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In the Matter of: Niagara Falls Storage Site (NFSS) Formally Utilized Sites Remedial Action Program.

Public Workshop) June 24, 2009

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INDEX

P R O C E E D I N G

MS. ARLEEN KREUSCH: Good evening. I'd like to thank you all for coming tonight and just go over a couple of logistics. The restrooms are over here on my left, your right. There's coffee and cookies. If anyone is interested in refreshments, please feel free to get up any time during the presentation and just grab refreshments. The emergency, there's an emergency, two emergency exits behind me, and then the emergency exit over, that you came in when you signed in.

I would like to introduce Ms. Michelle Rhodes. She is the acting program manager for the Niagara Falls Storage Site and Lake Ontario Ordinance Works tonight. Michelle.

MS. MICHELLE RHODES: I am very soft spoken so hopefully everybody can hear me in back. Good evening and thank you, everyone, for coming on this beautiful Wednesday evening. I know it's very nice out so we appreciate you attending today. The next slide, please.

The purpose of tonight's meeting is several fold, but the most important objective is encourage open communication of information and

ideas regarding the Corps' work at the Niagara Falls Storage Site. I would like to start with an update of where we are in the CERCLA process, provide a quick summary of findings from our Remedial Investigation Report that was published in December of 2007, and introduce the scope of the addendum to this Remedial Investigation Report based upon your comments and additional data needed for the Feasibility Study.

As we continue to work on the RI addendum, we begin to turn our sights toward the Feasibility Study phase of the process. We will look at multiple alternatives to address site contamination and develop cleanup objectives. A framework for the Feasibility Study has been developed that divides the site into distinct operable units. This approach will help focus the project itself on the area of the greatest potential concern for us, which is the waste containment structure.

Finally, we will describe tonight the use of technical memoranda for the Feasibility Study, and these will basically be designed to engage the public in the process. Instead of receiving a very large Remedial Investigation Report we'll

break the Feasibility Study down into pieces that are a lot more manageable and integrate input into the process much more. Next slide, please.

Tonight we're using a workshop format. We used that at the last LOOW meeting and it seemed to work very well, a lot better to encourage the two-way communication. We'll start with a brief slide presentation that will go from 6:00 to 6:45. Following that presentation, we invite you to come take a look at the posters we have developed. That will be located in the back here. And give you an opportunity to talk to the Niagara Falls Storage Site project team, one on one, with your questions.

There are four stations. Behind the screen is the Feasibility Study station. They'll be talking about the framework we propose to use for the Feasibility Study. To my right here will be the RI Addendum station, and also if you'd like to know more about the RI findings. In the back is going to be for Lake Ontario Ordinance Works, and at this time I'd like to introduce Debbie McKinley. If you could stand, please. Debbie is a civil engineer with the Corps St. Louis District. She is currently preparing an archive

search report and that will be used to develop recommendations for a path forward on different properties of the Lake Ontario Ordinance Works based on historic site activities.

She is also the one that located the original construction report for the LOOW. On my left here we'll have a station for the Department of Energy managed FUSRAP sites, and these are also known as the Closed Vicinity Properties. If Jeff Tack could stand, please. Jeff works for Source One, a Department of Energy records contractor and a DOE FUSRAP records lead since 2001. He's standing in for Chris Clayton tonight, who is the DOE project manager who could not be here. Jeff will be available to explain the DOE's role in FUSRAP, provide DOE contact information and convey comments and concerns to the DOE.

At 7:15 we'll reconvene here and conduct a roundtable discussion. So now I guess we can start the slide presentation. If you could hold your questions until the poster session and the Q&A session, but feel free to ask them then. And without any further ado, I'd like to introduce Dave Kulikowski, who will be presenting tonight, followed by Hallie Serazin. They are with SAC,

who is the prime contractor for our Remedial Investigation Addendum and the Feasibility Study.

MR. DAVE KULIKOWSKI: Can everybody hear me okay? That's good. All right. So let's start, where is the Niagara Falls Storage Site in the CERCLA process? So actions at the site are being performed under the Formerly Utilized Sites Remedial Action Program, also known as FUSRAP, which follows the CERCLA process for hazardous waste site cleanup. The CERCLA program lays out a systematic process for identifying, investigating and cleaning up hazardous waste sites, so the graphic shows we're right in that process. We're in the Remedial Investigation and heading into the Feasibility Study.

The purpose of the RI was to define the nature and extent of site contamination and evaluate potential risk to human health and the environment. For this site, the RI included a baseline risk assessment to quantify potential risks to hypothetical receptors both on and off the property and a groundwater model to quantify contaminant transport away from source areas.

So the next step in the CERCLA process is the Feasibility Study. During the Feasibility Study

cleanup standards will be developed and multiple remedial alternatives to address site contamination will be evaluated.

The Feasibility Study then leads into the proposed plan where the preferred remedial alternative is selected. And finally, you have a record of decision which will be filed to document the final decision on site closure. Next slide.

Here is a graphical representation of the NFSS over time. Briefly, LOOW was acquired in 1942. In 1944 the Manhattan Engineer District, they were granted the use of a portion of the property for storage of radioactive waste, and that's when the Niagara Falls Storage Site was born. 1974 FUSRAP was initiated. 1981 monitoring started and it continues today. Also during the 80s the radioactive contaminated soil from a vicinity property was excavated and placed in an area called the R10 dial at the site.

Also in the 80s the IWCS was constructed, the Interim Waste Containment Structure, and that went on from 1982 to '86. 1997 rolls around and the NFSS comes under the Corps after being transferred from the DOE. And then we look at current and future actions. Initiation of technical

memorandum and the Feasibility Study Work Plan in support of the Feasibility Study and the completion of an RI Addendum which is being developed to identify data gaps. Next slide.

We'll look at some of the highlights of CERCLA activities at the site. The RI was completed in three phrases of field investigation from '99 to 2003. The RI consisted of three components. You had the Remedial Investigation itself. You had the baseline risk assessment and you had the groundwater flow and contaminant transport model. Other activities that we've had are public information meetings. We had two last year, one in May and one in September and from the meetings we collected over 300 comments, and those were received regarding the RI, the baseline risk assessment and the groundwater model.

Those comments were submitted by local, State and Federal regulatory agencies as well as from the community, from all of you. And the Corps is preparing responses to stakeholder comments and developing a responsiveness summary which is expected this fall. And also, we use these comments to identify areas where additional data is needed, and that was used to scope the RI

Addendum. Okay. We'll move on.

Let's talk about some conclusions from the NFSS RI report. So the RI completed for the site was extensive. It includes approximately 1400 samples with over 150,000 analytic results. The RI showed no immediate risk to nearby communities. Data collected for the RI also shows no outside contaminant migration via surface water or sediments. At this site groundwater contamination is in the upper water-bearing zone and it is determined that sand lenses are discontinuous in extent. The feasibility study, moving forward, will examine a variety of options to address long term risks presented by site contamination. And then the environmental surveillance program and site maintenance activities such as IWCS inspections, irrigation and other turf management activities, those will continue.

In 2007 enhancements were made to the environmental surveillance program, such as increasing sample locations, such as in the west drainage ditch, and they also increased the number of parameters sampled for. Next slide.

So let's look at current and planned RI activities. After receiving the RI comments, the

NFSS technical project team met to review draft responses to comments and assess whether significant data gaps exist that would require additional investigation. Some of the data gaps identified, they're going to require additional field investigation and others will require additional review of historic records or the compilation of reference materials cited in the RI. All of this information collected will fill the identified data gaps and then those will be presented in the RI Addendum which is coming out. So now we'll move on. Next slide.

These are the RI Addendum topics. So we took the comments, we broke them into areas of concern, and we'll address each of these areas. So first of all is the Interim Waste Containment Structure or the IWCS. You've got pipelines, the Building 409 area groundwater, NFSS background values, potential off-site groundwater plumes, radiological sampling results, off-site surface water and sediment, historic operational areas, subsurface geology and supplemental RI information. Next slide.

So I'm going to now go through each of those areas in more detail. The first kind of gets you

oriented as to the areas that we're going to be focused on for the RI Addendum. So this graphic shows the location of some of the areas identified for further investigation. Exact sample locations have not yet been proposed or identified.

So looking at the graphic there, the IWCS is the most prominent feature there, the area of EU-10. You've got pipelines, they're located across the site but the additional investigation will be focused on radiologic contamination primarily in the lines that extend off-site. We'll be looking at radiological contamination in groundwater in the former Building 409 area, which is south of the IWCS. We're going to be examining that plume. We're also going to be installing additional wells to investigate potential off-site groundwater plumes near EU-1. We're going to be looking at this plume up here. EU-4, looking at this plume to the north. And then 9 and 11, kind of looking at the plumes west of the IWCS. Also we'll be performing confirmatory sampling of surface water and sediment in the west drainage ditch and central drainage ditch as part of the environmental surveillance program. All right. Our next slide.

