] stated he and several other coworkers have developed thyroid trouble that may be related to their work at LANL. He added that his thyroid condition started when he was working at TA-55 and continued to worsen during the four years that he worked there. Dr. Macievic stated that NIOSH has information for Part B thyroid cancer claims but not for Part E claims for other thyroid illnesses.

Some workers may have gotten a small radiation exposure in addition to lot of chemical exposure. [Name redacted] stated that he worked around a lot of chemicals at LANL. [Name redacted] commented that there are lists that show the chemicals that were used at LANL. [Name redacted] commented that the cans on their respirators often leaked enough that they could taste and smell the chemicals. [Name redacted] commented that workers often got a "double whammy" when the chemicals contained radioactive waste. He noted that Area L in TA-54 (the "hot" dump) was where the "pigs," or plutonium isolation ground storage tanks, contained the high-level radioactive waste. He added that the LANL site profile refers to these "pigs" as shafts but does not give any further information on them. Dr. Macievic asked if [name redacted] worked around the "pigs" as a routine activity. [Name redacted] responded that he had helped take the covers off the tanks when trucks delivered canisters containing high-level waste. He added that NIOSH does not seem to know many things about LANL. Dr. Macievic responded that since LANL is such a large site with a very long history, it is often a difficult task to locate information.

Dr. Macievic thanked the attendees for meeting with NIOSH to share their experiences and provide contact information for others who worked at LANL. He stated that NIOSH will revise the LANL Site Profile to include new information that is found during the SEC petition evaluation process. He added that claimants may also submit new information to appeal denied claims.

Dr. Macievic dismissed the meeting at approximately 6:00 p.m.

## ATTACHMENT A:

### Work History Information

Use the following as a *guide* to prepare your statement for NIOSH. Try to provide as much information as possible to include dates, locations, who, what when, where, why, and how. The key information to be obtained is radiation exposure and inadequate or no monitoring for those exposures. NIOSH will use this information to evaluate a petition to add a class to the Special Exposure Cohort of the Energy Employees Occupational Illness Compensation Program Act. If this class is added, eligible claims will be compensated without the completion of a radiation dose reconstruction of the probability of causation.

### Employment History

Job title, start date, end date

- Number of hours worked per week
- Number of hours per week the job involved potential exposure to radiation and/or radioactive materials
- Buildings/locations in which you worked (include the type of duty performed at each location)
- Types of radioactive material(s) present or processed, and what form(s) (solid, liquid, gas)
- Amount of radioactive materials present or processed (ounces, pounds, kilograms, drums, etc.) over what time period
- Types of radiation-generating equipment (X-Rays, criticality reactors, or accelerators) that were present or used
- Exposure/contamination control measures used
  - Hoods, gloves, respirators, booties, smocks, etc.
  - What type of shielding was present
  - Were only some workers provided with this equipment
  - What was the distance from the material, process, or equipment

### Radiation Monitoring Information

- State whether you or co-workers (same job category) routinely wore radiation dosimetry badges
- Badge information: how often worn, how often exchanged, and where was it worn
- If worn on front of the body, did you face toward or away from the radiation source
- Did other workers (different job category) in the same area wear radiation dosimetry badges
- Did other workers (different job category) wear different radiation dosimetry badges than you
- Did you participate in a biological radiation monitoring program (nasal smears, urine samples, fecal samples, whole body counts)
- State the time period(s) you participated

- Was the urinalysis kit provided for a particular radioisotope (i.e.: plutonium, uranium)
- Do you have copies of your dosimeter badge or biological monitoring records?
  - Are you aware of any discrepancies in your records between special, monthly, and annual monitoring?
- State whether you routinely surveyed yourself (frisked) for external contamination.
- Was there general air monitoring for radiation performed in the work environment (if yes, indicate when this occurred)

## **Radiation Incidents**

- Were you ever involved in an incident potentially involving radiation exposure or contamination (LANL examples: Cerro Grande Fire, Sigma Americium Contamination; individual contamination, spill, exposure)
- If yes, tell:
  - what happened
  - when it happened
  - what form was the radioactive material in, what quantity of radioactive material was present
  - which radiation-generating equipment was involved
  - where it took place
  - who was involved
  - what actions were taken to remedy the exposure contamination
  - your location and activities during the incident, precautions taken to protect you
  - types of personal protective equipment used
  - length of time exposed during the incident
  - chelation therapy or other medical treatments, type of biological monitoring after the incident
  - indicate whether you have records of the monitoring