National Institute for Occupational Safety and Health (NIOSH)

SEC Outreach Meeting for Joslyn Manufacturing and Supply Co.

Meeting Date: Wednesday, July 25, 2012, 9:45 a.m.

Meeting with: Former Workers from Joslyn Manufacturing and Supply Co., Fort Wayne, Indiana

NIOSH Team:

Sam Glover, PhD, National Institute for Occupational Safety and Health (NIOSH), Division of Compensation Analysis and Support (DCAS), Health Physicist

Monica Harrison-Maples, Oak Ridge Associated Universities (ORAU) Team, Health Physicist

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

Mary Elliott, ATL, Technical Writer/Editor

Also Attending:

Bob Barton, Sanford Cohen & Associates (SC&A), Health Physicist

Formal Presentation: *Joslyn Manufacturing & Supply Co.*

Proceedings:

Mark Lewis greeted the attendees and thanked them for taking the time to meet with NIOSH. He described why it is important for NIOSH to hear from former workers about their experiences at Joslyn Manufacturing & Supply Company.

Mary Elliott handed out sign-in sheets and explained that signing the sheet and providing contact information is a voluntary act. She indicated that the contact information will only be used with their consent if NIOSH needs additional information following the meeting. The sign-in sheet will not become a public record.

Ms. Elliott stated that she would be recording the meeting and taking notes to prepare accurate minutes of the meeting. She explained that the final minutes that are posted to the NIOSH Web site will not contain information that will identify the former workers. The recording will not become a public record; it will be destroyed after the review process is complete.

Sam Glover asked the attendees if they all agreed to have the meeting recorded and they granted their consent.

Mr. Lewis introduced himself and asked the former workers and members of the NIOSH team to introduce themselves.

Worker 1 stated he worked at Joslyn Manufacturing for [redacted] years, beginning in 1949.

Worker 2 stated that he also started working at the plant in 1949 within a few days of Worker 1.

Worker 3 began working at Joslyn in 1948.

[Redacted] introduced herself as [redacted]'s wife.

Monica Harrison-Maples, Sam Glover, Mary Elliott, and Bob Barton introduced themselves.

Dr. Glover explained NIOSH's role under the Energy Employees Occupational Illness Compensation Program Act (EEOICPA), the Special Exposure Cohort process, and how this meeting fits into the process.

A brief discussion ensued regarding whether to wait for additional former workers to join the meeting or to proceed without them. The attendees agreed unanimously to continue the meeting.

Ms. Harrison-Maples referred to the handout prepared for the meeting. She reiterated the purpose of the meeting and explained why NIOSH wants to hear as much as possible from the workers about the uranium and thorium rolling operations at Joslyn.

Dr. Glover stated that 18 cases from the Joslyn site had come to NIOSH for dose reconstruction. Fourteen of those have been compensated.

Two attendees commented that they had recently filed claims with the Department of Labor (DOL) Resource Center in Paducah but had not heard if they were going to be compensated. Dr. Glover responded that DOL reviews the case and then sends it to NIOSH for dose reconstruction. He offered the attendees his contact information so he could let them know if NIOSH had received their cases. Ms. Harrison-Maples explained that it takes a while for DOL to review all of the case information before they send the case to NIOSH. She added that one of the handouts had toll-free phone numbers to call the DOL Resource Center or the Cleveland District Office for information about their cases.

Ms. Harrison-Maples stated that NIOSH is interested in hearing about the worker protections and the workplace conditions between 1944 and 1952 so they can better understand the potential exposures. NIOSH has records documenting that Joslyn processed natural uranium as well as a small amount of thorium; but they are not certain if Joslyn workers may have handled enriched uranium. NIOSH also needs to determine if any other radioactive materials were handled or if there were any special runs where the workers had to take extra safety precautions or use different procedures. NIOSH also wants to know if there were any engineering controls. NIOSH is primarily interested in the radiological work that Joslyn performed under contract.

Worker 1 and Worker 2 recalled that the only protective equipment Joslyn gave them was a pair of cotton gloves to wear when they handled the uranium.