So now I'm going to go over each of the RI Addendum topics and what we're going to look at for each of those. So first of all, we're going to start with the IWCS. So the Corps has determined at this time sufficient information exists regarding the IWCS contents and the short-term integrity of the structure to begin evaluating alternatives in the Feasibility Study. In addition to the geotechnical information presented in the RI, the short term integrity of the IWCS is continually monitored through the environmental surveillance program and it's maintained under operation and maintenance. Assessment of remedial options for the IWCS potentially requiring intrusive sampling will be addressed after the record of decision. So if you remember on that diagram, the record of decision was out in the future. So in the meantime, we'll compile details on the IWCS construction and its inventory, include the LOOW completion report, which was completed back in 1943 as supplement RI information. Next slide.

Next we'll be covering pipelines. The RI Addendum will provide documentation that subsurface pipelines extending off the NFSS

property that have been plugged. So as we already stated, the LOOW completion report, the old report from '43, will be provided as supplemental RI information. This report, which provides construction details for the LOOW could also provide information that's relevant to the Niagara Falls site with respect to the location of pipelines. As part of the investigation that's being completed for the LOOW, an underground utilities RI was completed. Although the LOOW investigation was primarily interested in chemical contaminants, several samples collected for that investigation, they were split and they were analyzed for radiological parameters.

The radiological results from the split samples collected from the off-site utility lines will be screened against background and risk limits and included in the RI Addendum. So then finally for the IWCS in the vicinity of it, the pipeline engineering schedule, it shows areas of the pipelines that were severed, filled or removed, and this will be provided as supplemental RI information along with backup construction photographs. This information will be used to locate the deepest pipelines and the under drains

and the depth of the deepest pipelines will be compared to the depth of the clay cutoff wall. Next slide.

Now we're going to look at Building 409 area groundwater. We're going to look at the plume there. This slide here, it shows the dissolved toty uranium groundwater plume located south of that Building 409 and this is the way we presented it in the RI report. So the area shown in green exceed background levels. Now, since the RI report was released, new information regarding the shape and the extent of this plume, it's been reviewed and this information suggests that the configuration of the plume may be overly conservative, so what we're going to do is present a new, a new view of it. The plume shown here, that was drawn using dissolved toty uranium data from monitoring wells, temporary well points and manhole locations. So we've got the TWP's, TWP and we have a manhole up here. And the linear plume extending here, that was drawn, assuming it was following a 10-inch potable line which was left in place. And for plume delineation, water in the manhole was assumed to be in direct contact with groundwater, all very conservative

assumptions. So if we kind of look at the plume, just look at it in terms of groundwater and re-evaluate it using environmental surveillance, it might have a different look. Go ahead and click.

Not as extensive as we had it drawn before, taking out the manmade features, the manmade pipes and drawing it, you know, what it probably looks like. So in addition, subsurface cross sections completed in the Building 409 area will be used to re-evaluate the plume configuration based on the presence of sand lenses and then including the findings for the upper water-bearing zone at this well out there, OW-18D which is the sample that's part of the environmental surveillance program. Next slide.

Now we're going to look at background values. So if you address a lot of the RI comments received regarding background levels, the background data set for soil, that's going to be compared to background soil concentrations including in the New York State Brown Field legislation. Then turning to groundwater and looking at background groundwater values, the distributions for background groundwater data will also be evaluated for both the upper and lower

water-bearing zones, and we're going to look at those to determine whether two distinct background data sets exist for these two zones and would this be more representative site conditions. Then we're going to look at the concentrations of uranium and operating wells that were used to establish background groundwater concentrations and this will be compared to naturally occurring groundwater concentrations of uranium as indicated in surveys of drinking water sources cited by the USEPA.

And then finally, to respond to questions regarding the location of uranium isotopes relative to each other and historic information on site operations and storage practices, the report titled "Utilizing Isotopic Uranium Ratios in Groundwater Evaluations at NFS," that's going to be provided also in the RI Addendum. And next slide.

Next we'll talk about groundwater contamination. In the RI we had maps that showed the extent of groundwater plumes in the upper water-bearing zone. Now we didn't have any definable plumes in the lower water-bearing zone, so the upper water-bearing plumes, those were

delineated for uranium, manganese, boron and organic solids. And just a quick note, when you see the posters back here, they've got all the plumes laid out real nice so, you know, you can look at those after this. So concern has been expressed that some of these plumes may be extending off-site, including the uranium plume located in the far northwest corner of the U-1. There is a plume that's heading off -- well, not heading off, it's just in that area.

And then there's an organic solvent uranium manganese and boron plume located near the northern side boundary in U-4 so we have a plume here that we're going to be looking at. And then the uranium plume located west of the IWCS and its potential interaction with the west drainage ditch along EU-9 and 11, kind of looking at this area right there. So additional sampling has been proposed for these areas.

So to better define the offsite extent of the groundwater plumes in this upper water-bearing zone, and to determine whether there's a potential for interaction between groundwater and surface water in the west drainage ditch, soil borings and temporal low points will be installed and utilized

to select optimal locations for new permanent wells, and then these wells, in addition to the sampling of the central drainage ditch will be sampled as part of the environmental surveillance program. And then we'll take all that groundwater data and we'll revise the plumes to show more recent data. Next slide.

RI Addendum, another topic. Radiological sample results. After the RI was completed, it was discovered that 17 surface soil samples analyzed for plutonium, they were re-analyzed by the lab, and were inadvertently omitted from the RI data set. So we've located these results. These results were presented in the RI Addendum along with an uncertainly analysis to indicate whether these results changed conclusions regarding the presence of plutonium at the site.

Then we're going to present additional radiological groundwater data from environmental surveillance program sampling. They've added some new parameters, cesium, plutonium, strontium, trivium and technetium. And then finally we're going to present radiological results for 57 drum samples of investigative dry waste that was derived during the RI field operations, and

there's 57 drums of dedicated soil boring per drum and those were analyzed when they used those results and presented those in the RI Addendum. Next slide.

Off-site surface water and sediments. So one of the objectives of the additional groundwater sampling is to investigate whether the potential for interaction between groundwater and surface water exists in the west drainage ditch. So this analysis will utilize groundwater and surface water sediment data collected in the west drainage ditch as part of the environmental surveillance program and then also this data from the central drainage ditch will be presented in the RI Addendum along with the results of radiological samples collected during the LOOW underground utilities RI. So if newer information suggests changes to our understanding and the nature and extent of contamination, a discussion of this will be presented in the addendum.

Then finally we're going to do modeling results, use modeling results to assess groundwater and surface water interaction in the ditches. Next slide.

Historic operational areas. To further

assess historical site operations, a more in-depth historical area photo review of the site will be conducted by the Topographic Engineering Center. An interpretation of aerial photographs is included as part of the history search for the former LOOW and a similar review is going to be conducted but focused on the Niagara Falls 191 acres. Also historic operational photos will be compared to the location of current groundwater plumes and any available historical records and waste manifests for the Knolls Atomic Power Lab materials will be provided as supplemental RI information. Next slide.

Moving downward into subsurface geology. To further understanding of the subsurface geology, boring logs for the Phase 3 RI investigations will be appended to the RI Addendum and local results from Phase 3 of the RI, they were utilized. However, the soil borings themselves were produced after the sand lense assessment was completed.

So additional subsurface cross sections will be developed near the IWCS and near the areas where groundwater contamination is potentially moving off-site to better understand the occurrence of sand lenses. This will be included

in the report. And then finally you've got the -- we're going to revise some downhole gamma logging results that were presented as an appendix in the RI. Next slide.

And then finally, the last topic is the supplemental information. So the RI Addendum will also include a description of the environmental surveillance program and an explanation of how the program monitors IWCS integrity. And then finally, there are samples of railroad ballasts, building materials and road core. They were collected and analyzed during the RI but the results were not evaluated in the RI or the baseline risk assessment at that time because there was no representative background level for comparison. To be thorough though, the samples will be screened against surface soil background levels and risk base limits in the RI Addendum.

So we've seen now what we've done. We've done the RI. We're going to move into the RI Addendum but we're also going to move forward to the Feasibility Study and that's where Hallie is going to take over.

MS. HALLIE SERAZIN: Thanks, Dave. So as Michelle said, we're going to continue to work on

the RI Addendum but we're also going to begin to turn our sights toward the Feasibility Study. And during the Feasibility Study we're going to -- during the Feasibility Study we're going to develop multiple remedial alternatives and consider them for each of the operable units, and we're going to develop cleanup objectives.

The framework for the Niagara Falls Storage Site Feasibility Study divides the site into three operable units, the IWCS, balance of plant and groundwater.

So let's start with the definition. An operable unit is an area of the site or an environmental media that will be assessed for the feasibility of using a given remedial approach. So for instance, for some operable units, excavation and disposal may be a reasonable alternative whereas an operable unit that had groundwater may require a pump and treat technology. The operable unit approach has several advantages but the principal advantage is that it allows prioritization and faster action on the area of the site that presents the greatest potential risk, the IWCS.

Another key feature of the Feasibility Study

work plan is the use of technical memoranda to address key technical issues and to encourage public engagement early in the Feasibility Study process and not wait for Feasibility Study completion. Next.

The next three slides will describe each of the operable units and review some of the remedial alternatives that will be considered for each. A summary list of all the remedial alternatives to be considered are presented on a poster, but I'm just going to go over some of them briefly here. You'll notice on that poster that the no action and no further action alternative is listed for all three operable units. No action is just what the name suggests. It's a cutoff of all current activities at the site. No further action is continuation of existing site controls, maintenance and monitoring. No action alternative is required by CERCLA and will be used as a basis of comparison for the other alternatives considered. However, the Corps does not consider no action as a feasible option.

The IWCS operable unit, let's start with that one, includes the radioactive residues and waste materials placed inside the IWCS by the Department

of Energy during previous remedial efforts. Remedial alternatives being considered for the IWCS operable unit include complete or partial removal of the IWCS contents, the residues and waste material, with off-site disposal or placement in a new on-site long term storage facility. No numeric cleanup criteria will be calculated for the IWCS operable unit. Residues or waste materials will be identified visually and removed along with an additional buffer of the surrounding materials.

The balance of plant operable unit will address soils and surface or subsurface structures outside the IWCS and any remaining IWCS soil or structures remaining after the residues and waste materials have been removed. The balance of plant materials will be delineated using numeric cleanup criteria developed during the Feasibility Study. Remedial alternatives being considered for the balance of plant operable unit include complete or partial removal of all the materials contaminated above numeric cleanup criteria with either on or off-site disposal.

The groundwater operable unit will address any remaining groundwater contamination after

remedy selection for the IWCS and balance of plant operable units. Note that this figure shows the groundwater plumes as they were presented in the RI. The plume boundaries will be updated based on what we find by completing the RI Addendum and then new plume shapes will be carried forward into the Feasibility Study.

Remedial alternatives being considered for groundwater operable unit include source removal and groundwater treatment, reactive barriers, plume containment, et cetera.

The Feasibility Study for the NFSS will first focus on the IWCS operable unit where a majority of the radiologically contaminated materials are located. If a remedy is selected that calls for complete removal of all waste materials inside the IWCS, the remaining materials will be addressed by the balance of plant operable unit. Sequencing the three operable units allows for the IWCS to be addressed first and accounts for the fact that remedy selection for each of the operable units selects alternative -- or affects alternative selection for the remaining operable units.

Prior to developing the operable unit Feasibility Study technical memoranda will be

developed to address key technical issues and the results from the technical memoranda will be used for evaluation of the remedial alternatives.

So we've presented two key features of the NFSS Feasibility Study work plan, operable units and the use of technical memoranda. One of the key benefits of the operable unit approach is that it allows for prioritization and quick action on the IWCS. Also breaking up the site into operable units allows for a more appropriate selection of remedial alternatives. Using the technical memoranda process allows for public engagement in the early stages of the Feasibility Study and allows the Feasibility Study efforts to begin while the RI activities continue.

And this is the technical memoranda development process. Again, the technical memoranda process provides a means for achieving a consensus on fundamental issues relating to the evaluation of remedial alternatives. Completing the technical memoranda in a stepwise process sets a specific path forward for completion of the Feasibility Study.

The process begins with the release of a fact sheet describing the purpose and objectives of the

technical memorandum and asks for public input. If necessary the technical memorandum objectives will be modified in response to comments.

Next the technical memorandum is prepared and released. A draft copy of the document will be placed in the administrative record and a second fact sheet will be issued to summarize the key findings of the technical memoranda and to announce the availability of the report. Public comments will again be accepted and substantial comments could require revision of the technical memoranda and another round of comments.

So you see, the technical memorandum process allows for public review and comment, both at the beginning and the end of the process.

The following slides present preliminary technical memoranda plan for each of the operable units. For all three operable units there are technical memoranda that specify remedial action objectives and applicable or relevant and appropriate requirements or ARARs, and boy, is that a mouthful, and to cover alternative development and screening technologies. These concepts require some explanation.

Remedial action objectives are requirements

that an alternative must meet to ensure the protection of human health and the environment. Remedial action objectives for the Niagara Falls Storage Site will be based on what are called applicable or relevant and appropriate requirements or ARARs whenever possible. ARARs are numeric criteria specified by law or regulation to ensure long term protection of human health and the environment. Each of the operable units will also have a technical memoranda to screen available technologies and select remedial alternatives. These technical memoranda will identify a list of remedial alternatives to be detailed in the Feasibility Study. I won't repeat the names of these technical memoranda but you'll see them on the slides for each of the operable units.

So let's start with the IWCS. Technical memoranda for the IWCS operable unit include a radon assessment which will assess potential radon levels emanating from the residues currently stored in the IWCS under various relief scenarios. The radiological exposure assessment technical memoranda will assess potential gamma radiation exposures under various IWCS relief scenario.

Waste disposal options and from all lessons learned, will address waste disposal options currently available for the various waste streams at NFSS and review lessons learned from activities associated with the removal of the K-65 residues at the Fernold (sic) site. And then we have those other two. Next.

Elements to be covered by the balance of plant operable unit memoranda include land use assessment and groundwater evaluation. This technical memoranda will evaluate possible future use of the NFSS property and research whether the upper water-bearing zone groundwater should be considered a viable source for drinking water. Establishment of radiological and chemical cleanup standards and evaluation of residual results will summarize regulatory requirements that establish radiological and chemical cleanup standards. For chemicals that do not have promulgated standards the technical memoranda will present details on how risk based cleanup values will be calculated.

And finally, the volume modeling and results will document calculations made to estimate the volume of materials that will need to be removed. And then we have those other two. Next.

The groundwater for technical memoranda to be developed for the groundwater operable unit include the same thing again, the establishment of radiological and chemical cleanup standards and evaluation of residual risks. However, this time it will be focused on groundwater. The two, the alternatives and the ARARs and then also a technical memoranda to update the groundwater flow and contaminant transport model may be needed if groundwater concerns continue to be an issue after remedial selection for the IWCS and the balance of plant operable units. The Corps will decide on the necessity and scope of this technical memorandum.

So, what's next? Planned activities for the NFSS include providing written comment -- I'm sorry, providing written responses to all comments on the RI by the fall of 2009. In the meantime, all the comments received have been posted to the NFSS website.

Conduct additional RI field activities and complete the RI Addendum, review public comments on the Feasibility Study work plan and revise the plan if necessary, begin implementation of the Feasibility Study work plan, begin preparation of

the IWCS technical memoranda and continue site maintenance, environmental monitoring and annual reporting.

Now, ARLEEN is going to introduce the poster presentation.

MS. ARLEEN KREUSCH: Thank you. We just put copies of CDs for the presentation for tonight's meeting in the back of the room; if you want to get those before you leave you're welcome to.

We also have hard copy copies of the presentation and we will be putting the presentation up on the website tomorrow. If you haven't visited our administrative record files in the Lewiston or Youngstown Library, we keep our reports in both of those libraries. We also have an electronic mailing list, so if you signed in tonight and didn't give us your email address but you would like to receive updates on the site, please put your email address on the sign-in sheet before you leave. Could you do the next slide that has our contact information, and there's also little cards in the back that have that information. And you can email, if you email FUSRAP at USACE.army.mail you'll reach me, so feel free to send an email if you have any questions.

And I'm the 1-800 number, too. So let's see, I guess we'll go to the next slide which has the different posters.

The RI posters are along the -- kind of like starting here and they go along the back of the room. I'd like the people that are going to be at that poster area to stand up so people will know who to talk to. Dave Kulikowski is from SAIC. Karen Keil, Dr. Karen Keil, our risk assessor. Okay. Then we have the next poster area is the Feasibility Study poster area. Who's going to be at that one? Okay. Hallie Serazin from SAIC will be there and Michelle Rhodes, our program manager. And the Lake Ontario Ordinance Works site, historic records search, Debbie McKinley will be there. Linda Houston and Jeff Hall, are you going to be in that area, too? Jeff, would you stand up as well. Linda is the program manager for the Lake Ontario Ordinance -- project manager for the Lake Ontario Ordinance Works site and Jeff is our project engineer, and Debbie is our records searcher. So they'll be happy to answer any questions you have about that information.

And then we have Jeff Tack from the Department of Energy and he is going to be right

over in this area and he actually has a board that if you have questions you want him to take back to the DOE he will be writing those down for you.

With that we're going to break into the poster session part of the agenda. I need everyone to move from this side of the room to that side of the room because we're going to be rearranging the tables and chairs. And we will reconvene around the round table portion of the meeting at 7:15. So I'll be calling you back to order at 7:15. Thank you very much.

(Off the record.)

(Round table session.)