Dr. Glover asked the former workers if there were any X-ray instruments or non-destructive testing facilities on site. He stated that NIOSH knows that Joslyn did uranium work from 1943 through 1952. Dr. Glover asked if they remembered any other sources of radiation on site – for example, cobalt-60 sources for radiography. He added that it was possible that Joslyn did not have the facilities on site for that type of work. Worker 3 did not recall any such facilities. Ms. Harrison-Maples and Dr. Glover explained that some facilities had a department onsite where they took X-ray shots of the rods to see if there were any gaps in the material or to see if they were welded properly.

Worker 3 stated that he had worked in the rolling mill. He explained that the rods were sent off to another department after they were milled. Ms. Harrison-Maples asked if the rods were sent to the other department to see if they needed to be straightened. Worker 3 responded, "Yes. They rolled them down to about an inch and a half in diameter. As they rolled the rods, they had to leave them set to cool off periodically because they built up heat." Ms. Harrison-Maples stated that NIOSH understands that the rods oxidized as they heated up during the rolling process. She asked Worker 3 if that caused a lot of dust during the rolling process. Worker 3 answered that it created dust as well as scale and steam. Ms. Harrison-Maples responded that they would talk more about the dusty conditions shortly.

Dr. Glover asked Worker 3 if he specifically recalled rolling uranium in the rolling mill. Worker 3 recalled that he had rolled uranium.

Worker 2 commented that the work at Joslyn was part of the Manhattan Project. Worker 3 responded that the Joslyn worked under that project during World War II but he was not sure what the project was called when he started working just before the Korean War. Dr. Glover explained that the Atomic Energy Commission (AEC) took over the special work of the Manhattan Project in 1948. Worker 3 recalled that he worked on the AEC contract in 1950 or 1951. Dr. Glover explained that the uranium rods were taken to the Hanford facility where they were used to produce plutonium.

Worker 2 stated that after the rods were rolled in the mill, they were sent to the straighteners, and then to the centerless grinders. He said that the process created a lot of dust that was inhaled by the workers. Worker 1 commented that he had ground a couple bars of uranium but he thought that they were used for aircraft. He recalled having to go to a grinder in the shipping area because they were short on an order. He was told, "Don't ruin that. That's worth $600." Dr. Glover asked if he had used a centerless grinder. Worker 1 responded, "Yes." Worker 2 explained that the centerless grinder had coolant running over the uranium to keep it cool and that the machine had a tent over it. Worker 1 added, "I know that it shot a lot of fire. It wasn't like stainless steel. There was a lot of fire flying from it. I could pick it up like this – the whole

bar." Worker 2 added, "With cotton gloves!" Dr. Glover commented that workers in the very early years of the Manhattan Project were not even given cotton gloves.

Worker 2 recalled that the company "gave us a meter in the beginning and, after it got full, we never saw another one after that." Dr. Glover asked if he recalled what type of meter he was given. Worker 2 responded, "When we were working on the uranium, they gave us a meter. When it was filled up, we had to turn it in. After that, we never saw another one." Ms. Harrison-Maples asked him to describe the meter. Worker 2 responded that he recalled pinning it on his clothing. Ms. Harrison-Maples asked if the meter was square and flat. Worker 2 answered, "Yes, and it changed colors. It didn't take very long."

[Redacted] asked Worker 2 if he knew that he was making stuff for the atomic bomb. He commented that they had asked questions so they knew where it was going. Worker 1 stated that they were told not to ask questions. [Redacted] stated that Worker 1 did not know what he was working on at the time.

Worker 2 recalled his experience in the Navy in Okinawa, when the first atomic bomb was dropped on Japan. "When I came back and started working at Joslyn, we got caught up in the Manhattan Project. They were still grinding the stuff because they didn't know how many more they were going to drop. They wanted enough so that they could make the atomic bomb again if they wanted to drop it on something else."

Dr. Glover asked Worker 2 if he started working at Joslyn in 1948. Worker 2 responded that he started working in 1949. Dr. Glover commented that there was a big push for special materials after World War II because the government was very worried about needing more atomic weapons.