MS. ARLEEN KREUSCH: Okay. I'd like to go through a few operating principles for the workshop portion of this meeting. First I would like us all to remember to be courteous, please. If you have any electronics, cell phones, pagers or whatever, put them on vibrate or turn them off. Listen respectfully. One person talking at a time. Raise your hand when you want to speak. Please state your name before commenting so that everyone knows who you are, and we want to give everyone a chance to comment. If there's something that we are not going to be able to

discuss at tonight's meeting or we don't have an answer for your question we will put that item in the parking lot, and we will either be, you know, providing you with the information directly or putting the information on the web, or we will let you know how we will be getting back to you with everything. So let's see, is there anyone that would like to add an operating principle or that is not okay with these four operating principles for tonight's meeting? Okay.

Sherry Spann is going to be writing down our comments or our action items tonight for me. Is there -- I guess we'll start with the RI Addendum and if there's any comments or questions that you have on any of the slides, Ms. Ellen Rager is sitting in the middle of the room ready to bring up the slide that you'd like to discuss. So if there's any questions on either the Niagara Falls Storage Site RI Addendum, Ms. Roberts.

MS. ANN ROBERTS: I'd like to ask, could you focus on the slide which dealt with groundwater background levels, because one of the comments that the RAB made was that the background set for groundwater had been taken on a former vicinity property which had a history of both radiological

and chemical contamination so was it valid to actually take background samples on such a property? And in particular, the RAB was really concerned about uranium in groundwater, the upper water-bearing zone, because uranium seems to be a very good indicator of subsurface contamination and when we went to look at the environmental surveillance data for the NFSS we found that originally the background uranium level was 3 picocuries per liter or less, and then over time it was gradually increased. The first four years samples were taken off-site in the upper water-bearing zone. Then after four years DOE for some reason decided to site their background actually on the NFSS itself, and at that point the background jumped up to about 7. Then over a period of time there was a gradual increase which we felt, since you're taking background actually on the NFSS, that's not really valid.

My concern now is that what you're suggesting to compare background groundwater concentrations would naturally occur in concentrations of uranium developed by US Environmental Protection Agency. What are we talking about? What is the value of uranium that that would be? Does anybody know?

MS. KAREN KEIL: It's a range.

MS. ANN ROBERTS: Right. But we're talking about a very specific site, the NFSS. We're looking at the soil and subsurface soil data that you produced, which I think is very good, by the way. It shows that uranium in the area is very, very low. You would expect to find virtually none. And you took several samples in and around the LOOW site, which if that is the case, which it obviously is, then to use something which is much broader is going to disguise the fact that we do have uranium contamination.

DR. KAREN KEIL: Well, we're not using it to replace the site specific background data set that we took. We're just using it to show that when the EPA promulgated the, for example, the net contaminant level for groundwater, they looked at surveys of uranium naturally occurring constituent in soils and water. They looked at ranges of uranium that occurred in groundwater -- in natural unimpacted systems. And you made a valid point that we took our background data within the boundaries of the larger 7500 acre LOOW site, and we did -- yeah, we also did it for groundwater. We took the larger groundwater data that was on

the modern property. Cheryl, do you want to speak about that or --

MS. ARLEEN KREUSCH: For the people that are on the core team or anybody else, would you please state who you are before you speak because the court recorder is trying to take down and they don't know who you are.

DR. KAREN KEIL: I'm so sorry. I'm Karen Keil, the risk assessor from the Army Corps of Engineers.

MS. ARLEEN KREUSCH: Thank you, Karen. Okay. I'm sorry.

MS. MICHELLE RHODES: I guess, Ann, you bring up a valid point. This was a former vicinity property which was cleaned up by the Department of Energy in the 1980s.

It has since been closed out, independently certified as clean. One of the important things about a background groundwater sampling is, you want to have similar geology to your site. Obviously uranium is naturally occurring as well and you want to have something that's representative of the area.

You also would like to have a lot of data, as much as possible, to make sure it's

representative. The quantity of wells that were available to us on Modern, which is hydraulically upgradient, or you know, the groundwater flows from Modern to our site, made it a good location from that standpoint as to the volume of data that we could use.

One of the things we did is, we did an extra assessment. Once we received the data from Modern, we looked at the uranium content specifically. That was a concern of ours as well. We looked to see whether or not there was any outliers or having the data followed in, you know, a certain range, and then having a couple that are real high, which might be indicative of you know, of suspect past contamination. So we did identify a couple outliers that were removed before we developed our background number.

In addition to that, we did what was called a uranium ratio assessment. Basically we looked to see the ratio of, to the different uranium isotopes, and what that tells us is, it sort of ages the uranium in groundwater. If it's closer to 1, then it's typical of a, sort of a site contamination type of issue. If it was above 1.2 which is the threshold we developed, then it

seemed to be not as suspect as far as that went.

One of the important things to note, and I guess this is what kind of led us to be more comfortable with it is, the more important thing is, you know, what risk does it pose. And we looked at the numbers, which were substantially lower than drinking water standards. So from a nature and extent standpoint, we understand that that might be a concern. But as far as a risk standpoint goes, and what eventually will end up being the major issue, the fact that it was so substantially lower than drinking water, basically even the outliers that we got rid of were below drinking water standards. But we eliminated them to be more conservative.

So I agree with you that that was a concern of ours, but I guess that the risk aspect and when we did the uranium ratio we looked at those and took out the outliers, it gave us a little more comfort with using that area.

MS. ANN ROBERTS: My concern is not for the actual risk aspect of the uranium concentration. I am concerned about the usefulness of uranium levels in groundwater as being an indicator of subsurface contamination. Now, that's why I have

read the paper that the Corps put together on uranium isotope ratios. I have some fundamental problems with what's in that paper, but I think for the purposes of this meeting, this is not the appropriate forum to bore everybody to tears with it.

But having looked at the historical data which is extensive for the Niagara Falls Storage Site, the environmental surveillance of groundwater, the original off-site readings were 3 picocuries per liter or less and several of the wells at that point which were located on the NFSS were similarly 3 picocuries per liter.

And then over time the levels of uranium crept up. Now what's really worrisome to the community is that we are now finding that levels of uranium in groundwater are very high, comparatively so, to a background of 3 on several vicinity properties. And we're finding things like 100 picocuries per liter, 60 picocuries per liter. And this information has not really been made public.

So the concerns for radioactivity on the vicinity properties continue to grow. You say that this particular vicinity property where the

background samples were taken was certified as being clean. But review of the Department of Energy surveys show various flaws in what was actually done.

The 1972 surveys in remediation have been completely discredited because the detector was held a meter above the surface. So they would have missed, the AC would have missed most of the surface and subsurface contamination. So I think as a community we have no confidence that citing a background on a vicinity property is going to be realistic. And then if you follow that through to the other vicinity properties where soil can be disturbed, we're very concerned.

MS. MICHELLE RHODES: I guess, too, having a Department of Energy representative here tonight, which is very helpful, I'm sure that he'll take that back to his office as well as a concern. I know they are very open as far as listening tonight and getting more information on what the community is most interested in.

DR. KAREN KEIL: He's also a little bit careful comparing historical measurements to current measurements, I mean there's a difference in measurement techniques. You've done a mass

basis versus a radioactive isotopic basis which we do today. And there may have been a difference in the way they're doing the conversion, too. We understand your concern but it's, maybe just the numbers may not be exactly comparable.

MS. ANN ROBERTS: I don't want to take a lot of time. I just have --

MS. ARLEEN KREUSCH: We'll let you counter and then we'll see if anybody else has any other questions.

MS. ANN ROBERTS: Right, right. I think what Karen has just said is true but that if we're comparing something that's of the order of 100 picocuries per liter with something that was measured then as being 3, the recent data for the NFSS, it's risen to about 9, I think, picocuries per liter. Yeah. So we're talking an order of magnitude of about 10.

MS. KAREN KEIL: Not, I mean 100, we'll never see 100 picocuries per liters background value.

MS. ANN ROBERTS: Right. Thanks.

MS. ARLEEN KREUSCH: Okay. Does anyone else have any questions on anything in the presentation? Niagara Falls Storage Site, Remedial Investigation Addendum or the Feasibility

Study approach? Yes. And your name is.

MR. BILL SKOBEL: My name is Bill Skobel. I just have one quick question. What's the current planned schedule for the submittal of the RI Addendum and the F.S. process?

MS. MICHELLE RHODES: Right now we're hoping to do the field work on the Remedial Investigation Addendum this fall. Right now we're working on awarding the contract which will be followed by development of work plans and followed by the field work. So we're looking at definitely the report to be followed after that, the following year. From the Feasibility Study standpoint, the first deliverable that will be seen is the Feasibility Study work plan and basically that just lays out sort of the approach that we're presenting tonight in a little more detail.

And that should be coming out this year, as well as we're hoping, best case, that the radon assessment tech memo which is the first Feasibility Study tech memo for the Interim Waste Containment Structure.

MS. ARLEEN KREUSCH: Any additional questions? Nobody else? Nils, do you want to go first.

MR. NILS OLSEN: My question though isn't about the slides that were put up.

MS. ARLEEN KREUSCH: Okay.

MR. NILS OLSEN: My name is Nils Olsen. I've had a long engagement with this process. I was the first RAB citizen co-chair on the RAB that was dissolved and replaced by the current RAB which is no longer in active dialogue with you. And then I'm on the steering committee of the RAB.

My question and a number of people have asked me about this, is to seek a clarification with respect to the interim removal action on Area C drum trench and trash pit at the Chemical Waste Management property that was announced I think at your last meeting. In the March 2009 site status update you stated that the intent of the non-timed critical removal actions at the former LOOW site is to lower the threat of exposure and/or contaminant migration from the areas of concern until a final remedial action is implemented.

You also indicate that these interim actions will be informed by HHRA and SCERA, which I guess are risk assessments with respect to health and the environment. In the May 2009 risk assessment fact sheet on page 5 it states that no human

health or ecological concerns are present for the drum trench and trash pit. So I guess what people are wondering is, is this still an interim removal action that is being studied and planned for by the Corps in light of the fact that you seem to suggest that there isn't any immediate threat. And I'll say that the reason that people are concerned is because of the fact that areas with considerably more access than the interior of Chemical Waste Management, which is surrounded by a barbed wire fence and guards, and on which most of the people who are proximate to that area are usually wearing Tybek suits, there are areas that do raise health concerns, namely the wastewater plant in the Town of Lewiston, the underground utilities in the Town of Lewiston, the Occidental Chemical property and, of course, the single biggest concern of this community I suspect is, has been, and will continue to be the proximity of the school property to both the Lake Ontario Ordinance site and the Niagara Falls Storage Site. So there is some concern that this has been announced as the first, to my knowledge, interim removal action, and that these other sites that I think are of more concern to the community if for

no other reason than the fact that they're much more accessible, first of all, and secondly, there is, I must admit, some cynical concern because this particular portion of the Chemical Waste Management property is closely connected to the proposed site for the new RMT landfill that's being proposed so that this work could be seen as a way to kind of further that project.

So I guess, in light of those concerns, is it still the Corps' position that there should be an interim removal action on Area C, in light of your published conclusion that there aren't any threats, immediate threats that are posed by it.

MS. ARLEEN KREUSCH: Okay. Thank you, Nils. Linda, would you like to take that?

MS. LINDA HOUSTON: Yes. My name is Linda Houston. I'm the project manager for the LOOW, and yes, we are looking at Areas A, B, and C. They had been identified a number of years ago in Phase 1 and Phase 2 RI work that EA had done.

And we are following the CERCLA process with that. We do not have a scheduled removal action right now. What we're doing is looking at the areas. If you look at the interim removal process under CERCLA, this is a potential thread. There

are point sources that we're interested in looking at and removing, the point source of buried drums that have been identified. So there are three separate areas that, yes, we are looking at them. We do not have immediate remediation plans for that, but we do not want those to fall through the cracks.

I would like to address your wastewater treatment plant concerns and some of your other concerns. We are moving out, we have received work plans that are being posted to our website this week for the Phase 4 Remedial Investigation at LOOW, which does in fact cover the wastewater treatment plan specifically. And we will be doing some sampling in that area. The underground utility report was released a couple weeks ago and our intent is for our next public meeting that we would like that to be one of the main topics of discussion to give folks time to read that report and so that is our plan, to discuss that.

As far as the school concern, we do plan to do some additional work in that area and also in the western drainage ditch as well, on the LOOW side.

MR. NILS OLSEN: That's certainly

encouraging, I guess. Just as a non-technical person, I am a little confused by the May statement that there are no health or environmental risks associated with that Area C.

DR. KAREN KEIL: That statement was based on -- that risk assessment was based on the media outside of the actual drum trench and drums. It didn't include a consideration of exposure directly to the drums. So I mean, the interim removal action is based on the fact that we have, like Linda said, we have a source term that could potentially leach into the environment but the risk itself to the media, the soil surrounding and top of the drum trench don't show any current leaching from the drums.

MR. NILS OLSEN: I mean, surely the threat to health would be minimized by the fact that it's in the heart of a carefully regulated and policed hazardous waste landfill.

DR. KAREN KEIL: Sure.

MR. NILS OLSEN: Where you don't have a lot of people wandering around --

DR. KAREN KEIL: That's true but --

MR. NILS OLSEN: -- without environmental protection as opposed to many of these other sites

and not to mention the school with the 3,600 children and staff. So I guess that's the basis of the community's concern and I'm certainly pleased that you're looking at these other areas but we would certainly hope that given the history of the rather uncertainty of funding that's available to you that funding would be focused in areas where there is more of a risk of public exposure than Chemical Waste Management.

But this doesn't mean that the RAB is concerned with Chemical Waste Management, I hasten to say. This is really a concern with respect to the process and the timing that you employ when you enter into these cleanups.

MS. ARLEEN KREUSCH: Thank you, Nils. Does anyone else have a question before we go back to Ann? Okay. Ann.

MS. ANN ROBERTS: Before I follow through with my question, something else just occurred to me as Nils was speaking, and that was, is there a definition of when you would actually carry out an interim removal action if there's no risk?

My understanding from what I've read, which may not be correct, but that an interim removal action is only carried out when there is some

immediate risk.

MS. LINDA HOUSTON: I'd like to respond to that again. This is Linda Houston again. Actually it can be carried out if there is immediate risk, if there has been a release, but it also can be carried out if there is a potential human health or environmental release.

MS. ANN ROBERTS: I think I would just, having looked through the documents for several years that it just seems a sudden coincidence that you are now concerned about the risk of this particular drum trench when it sat there for 20 years. And if there's no evidence that there is material in the surface soils, why the sudden rush to suddenly clean this up?

MS. ARLEEN KREUSCH: Thank you for that comment, Ann, and did you have another question on something else?

MS. ANN ROBERTS: Sorry. I lost my train of thought, but yes. Could you go back to the slide which showed the uranium plumes. I wanted to ask what the investigation was likely -- I was wanting to see the one in the northwest corner of the NFSS. Right. That particular plume. What is the intention of -- what are you going to do to

investigate that? And the reason I am asking that is because from the work that the RAB has done looking at historical documents, in particular Dr. Beck, who chairs our radiological committee, he has actually identified a railway line which runs through that plume and then continues up northwards through the vicinity shops and our concern is that we know that the vicinity shops where, the main areas where the nuclear reprocessing waste from Knoll's Atomic Power Laboratory was stored for several years, and we're assuming that given the history of that particular area which is included in the NFSS that if you continued northward, you will continue to see that plume because of spillage from the handling of the KAPL waste. So again, this comes back to the vicinity properties. There is a likelihood of contamination.

We went to the trouble of looking back at the 1972 remediation effort and the 1980s remediation effort, and that particular area, the vicinity shops, was not even surveyed. So the 1980s DOE survey says there is no history of waste storage or disposal on vicinity property X, which is totally incorrect. So are you going to be looking

at the vicinity shop area where the rail line was. Are there any plans yet of what you're going to do?

MR. TOM PAPUDA: Could I interject just for a quick second? Tom Papuda, New York State DEC, Albany. As far as I was ever concerned, that particular plume up in there didn't have anything other than uranium probably in it, is that the fact? Is that the case. So there is a major disconnect there because we all know that KAPL waste, a majority of it was highly concentrated in cesium so you'd expect to see cesium.

If we're not seeing that, it's a big leap to make to think that that plume up there in the northwest corner somehow related to KAPL waste and that, you know, this material was spilled out all along the rail line. I find that kind of ludicrous to make that leap like that. We've never seen any cesium up in these plumes anywhere. So how is that related? I'd like to understand how that could be a possibility.

MS. ANN ROBERT: Ann Roberts, and I'd like to respond to that. I think in our evaluation of the KAPL waste one of the oversights which came to our attention was the lack of analysis, the strontium-

90 in groundwater. We believe having looked at several documents that strontium-90 is much more likely to migrate down into the groundwater whereas cesium-137 is likely to bind to the soil and sit on the surface. And if strontium-90 was not looked for, and I don't believe it was, the limited analysis for strontium-90, the detection limits were set that much higher than they were for cesium-137 anyway. So that I think there is good reason to, if you are going back in that area, to actually add strontium-90 to the list of groundwater analytes that you're going to look for. And I don't believe that's been addressed.

MS. MICHELLE RHODES: Thank you for your comment, Ann. This is Michelle Rhodes. As Tom mentioned, the plume in the northwest area is uranium. Obviously there has been documentation that KAPL waste was stored in that vicinity and just to the north of it, which is vicinity property X. As part of the Remedial Investigation Addendum we have, the scope basically reads, you will install 23 sample locations.

It's not specific at this point. But what we did was, we took the comments we received from the RI and made it an appendix to our scope and say,

these are your objectives with these locations.

So what we plan on doing specifically in that area is, obviously we want to define the off-site extent of that plume and once we do, we want to monitor it. We envision it becoming part of our environmental surveillance program. With the documentation that was forwarded to us, we will definitely be adding cesium in that location. I just wanted to follow up. We actually did follow up on your original comment on the strontium and plutonium issue in groundwater.