Ms. Harrison-Maples asked Worker 2 if he recalled hearing what the film badge results were after he turned it in. Worker 2 responded that he had never heard the results.

Dr. Glover asked if Joslyn Manufacturing supplied work clothing to their employees. The attendees responded that they wore their own clothing but the company supplied the cotton gloves that they were required to wear to work with the uranium. Dr. Glover told them that Simonds Saw and Steel supplied work clothing for its employees but it was only laundered weekly so the clothing became laden with uranium during the work week. He asked the former workers if the company laundered the clothing that they wore to work. [Redacted] responded that she had washed her husband's work clothes. Worker 1 commented that his wife had lost her [redacted] to cancer. Dr. Glover explained that EEOICPA only covers illnesses from the workers' exposures from working at a covered facility.

Dr. Glover recapped the conversation: Workers at Joslyn wore their own clothing and it was probably washed routinely since it was their own.

Ms. Harrison-Maples asked if Joslyn had showers or changing facilities for the workers. Worker 2 responded that there were showers available but he wore his work clothes home afterwards. Ms. Harrison-Maples asked the others if they showered at the plant after work. Worker 1 responded that he did in the summer. Worker 3 stated that he normally did. Worker 1 recalled other workers who did, too.

Dr. Glover asked the workers about eating practices and smoking in the workplace. He related that he had seen a labor-management document that said that they provided smoking things at every workbench. Dr. Glover asked if the workers routinely ate their lunches as they worked. Ms. Harrison-Maples asked if there was a lunchroom. Worker 3 commented that workers were permitted to smoke anywhere in the plant. Worker 1 recalled that some guys ate in the shower room or wherever they wanted to, or that they might go outside if it was warm. Worker 1 also remembered that very few workers ate in their work spaces, but the company allowed them to smoke while they worked.

Dr. Glover asked if Joslyn had a cafeteria for employees. The workers explained that there was not a cafeteria but they were paid for their 20-minute lunch break as part of their 8-hour shift.

Dr. Glover asked the workers if they routinely worked overtime. They responded that there was lots of overtime. They also recalled that a routine work week would have been about 48 hours. Dr. Glover asked if any of them knew if Joslyn employees worked even more than 48 hours per week during the World War II years – between 1943 and the time the attendees began working in 1948 or 1949. Worker 3 responded that his father had worked seven days a week during the War and he sometimes worked eight hours on and eight hours off. Ms. Harrison-Maples asked if workers during the earlier years were also rolling steel for the war effort as well as the uranium during those years. Worker 3 recalled from his work period was that they rolled the uranium for a week and then they were done with it. He stated that during the War, they rolled it for longer periods.

Dr. Glover stated that NIOSH has reviewed records that document that Joslyn rolled about 400 tons of uranium at Joslyn during World War II. He was not certain how many tons of uranium were rolled there in other campaigns between 1948 and 1952. Ms. Harrison-Maples commented that she is still looking for information about how much uranium was rolled between 1948 and 1952 for the Chalk River facility in Canada. She asked the attendees if they remembered hearing about uranium that was being sent to Canada during that time frame. There was no audible response. Dr. Glover commented that the workers probably would not have been told where the shipments were going.

Dr. Glover asked where the material was kept at Joslyn after it was received. Ms. Harrison-Maples asked if there was a holding area for the material. Worker 3 recalled that the material went to the rolling mill after it was received. Dr. Glover clarified that he was asking if the uranium was held there until they were ready to work with it. Worker 3 confirmed that it was.

Ms. Harrison-Maples asked the attendees if they could show her where it was held on the site map. Dr. Glover commented that he wanted to understand where the uranium was stored and if there were access controls – in other words, could workers just go wherever they wanted in the plant? Worker 1 responded that he had walked into the area where the material was kept many times. Dr. Glover commented that it sounded like there were no controls if people could go wherever they wanted.

[Redacted] related a story that she had heard: One worker had been found sleeping under the tarp that had covered the material.