As part of the environmental surveillance program we took the three groundwater wells which had cesium detects in them and sampled them for plutonium and strontium just to see if there was any, you know, we used those as kind of a worst case scenario. If it was going to be anywhere, it would be there. And they were non-detect.

So just so we really did do some strontium testing in groundwater although it was limited, as part of our follow-up environmental surveillance portion. But we can definitely add strontium -- I'm sorry, cesium to the list of -- and strontium to the list of constituents that we look for in groundwater in that off-site area.

MS. ANN ROBERTS: Can I just respond briefly? I noticed in the handout which covers the addendum that you were adding various other analytes to the environmental surveillance for the NFSS, the waste containment structure. That's a much more extensive list because you've got strontium-90 there, you have technetium. But what you're saying is for this particular delineation of the plume, you're not doing all of the analytes that you're doing for the NFSS?

MS. MICHELLE RHODES: For that location the original sample will have a full suite analysis. The follow-up is part of the environmental surveillance program, the parameters that we'll use will be based on those results. So basically we do a full suite start and whatever pops up as a detection, obviously uranium we expect to be there, will be pursued as part of the ongoing environmental surveillance.

MS. ANN ROBERTS: Could you just define what full suite is with respect to radiological, what you will be looking for in those wells.

MS. MICHELLE RHODES: Off of my head I would say osso spectroscopy, so you would identify uranium and thorium. We would look for radium.

We would do the cesium. Again the spec covers a lot more and I'm not a health physicist so I might need some help here. We also do gamma spec so I'm not sure. Cobalt.

MR. TOM PAPUDA: Yeah. Cobalt and cesium. You know, I mean, the protection limits for stuff like that in water is not that great, but if it's there, you know, I mean if they count appropriately they can see it, but I mean, if it's there at any significant level above background it should be able to be discerned.

MS. MICHELLE RHODES: It's basically for all the constituents we look for as part of the Remedial Investigation would be pursued.

MS. ANN ROBERTS: Can I make one last point and then I'll be quiet? What we found in looking at some remedial surveys that had taken place in the past is that where you had cesium-137 and strontium-90 from the cattle waste, they didn't remain together. So there is a suggestion that the strontium-90 migrates differently to cesium-137. So I wouldn't expect if you have sampled previously and found cesium-137, I don't think you can anticipate finding strontium-90.

I think what you would have to do is go back

to areas where you knew there was a spill or had been identified as being an area of a spill, and actually used that to do some subsurface sampling and test the groundwater in that area to see if the strontium has migrated down and is below where the cesium was originally. So I think that's a piece of information you should use in your plans to evaluate that plume.

MS. MICHELLE RHODES: And that's very true. We have detected cesium independent from plutonium and strontium on the site. I'm not sure how much of that is associated with the cap and how much might be associated with the University of Rochester burial area. But definitely this area, I agree based on the past activity, would be more suspect and therefore a better indicator of if there were a potential that's where it would be.

MS. ARLEEN KREUSCH: Thank you, Ann. Anyone else with any questions? Nils.

MR. NILS OLSEN: It's not a question but I guess since it's a public meeting, it's more of an observation, and I just want to express my disappointment that after two meetings with virtually every elected official from this part of Niagara County including representatives from

Senator Schumer that we still find ourselves in a position where the people that have been involved in this in this community, the people with the technical expertise are reacting to your presentation rather than having discussions with you in a collaborative manner prior to this opportunity. I really hope that at some point we'll stop wrangling over official roles of community involvement and just try to create a system where this sort of involvement can occur in a more timely and useful fashion than it's likely to do in a meeting like this.

MS. ARLEEN KREUSCH: Thank you for that comment, Nils. There's no questions? On the Feasibility Study approach, any comments or questions on the approach that we're going to take for the Feasibility Study? Ann?

MS. ANN ROBERTS: I hesitate to monopolize the microphone but if nobody else is going to speak, then I think I'd rather use the time. On the Feasibility Study one of the RAB's concerns is that you don't really have any real data as to where the residues are located in the interim waste containment structure. You know where they were originally, but where are they today? Have

things moved? And there seems to be a total absence of that sort of data, and I can appreciate that you are reluctant to breach the cap, but there doesn't seem to be any indirect information regarding the area to the south because, I assume because of the amount of metal in there, that won't allow some of your electromagnetic techniques to work. So it just seems illogical to me that you can be moving on to the Feasibility Study when you don't have enough data.

MS. MICHELLE RHODES: We do have, as you mentioned, some of the as builds of how exactly the Department of Energy put the waste into these former foundations that used to be part of the freshwater treatment plan of the LOOW.

So as far as the movement goes, it was helpful to us for out look into the Feasibility Study to know that it wasn't just a pile of K-65 residue. It was actually contained within the building at the time of placement. So any shifting, settling likely occurred, the extent to which we don't know fully. However, in the Feasibility Study we're looking at alternatives to address the cell and the feasibility of implementing them and at this point we believe we

do have enough information even though there will always be uncertainty associated with that. We know the general area in which they were placed. For example, you know, we're looking at a removal of the K-65 as one of our options. You know, we know the K-65 is buried within Building 411.

Are we going to just take one of the bays that we think the K-65 is located in? No. We would assume that we'd take the whole building and anything subsequent to that dig. Another one is a partial removal of the residues, so we would remove the K-65 entirely and also some of the other residues on-site which are also stored within building foundations. One of them obviously is complete removal. So I think from at least looking at the alternative sampling, we have what we need for the Feasibility Study.

If you look at, say a removal option is selected, would we have enough information for a design? No. In that case we would consider collecting more information from the cell. It would make more sense at that time to have more information for the actual design. But at this time when we're still in the planning phases, we believe that we do have enough information to

proceed, although there is definitely uncertainty associated with it.

MS. ARLEEN KREUSCH: Ann. Anyone else.

MR. TOM PAPUDA: I think as somebody who has worked for the State overseeing these FUSRAP projects now for 10 plus years, I can tell you that we're fortunate with the Niagara Falls Storage Site in that we do have a certain amount of as-builts. On other projects we've always come to the conclusion that you can sit there and study it to death and then when you put the first bucket in the ground the rules usually end up changing somewhat. So I think we're pretty fortunate here, and like Michelle said, I mean, when the time comes, if they do choose to do any removal, partial or full or whatever, that's when the rubber's really going to hit the road and I think that, you know, we can sit there and we can pontificate about this all night as far as where things are and all that, and it may come down to the day when we finally do get to put the bucket in the ground and do that. And it's going to be a major undertaking and I think that's where the focus is going to really have to be because that's going to be a significant project that nobody's

undertaken other than pulling the materials out of Fernold. So this is not something that's going to be taken lightly I'm sure, and I'm sure the Corps can do a good job on it.

MS. ARLEEN KREUSCH: Thank you, Tom. Guy.

MR. GUY ZACZEK: My name is Guy Zaczek. It goes along exactly what Tom said and what Michelle was talking about. There were five other sites that were built that were TNT sites. And the one thing that I found out about World War II, once you had a set of plans, they were cookie cutters. The same buildings you see in New York City are the same buildings you see in Boston, et cetera, et cetera. It sounds kind of like common sense, okay. There was a shortage of men. There really was. And men were draftsmen. So once you had one set for TNTs they were going to just take those prints and kind of plop them however they could on the land over and over again.

I totally agree that when you dig in the ground you're going to find something different that was unique to the area, we went around the boulder. And we do have as-builts as such. Okay. But I think it would actually be more helpful to see maybe the as-builts, if they exist, for some

of these other three or four sites, because it would give you a little bit more of a road plan. It would tell you why they're using a 42 inch pipe coming off the Niagara River, et cetera, et cetera. And potentially, okay, where they ran the fire pipes, okay, where they ran the potable water, et cetera, et cetera. So you have less of those surprises. Okay. Thank you.

MS. ARLEEN KREUSCH: Thank you, Guy. Additional questions or comments? Nona McQuay.

MS. NONA McQUAY: Yes. My name is Nona McQuay and I am on the LOOW RAB and have been since the inception with the US Army Corps of Engineers. When we look at the Feasibility Study I am assuming that costs of the alternatives will be considered, and it's very hard for me to understand how you can plan costs when you're looking at maybe running into surprises when you do put that first bucket in the ground or whatever. In other words, if you can't characterize the waste containment site at this point in time, how can we come up with feasible alternatives, particularly costwise, because those of us in the community feel that it's going to come down to money in the end, and we don't want

to say, well, this cost could be an overrun of a huge magnitude because we don't know what we're getting into. Do you have any comments on how the Feasibility Study will cover that without characterizing the interim waste containment structure?

MS. ARLEEN KREUSCH: Okay. Thank you. Joe, do you have enough tape to get the response to this? Okay. And then he's going to change tapes after Michelle responds.

MS. MICHELLE RHODES: Okay. Thank you for your comment. One of the things that we look at in the Feasibility Study is cost. The costs that are in the Feasibility Study, however, are not very -- there are some assumptions that can be made. They're not as specific as costs for remedial design. So basically we have to make some assumptions in our cost estimate in the Feasibility Study to account for a lot of the uncertainty. Just to mention, too, once we develop the alternatives for the Feasibility Study we are going to be screening them with the nine CERCLA criteria.