Ms. Harrison-Maples stated that NIOSH has information that the material was received and then stored in the billet yard. Worker 3 commented that was probably accurate. Ms. Maples asked the workers to show her where the billet yard would have been.

At this point, the former workers and the NIOSH team carried on at least two concurrent discussions as they reviewed maps of the site. Those conversations are summarized by Dr. Glover and Ms. Harrison-Maples below.

The former workers indicated that the material was stored in a stockade with a chain-link fence under armed guard that was closer to the railroad track than the area that the NIOSH team had thought was the storage area. The workers also indicated that what NIOSH had thought was the storage area was actually where the material was weighed. The material was held in the guarded storage area until it was transferred to the process area. Dr. Glover commented that access controls probably were not “extreme” if a man had been found sleeping under the tarp covering the material.

Dr. Glover asked where the finished uranium rods were stored until they were shipped out. Worker 1 recalled that the rods were put into a closed railroad car with an armed guard. Dr. Glover commented that the guard had probably been a Pinkerton agent. He asked if any of the other workers knew.

Worker 2 commented that [redacted] had worked on the straightener and had had a reputation for doing very high quality work. Dr. Glover asked if [redacted] would have straightened uranium rods. Worker 2 responded that he would have straightened anything that was brought to him.

A brief discussion ensued among the workers regarding claims for former Joslyn workers and how many have been compensated. Dr. Glover stated that NIOSH had received18 cases for dose reconstruction, and that the DOL had come to Fort Wayne earlier to inform former workers about the EEOICPA program.

Dr. Glover asked about worker movement in the plant: Did the same people always do the rolling or did they move around? Were the rolls used exclusively to roll the uranium or were they also used to roll steel?

Worker 3 responded that they used separate rolls that were only used when they rolled the uranium. Worker 1 responded that stainless steel could not be run when they worked with the uranium because the metals had to be worked differently. He recalled that there was a lot of fire when he ground the uranium rods. Dr. Glover told the attendees that he had ground uranium and it could be exciting because you can see the fire when you hit uranium.

Worker 1 commented that he had not been told what he had been grinding. He was only told to be careful with the material.

Dr. Glover explained that other facilities were cleaned up because there was a lot of metal work so the metal tended to mix in with all of the uranium contamination. If a steel facility had special facilities where they only worked on the AEC contracts, then they did not get the same "dilution" during the cleanup. He explained that it was important to understand the cleaning practices. Were the facilities used exclusively for the uranium work or were they used for other metals as well? Dr. Glover summarized his understanding that Joslyn had receiving and storage areas and also used rolling mills, straighteners, and centerless grinders to work the uranium. NIOSH also has records indicating that Joslyn Manufacturing used their straighteners and centerless grinders during the earlier years to work on uranium rods that were rolled at other facilities.

Dr. Glover asked if the rods were ever sent to a cutter after they were straightened and ground. Worker 2 responded that the bars were chopped if they were too long. Worker 3 added that workers probably used a Cut-O-Matic if it was necessary to cut the rods. He commented that cutting the rods also created sparks.

Dr. Glover asked if the workers used a Medart straightener to straighten the rods. Worker 1 confirmed that they had. He remembered that [redacted] had done a lot of straightening.

Dr. Glover summarized the process after the rods left the mills: The rods were straightened, ground on a centerless grinder, and then taken to the Cut-O-Matic if they needed to be trimmed. Worker 2 added that following all that, the rods were taken to an inspection shop that would have been in the building marked "8" (also the process area) on the site map. Worker 3 commented that the inspection shop was in "8" after they added on to the mill.

Dr. Glover corrected his previous statement: The rods were straightened, ground on the centerless grinder, taken over to be inspected, and then cut to specifications. He stated that he was still uncertain if there was a designated area where the material was stored prior to shipment. Would it have gone directly to the railroad cars? Worker 1 responded that [redacted] had told him that the rods were taken to covered railcars that were guarded. Ms. Harrison-Maples commented that the rods were probably taken directly to the rail yard and shipped out as soon as the run was complete because the demand for them was pretty high.

Dr. Glover stated that NIOSH has AEC reports that list the names and job titles of some of the early workers. Ms. Harrison-Maples asked if [redacted] is still living. Worker 1 replied that he was not.

Dr. Glover stated that they had covered the workers' activities as well as the fact that there seemed to be very few access controls.

Ms. Harrison-Maples asked Worker 1 to describe what he had meant earlier when he said that Joslyn was a dirty place. She asked him if it was a fine dust or if there were a lot of heavy, thick pieces. Worker 1 responded, "It was not like steel dust. There was smoke." Worker 3 recalled that the dust was "fine." The other attendees agreed.

Dr. Glover asked Worker 3 if the uranium dust also contained a lot of fines (larger particles) when he worked with it. Worker 3 responded that he did not work where the rods were ground but there was a lot of scale and stuff that they had to sweep up in the rolling mill. Ms. Harrison-Maples asked Worker 3 to tell her about sweeping up the mill. Worker 3 explained that they swept the floor and put the dust and scale into five-gallon buckets. Ms. Harrison-Maples asked Worker 3 how often workers swept the mill. He recalled that they swept about every half-hour.

Dr. Glover asked how the billets were heated prior to rolling. He stated that the Simonds Saw and Steel facility used a lead bath to get the material up to temperature. Salt baths have also been used for that purpose at some facilities. Other facilities heated the material in an oven. Worker 3 recalled that the billets were heated in the same furnace that was used to heat stainless steel prior to rolling. Ms. Harrison-Maples said NIOSH has a memo stating that Joslyn was selected because the site had electric furnaces that other facilities did not have. Worker 3 responded that he believed that the batch furnaces were heated by gas. Dr. Glover commented that there would have been more oxides when the material was heated in a furnace prior to rolling. He explained that Simonds Saw and other facilities used lead or salt baths to coat the material, which reduced the oxides. Ms. Harrison-Maples added that the use of the baths to produce a coating on the rods was likely the result of the work done at Joslyn.

Dr. Glover summarized the rolling process: Joslyn was a hand-operated mill where the billets were taken out of the furnace with tongs and put through a series of different-sized angles and other things to reduce the diameter of the rod, which would be cooled periodically as needed. He asked how long the process took. Worker 3 responded that it took quite a few passes.

Dr. Glover asked if they worked on steel plates covering a dirt floor. He stated that Simonds Saw had that same type of floor. Worker 3 responded, "Yes." Dr. Glover explained that uranium dust got underneath the steel plates at Simonds Saw and stayed there forever. Although the plant closed 20 years ago, when he visited the Lockport, New York facility, he found that the floor is still yellow from the uranium oxide that was never cleaned up. Dr. Glover stated that the workers at Simonds Saw had washed the floor regularly to keep the dust down. He asked the former Joslyn workers if they recalled washing the floor at their facility. Worker 3 did not remember ever washing the floor.

Ms. Harrison-Maples asked if the waste material that they swept up and put into 5-gallon buckets was kept for reprocessing or if it was disposed of. Worker 3 responded that perhaps they kept the waste material, but he was not certain what they did with it. Ms. Harrison-Maples confirmed her

understanding that the workers were only instructed to sweep up the waste and put it into a bucket.

Dr. Glover asked Worker 1 to repeat what he had said earlier about one of his colleagues burning the waste materials. Worker 1 stated that [redacted] would go out to burn the grindings once a day when the wind died down.

Dr. Glover referred to a document that describes a burning incident with waste collected at the Fort Wayne Transfer (or Transport) Center: a uranium drum in the transfer center got wet and blew up. Dr. Glover stated that the document describes the process of placing uranium on a flat metal plate and burning it with a torch.

Dr. Glover asked the attendees if they recalled the process for burning waste at Joslyn. Worker 1 responded that he was not told how it was done. [Redacted] said that [redacted] had told her that the waste was put into cans, taken out back in a wheelbarrow, and burned at night. Worker 1 added that his coworker would wait until the wind died down and that he would burn it every day; but he never said what they did with it. [Redacted] explained that [redacted] initially thought that it would burn itself out, and then he found out that someone was actually burning it. Worker 3 asked if the material being burned was grindings that they had created at the centerless grinder. Worker 1 confirmed this.