The first is, you know, it has to be protective of human health and the environment.

Anything that is not is not considered past that screening point. The next is, it has to be protective of our applicable requirements. If it is not, it will not be considered any further. There's other weighing criteria of which cost is a consideration. Also, the long term effectiveness of the alternative being suggested, the short term effectiveness, is it even, are you able to implement it. And then also State and community acceptance. So cost is one of the factors we look at when screening these different alternatives in the Feasibility Study but they're also weighed by these other factors as well and obviously if it's not going to be protective of human health and the environment and not meet regulation it won't be considered. So the cost basically is a rough estimate that is typically used in Feasibility Studies. The actual more detailed cost estimate would require, additional sampling is usually done during the remedial design phase.

MS. KAREN KEIL: (Inaudible).

MS. ARLEEN KREUSCH: Karen, we can't hear you.

DR. KAREN KEIL: The EPA, the guidelines underlying Feasibility Studies indicates that the

costs only have to be accurate I think it's to within like 30% or 50% because it's expected to be an estimate, and really the purpose of the cost estimate in the F.S. is not to get an exact cost that you use for design and planning, but it's more to get like a comparable cost, to compare costs across alternatives. So it's expected to have some kind of uncertainty associated with it. That's standard for a Feasibility Study.

So you can compare, you know, towards magnitude, differences in costs. That would help you weigh the alternatives.

MS. ARLEEN KREUSCH: Okay. Joe needs to change his tape so I'm just going to pause everybody for a second while he --

(Off the record.)

MS. ARLEEN KREUSCH: Nona, did you have additional follow-up for that one?

MS. NONA McQUAY: Just that it's not very reassuring to know that the final cost could, for complete removal of the IWCS could bloom because of lack of understanding as to whether that bathtub leaks.

DR. KAREN KEIL: I mean, that's also a good point. I'm not really the person in my office to

discuss the cost estimating process. That's not my area of expertise. But I do want to point out that we have recently started doing our cost estimates a little differently where we look at uncertainties in each of the steps, you know, that we are looking at for the remedial action, and those uncertainties then are factored in to the overall cost. So when there is more uncertainty then the cost will grow to account for the uncertainty. So --

MS. MICHELLE RHODES: I guess to add about the cost perspective, Bill Kovaleski (sic) couldn't be here tonight, and the reason that he couldn't is because he's briefing the assistant secretary of the Army and Civil works on this project to make them aware of the potential future cost impacts so that as far as planning purposes they can be aware of what might be coming up. With our new approach in forwarding the Interim Waste Containment Structure as a priority, now once we get those Feasibility Study cost estimates, you know, Congress will get a range of possible costs associated with each alternative. It will be a good communication tool.

Obviously our budget infuser ap is about $140

million a year. Obviously not all that goes to the Buffalo District and certainly not all that is the Niagara Falls Storage Site but the, obviously we're all aware that complete removal costs would be in excess of that. So he is communicating way up front these issues. We're hoping that cost is a factor of the factors that we look at. So we're trying to look at this very, I guess neutrally and go through the process and let it work as it's intended.

MS. ARLEEN KREUSCH: Thank you. Nona, does that answer further? Okay. Additional questions. Ann, any further questions?

MS. ANN ROBERTS: I apologize if I'm hogging the microphone, but could you put up the slide that shows the different alternatives. Was there a slide that --

MS. HALLIE SERAZIN: The one for the IWCS?

MS. ELLEN RAGER: I think you verbally went through that, Hallie. I'm not sure if there was a slide.

MS. ANN ROBERTS: Maybe there isn't a slide. Did you say what the alternatives are?

MS. HALLIE SERAZIN: Yeah, I think that I --

MS. ANN ROBERTS: Did you say what the

alternatives are for –

MS. HALLIE SERAZIN: I did. I probably -- There is a whole list of proposed alternatives.

MS. ANN ROBERTS: How many alternatives were there?

MS. ARLEEN KREUSCH: Are they on a poster, I can go grab the poster.

MS. HALLIE SERAZIN: They are on a poster.

MS. ANN ROBERTS: Thank you.

MS. MICHELLE RHODES: You're not talking about the operable units. You're talking about the alternatives.

MS. ANN ROBERTS: For the Interim Waste Containment Structure.

MS. MICHELLE RHODES: Okay. I don't think we have a poster on the alternatives. I think that was something that we mentioned.

MS. ANN ROBERTS: Could somebody read them out, because I can't see. Sorry. Thank you.

MS. ARLEEN KREUSCH: Okay. For the Interim Waste Containment Structure the alternatives being considered are listed as removal of the entire Interim Waste Containment Structure contents with off-site disposal, removal of all residues except the R-10 pile with off-site removal, removal of K-

65 residues with off-site disposal, removal of residues with placement in new on-site long term storage facility, limited action, which is elaborated further as enhance the current Interim Waste Containment Structure, no further action with site controls and maintenance. I'm guessing that means continued, right. No further action has the --

MS. HALLIE SERAZIN: No further action is continuation of the maintenance and monitoring.

MS. ARLEEN KREUSCH: And then the last one is no action, which is required under CERCLA.

MS. HALLIE SERAZIN: Right.

MS. ARLEEN KREUSCH: But you stated that that was not going to be --

MS. HALLIE SERAZIN: It would not be applicable, correct.

MS. ARLEEN KREUSCH: Okay. Thank you, Hallie.

MS. ANN ROBERTS: My question regarding that was, given the evaluation which has gone before by the National Academy of Sciences that says it's not safe to leave the K-65 in its present location, that really it is high level waste in terms of its activity, and it should be removed to

some remote place. Why, why are you actually even considering the possibility of leaving it where it is, as an option?

MR. TOM PAPUDA: I think -- this is Tom Papuda from DEC. I think in any remedial investigation regardless whether it's EPA or anybody, there's always going to be a myriad of proposed ideas for the actions that are going to take place on any given site.

It's just to give you a range. It's not because they want to say that that's going to be the one they're going to go for. It's just that you have to look at your range of options because removing certain source terms may reduce the risk enough that if they go and look at it on a risk basis that maybe things will be okay. The K-65 being the hottest material that's in there has almost 600,000 picocuries per gram of radium in it. That's the major player in this. And that's why they have to look at it like that, because yeah, frankly, you know, right now Bill Kovaleski is briefing the deputy secretary or assistant secretary of the Army. It's going to be sticker shock. Let's be honest here.

I mean, we're talking about multiples of the

annual FUSRAP budget for the entire country. We're not just talking about a few million dollars here. We're not talking about the Linde project that's gone over $100 million since it was started in the year 2000. We're talking about a major undertaking here. And yeah, there's going to be sticker shock, so there has to be a range that the most logical, the most protective, and the most cost effective remedial design is the one that comes in the end. I mean, we have to be reasonable about this. You know, the numbers that are being floated around and been floated around for years range into the billions. So take that in comparison to the $140 million that Michelle said was the annual FUSRAP budget for the entire country. We're talking about a multiple year project. We're probably talking about, it could be, you know, depending on how money is programmed, it could be a decade or more.

We're talking about something that's not going to happen tomorrow either. We're talking about something that's going to be a long time in the making. There are a lot of FUSRAP sites out there. The way the Corps programs money is already well in advance of, you know, this is

someplace down the line. So we can't sit there and worry about whether or not they're going to sit there and thumb their nose at everybody and say, no, we're not going to take anything out of there. Let's be realistic here. They have to look at all the options and that's what they're doing. It's not because they're playing favorites or they're doing it on purpose. This is the way the EPA and every other agency that does these remedial actions under CERCLA has to perform their duties. That's the way they're compelled to do it.

MS. MICHELLE RHODES: I guess just to follow up, you mentioned the high level, and that will play off of our, we're doing an ARAR tech memo, so that's where we pick our ARARs which will sort of characterize what type of waste it is. So that will be part of our Feasibility Study tech memos which everybody will have an opportunity to comment on. The National Academy of Science's recommendation, that is our partial removal scenario. We do have a scenario that modeled after their recommendations. And I guess just, you know, to relay about the costs, if we weren't seriously looking at all these alternatives, you

know, Bill wouldn't be at the ASACW right now. I think that we need to communicate the full range of what we're looking at, and this Feasibility Study is going to be a communication tool, it really is.

MS. ARLEEN KREUSCH: Thank you. Michelle, just for the audience, you used the ARAR acronym.

MS. MICHELLE RHODES: I'm sorry.

MS. ARLEEN KREUSCH: And I'm not sure everybody know what that is. I know Hallie explained it a little bit in the presentation but you could -- could you just elaborate a little bit further on that.

MS. MICHELLE RHODES: It's applicable relevant and appropriate requirements so basically you have a certain type of waste and there's certain regulations for different types of waste. So it's trying to pick what regulation you would apply to your waste stream.