Dr. Glover stated that the waste from the rolling mills tended to be oxides, but the waste from the centerless grinders were metal shavings that would catch on fire if it was stored. He agreed that it made sense that the waste would be burned every day.

[Redacted] asked Worker 2 if he put the shavings in the buckets, too. Worker 2 stated that he took the buckets out of the mill in a wheelbarrow and threw the waste in a pile on the ground. It was always gone when he came in the next day. Dr. Glover asked Worker 2 to point out on the site drawing where he threw the shavings. Worker 2 identified an area between the building marked “9” and the railroad track.

Dr. Glover said that he will provide the Army Corps of Engineers with information that may assist in the Joslyn clean-up efforts.

Worker 2 stated that he and Worker 1 spent over 40 years breathing “that stuff.” Worker 3 commented that they hadn’t even known that they were breathing it.

Dr. Glover asked Ms. Harrison-Maples when the AEC Health and Safety Lab (HASL) in New York came to the rolling mill to take air samples. Ms. Harrison-Maples responded that it was in 1948. Dr. Glover explained to the former workers that about the time that they started working at Joslyn, the group from the HASL came to the site to perform air sampling. He asked if anyone remembered white-coated scientists coming out and walking around. There was no audible response.

Dr. Glover stated that the average air concentration of uranium at the east side 9-inch rolling mill was 25,700 dpm/m^3 and the limit was 50. He asked for someone to point out the east side of the rolling mill on the site drawing, and maybe explain why it was so bad.

Dr. Glover pointed out the 9-inch rolling mill on the drawing labeled *Joslyn Rolling Mill Layout* that included air concentrations from the survey. He pointed out the drive source, the 9-inch rolling mill, and the feed-put on the 9-inch rolling mill where the air concentration was the highest (25,700 dpm/m^3). Worker 3 stated that he only remembered working on the 18-inch rolling mill.

Dr. Glover asked Ms. Harrison-Maples about the date of the site survey diagram. Ms. Harrison-Maples stated that there were surveys in 1948 and 1952, and another in the 1970s or 1980s. After some discussion, Dr. Glover, Ms. Harrison-Maples, and Mr. Barton determined that the map is from the 1952 survey. Dr. Glover explained to the workers that the Safety Lab actually came to the mill and took breathing zone samples. Worker 2 commented that 1952 would have been at the end of the uranium work. Dr. Glover asked if the workers would have been feeding the mill from the east side and if that would have exposed them to extra fumes. Worker 3 stated that the lower pass was made on the east side so the worker would have been bent over. Worker 2 added that there would be someone on each side of the roll.

Dr. Glover asked if the same people always did that job. Ms. Harrison-Maples asked if they "spelled" each other. Worker 3 confirmed that the workers on the mill were "spelled" every 45 minutes. Worker 3 stated that he had not worked on the 9-inch mill because he didn't have the seniority. He did not recall that uranium was ever rolled on the 9-inch mill. Dr. Glover stated that uranium definitely had been rolled on the 9-inch mill.

There was some discussion between the former workers about the diameter of the bars and the proper treatment of the bars to avoid fire. Worker 1 pointed out that stainless steel was not as sensitive. Dr. Glover asked if they recalled having spontaneous fires or if the residue or coolant ever caught fire. Worker 2 stated that the coolant was running over the material at the centerless grinder at all times. He added that the fines and coolant would collect into a big pan under the grinder. When the pan was full, they would shut down the machine, pull the catch pan out, put it in a wheelbarrow, and take it out. Ms. Harrison-Maples asked how often the coolant was taken out. Worker 1 stated that it was taken out when it was full, maybe every two or three days.

Ms. Harrison-Maples asked if they remembered any big fires. Worker 2 indicated that [redacted] would have more information because he was there before 1949. He reiterated that he only took the waste out in the wheelbarrow and it was gone the next day.

Ms. Harrison-Maples asked the attendees to confirm that the workers did not remember any fires other than the waste burning. She asked if there were any other incidents they wanted to discuss. There was no audible response.

At this point, the meeting recessed for approximately ten minutes.

Dr. Glover reconvened the meeting. He asked if the workers if they recalled pickling the steel at Joslyn. Worker 3 responded that there was a pickling yard on site. Dr. Glover asked if they recalled pickling the uranium as well. After some discussion, the workers agreed that they did not recall if the uranium was pickled.

Ms. Harrison-Maples revisited the topic of engineering controls. She asked about the tents over the mills, the gratings over the floors to keep the dust down, and ventilation. Worker 2 responded that they had vents in processing. Worker 3 stated that there was a tent that came down over the mill. Worker 1 and Worker 2 added that there were steel grates over the floors at the centerless grinders. Worker 3 added that the floor around the rolling mills was covered with stainless steel plates.

Dr. Glover asked if there was a hood that came down over the rolling mill. Worker 3 responded that it was more like a canvas tent that came down to about the height of the rolling mill with fans pulling the air out. Dr. Glover asked if the tent had always been there when they rolled steel. Worker 3 stated that the tent was put up especially for the uranium work.

Worker 2 stated that they also put a tent over the centerless grinders. He added that when it was cold, other workers would also get in the tent to get warm.

Ms. Harrison-Maples asked which area had the grated floors. Worker 1 stated that there were steel grates around the grinders but not around the rolling mills. Worker 3 reiterated that there were steel plates around the rolling mills. Worker 1 stated that the workers occasionally lifted up the grates so they could sweep the floor.

Dr. Glover asked how they collected the grinding chips that were taken out back. Worker 2 stated that the chips would not have been underneath the grates. The chips fell into a collection bin directly underneath the grinder. When the bin was full, he would remove it from the machine, take them outside, and leave them on the ground. The chips were gone the next day.

Ms. Harrison-Maples asked the former workers if they recalled any special medical testing such as annual chest x-rays or urinalysis. Worker 1 did not remember any special testing. Worker 3 stated that everyone had a physical before they started working at the plant. Worker 3 recalled that people who worked with uranium were required to have physicals every year at a doctor's office. Worker 2 remembered that an X-ray machine was brought on site for chest x-rays, but only for a short time. Dr. Glover commented that the X-ray unit may have been a photofluorographic machine considering the time period for the contract.

Dr. Glover explained that NIOSH's lawyers have ruled that all elements of the worker's radiation dose must be confined within the physical boundaries of the site to be used in the dose reconstruction. NIOSH can include medical X-rays in the worker's dose only if they were done at the facility. If NIOSH has clear documentation that the X-rays were done offsite, then they

cannot be included in the worker's radiation dose. If it is unclear if the X-rays were done onsite, NIOSH assumes that they were. NIOSH will only add dose from medical X-rays when calculating Joslyn workers' radiation doses if the X-rays were done on site at Joslyn.

Worker 3 recalled that a portable X-ray truck had been brought onsite to screen workers for tuberculosis; but the screenings were probably discontinued in the late 1950s. Ms. Harrison-Maples thanked them for their input.

Dr. Glover asked for confirmation that there were no physical means to keep workers from going into other parts of the plant. There was no audible response. Dr. Glover asked if they were required to wear respirators. There was no audible response.

Ms. Harrison-Maples asked the attendees if they had any questions about the SEC. When asked, she explained that "SEC" stands for Special Exposure Cohort. She explained how the SEC petition is used when there is not enough information to reconstruct the radiation dose. She stated that a petition has been filed to add Joslyn to the SEC. If it is found that there is not enough information to reconstruct radiation doses for the entire petition class, then that class will be added to the SEC and it will be assumed that the workers' workplace radiation exposures contributed to their cancer if they have one of the 22 specified cancers. Dr. Glover explained that it essentially speeds the process up because the dose reconstructions are not done for those workers who meet the definition by law and they are automatically compensated by DOL. He added that if a worker does not have one of the 22 cancers, NIOSH will do the best they can to reconstruct the person's radiation dose.

[Redacted] asked about the 22 cancers. Dr. Glover responded that there is a list but it does not include prostate and skin cancers. Ms. Elliott offered to print the list of 22 cancers for distribution after the meeting and provided contact information for Josh Kinman, the NIOSH Special Exposure Cohort Petition Counselor. She explained that Mr. Kinman can answer general questions about the petition, about the SEC process, and about the dose reconstruction process.

Worker 3 asked if there is a length of time you are required to have worked at the site to be eligible. Dr. Glover explained that for dose reconstruction, there is not; but for the SEC, it is typically one year or 250 work days. Ms. Harrison-Maples added that if somebody worked at the site for 6 months and worked at another SEC site for 6 months, he would also qualify. Dr. Glover stated that some facilities that worked overtime were able to include that in their calculation, shortening the required number of work days.

Ms. Harrison-Maples assured the attendees that the SEC process is set up to try to include people rather than exclude them. She explained that when she asked them if they wore respirators, it was only to determine their exposures because NIOSH does not take into consideration whether workers wore respirators when calculating their radiation doses. Dr. Glover gave another example: some workers wore respirators at Simonds Saw and Steel and others did not, so the urinalysis program may not have been given them "the real answer."

An unidentified attendee asked if a worker whose claim had been denied can apply again if he gets another cancer. Ms. Harrison-Maples responded that a worker can apply again. Dr. Glover explained that the medical benefits go back to the date that the claim is filed. He stressed that people should list every cancer they have had. For instance, if a worker has had 25 skin cancers, they need to include every one because a dose reconstruction is done for every cancer.

Another attendee commented that she had read that a worker can be compensated under Part E if they had lost use of part of the body – for example, if part of the colon was removed. Dr. Glover explained that NIOSH deals only with Part B while DOL administers Part E for workers at DOE facilities. Dr. Glover further explained that the Atomic Weapons Employers (AWEs) such as Joslyn are not government-owned facilities, so the law treats them differently. AWE workers cannot file Part E claims. Dr. Glover added that Part E looks at chemicals as well as radiation, while NIOSH looks only at radiation. Mr. Lewis noted that colon cancer is one of the 22 covered cancers.

Mr. Lewis asked the attendees to contact him if they knew of other workers from the SEC time period who might have something important to tell NIOSH about their work at Joslyn.

Dr. Glover explained that workers from Joslyn manufacturing after 1952 are also covered under EEOICPA because there is a residual contamination period. Ms. Harrison-Maples stated the residual contamination period extends past the end of the uranium operations contract period in 1952 through 2006; NIOSH still does a modified dose reconstruction for those workers.

Dr. Glover asked the attendees if Joslyn Manufacturing continued to use the uranium processing facilities for rolling stainless steel after the uranium contract, or were those facilities roped off and no longer used. Worker 3 referred to a newspaper article that said that the new owner wanted to build on the property and that some areas had been roped off because they were still contaminated with radiation. Worker 2 added that none of the areas that the article said are contaminated now were roped off when he worked at Joslyn. [Redacted] stated that there is information on the Internet that states that no schools, playgrounds, or houses will ever be built there because the government now owns the property and it will never be used again. Dr. Glover confirmed that there is still radioactive contamination at the Joslyn property. The Army Corps of Engineers is still working on the cleanup plan. They have taken measurements and roped off contaminated areas. Dr. Glover added that he was planning to tour the facility. Worker 1 commented that he had toured the site for [redacted] years.

Dr. Glover expressed his appreciation to the attendees for taking the time to meet with NIOSH and asked Mr. Barton if he had any questions.

Mr. Barton asked Worker 2, “You mentioned that you wore a meter and said that you handed it in after it “filled up” and changed colors. Would you say that happened just once while you were there?” Worker 2 responded, “Just once and that was it.” Ms. Harrison-Maples asked if everybody got one when they started working. Worker 2 responded that he did not remember.

Dr. Glover thanked the workers for giving their input about their work experiences at Joslyn Manufacturing. He adjourned the meeting at 11:30 a.m.