MS. ARLEEN KREUSCH: Thank you. Ann.

MS. ANN ROBERTS: One final thing. The contents of the Interim Waste Containment Structure documented. There is also contained within that some material from prior cleanups on some of the vicinity properties. I seem to think

that there were some materials actually placed within the Interim Waste Containment Structure as opposed to the R-10 pile from one of the prior cleanups. And it might have been the 1970s.

But if that is the case, then are you concerned that the Interim Waste Containment Structure might also contain some of the KAPL waste and the contaminants which are very different from the uranium or extraction residues. This is going to be nuclear reprocessing waste.

MS. MICHELLE RHODES: That's a very good comment. The good thing is that with the KAPL waste, a lot of it was shipped back to Oakridge, but obviously we know that some of the waste was incinerated on site, so we do see remnant contamination associated with that. But the quantity of that with respect to the rest of the residues is very minimal. However, that is something that we're going to have to consider when we look at ARARs. You know, there's -- you know, you mentioned the high level waste.

A lot of reactor waste is classified as high level waste. But a lot of the other residues may not have the same classification. So it's something to consider. I'm not sure it's going to

be something that drives our ARAR but it definitely will impact our disposal. For example, Waste Control Specialists is a landfill in Andrews, Texas and Fernold, their K-65 is right now being temporarily stored there. They're creating a new cell for it and -- I just lost my train of thought. Oh, disposal. So they have certain, what's called WACs or waste acceptance criteria. So their cell is actually what's called an 11A2 cell. It's just a type of classification and one of the things that they do not like in some of their low level cells, they don't want any detections of plutonium. So in cases like that, it might not be as much of an ARAR issue as it would be a disposal issue. We would need to ensure to them that on average, or a composite sample of what potentially could be removed would not contain that. So I think that's something definitely we need to consider in our Feasibility Study.

MS. ARLEEN KREUSCH: Thank you, Ann. Guy, you're looking like you had another note.

GUY ZACZEK: I'm glad I have her here.

MS. ARLEEN KREUSCH: Any other questions? Go ahead.

MS. BONNIE GUCKIN: I just have one question. Bonnie Guckin. I'm just a resident of Youngstown. No specialties.

MS. ARLEEN KREUSCH: Could you spell your last name so they can put it in the record.

MS. BONNIE GUCKIN: G-U-C-K-I-N. When you talk about, let's say you do remove everything from the site and we talk about remote locations. Texas is also thrown out there, and you know, humans live there as well. Where would this waste go? Would we just be giving it to someone else? I mean, I realize we as a community all think, oh, we've got to get it out of here. And I did talk to someone saying, would it be more of a risk to us as a community, to the people we would be dragging it through, let's say by rail, and where it would end up, would that be more of a risk than making a new containment site where it is?

MS. MICHELLE RHODES: That's a good question. As far as the transportation risk, you know, yes, transportation poses risk. I think the biggest risk we've had as far as, we in general, in the waste transportation industry I guess you could say, is accidents, you know, spills. As far as where, that's one of the objectives of our waste

disposal option Fernold lessons learned tech memo. Right now there currently is no landfill that can accept this type of waste. However, as Fernold is kind of progressing, they are likely to be permanently housed in the Waste Control Specialist landfill shortly. So that may be something that is feasible to us in the future. Also Energy Solutions, which is in Clive (sic), Utah has an 1182 cell that might be an option for us. The reason that we can't access it right now is the radium waste acceptance criteria is too low.

We don't know if we could meet something like that. It's about 10,000 it's called picocuries per gram. The new facility in Andrews, Texas is 100,000 so it would just be a matter of them amending their waste acceptance criteria, which has happened. It's not totally unlikely. So we definitely in this tech memo wanted to research a little more into maybe potential other available locations, document some of the limitations associated with their use, and that's sort of where we're headed with that tech memo.

MR. TOM PAPUDA: I think the other thing, too, is the Frenold waste was transported down to WCS in very specialized engineered containers.

This is not going to be a situation like we've seen at Linde or at Ashland where they just throw it in rail cars and cover it up and run it down the road. This is going to be a very, very highly choreographed engineered endeavor. These containers, we got a presentation on a while back, are actually designed to reduce the dose, to mitigate radon release, all these sorts of things that are associated with this waste. So this is not something that's going to be like, even if like let's say they have to take it by truck to the nearest rail siding and load it on trains from there, you know, if one of these containers goes and rolls off or they get in an accident or something like that, there's probably not going to be any spillage. These things are designed purposely to contain this stuff under even catastrophic situations. They have to meet certain DOT requirements and all that in order to be used as specialized containers.

There's certain requirements as part of DOT regulations for the transport of radioactive materials, too. So this is not going to be something again that's going to just happen by the bucketful and thrown into a rail car or gondola or

anything like that. This is going to be really something that's going to be again, like I've said before, a major undertaking.

But safety of the community during transport and the safety of the workers during it via whatever techniques may be employed if removal does happen is going to be something that's going to be really highly studied, I'm sure.

MS. MICHELLE RHODES: Just one other point to make is, that's sort of why we have the Fernold lessons learned is to take advantage from what they learned. They did an incredible amount of testing that we could really take advantage of.

I mean, they developed these steel casks, these IP-2 containers. They shipped them two per truckload, and like you said, if there was an accident it would tumble off and you'd probably stick it back on and there wouldn't be a spill necessarily.

One of the things we also did in our Feasibility Study process is ensure that some of the Frenold contractors who had direct experience with this waste were actually reviewing our tech memos. So we're trying to capture as many lessons learned from them as far as the removal option as

we can.

DR. KAREN KEIL: I want to add something to your -- can you put up the slide with the tech memos for the IWCS. So Michelle mentioned that when we look at choosing our remedial alternative in the F.S. we look at different we'll call them balancing criteria. One is short term risk. It's basically the short term impacts to human health and the environment during the remedial action itself. And that's why the first two things that we're going to study, we're going to develop a technical memorandum on are the radon assessment and the radiological exposure assessment. So we're going to look at potential for radon release when we open up the cap and how much radon can be released, can it expose the workers or the surrounding community, and then look at also other types of radiological exposure like from gamma radiation. So we're going to study those and look at what the short term risks are to the workers and the surrounding communities if we decide to open up the cap and remove the residues or other parts of the IWCS. So we will definitely take that into consideration. We weigh whether or not to remove it or shore it up

somehow in place, make it more protected in place.

MS. MICHELLE RHODES: I've seen it work quite well in the fact that we're, you know, obviously collecting more RI data so you may say, well, why have they started the Feasibility Study, they're not done with the RI yet. The first three tech memos are irrelevant to whatever data we collect as far as the RI Addendum. You know, the radon assessment is what it is. The dose is what it is. It's more dependent upon the actual waste material inside the cell than it is any kind of collection around it.

MS. ARLEEN KREUSCH: Do you have a follow-up question?

MS. BONNIE GUCKIN: Just one other question. It's not always cynical. I'm not always -- if you did find, let's say you got a lot more scientific knowledge than I have, but let's say you do find for us to open this up would be more of a hazard to our small community than to leave it, would you possibly leave what's there there? I mean, has that ever happened? Obviously you've all worked on sites like these before, I'm assuming.

Has it been more of a benefit to the community to leave something like this alone than

to open it up?

MS. MICHELLE RHODES: I think that's where community acceptance comes in as well. One good thing about, in looking at this is, it is going to release radon when it's open. It is going to have a dose associated with it. But we do what's called institutional controls.

When Fernold took their waste out, they developed a -- they had it actually stored in an above ground silo. They created a structure around it and they actually removed it robotically, and they had a radon abatement system. So you can engineer around this.

You know, it doesn't mean that if it's going to release radon we're just leaving it there. It's an engineering problem. You just have to figure out in the design how you will address the risk associated with both the dose component and the radon.

MS. BONNIE GUCKIN: Thank you.

MS. ARLEEN KREUSCH: Additional questions. Nona.

MS. NONA McQUAY: I'd just like to make a comment that those of us who have followed this for some 30 years are not really just concerned

about our small community, which is a small community, but we are poised on the end of New York State and our effluents affect the Great Lakes basin, which has millions and millions of people and a fifth of the world's drinking water. So it's not a small issue as to where these wastes go and whether they stay. They need to go away from such a large risk area. Thank you.

MS. ARLEEN KREUSCH: Thank you. Additional questions or comments? Bill. Would you state your name just for the --

MR. BILL CHOBOY: Bill Choboy, RAD member. I live in Youngstown. I'd just like to say thank you to the Corps for listening to our questions and answering graciously. I think you did a pretty good job. Ann has worked for years along with others on researching what's there and it hasn't been easy. She drove in here from Wisconsin to appear here tonight and the people in this community have been interested for a long time obviously in what we have here and we want to see it taken care of.

And again, I appreciate the answers that were given by a number of people tonight, but I don't like being lectured to as Mr. Papuda did. And I

don't think it's necessary. We have concerns and we've spent a lot of time and effort trying to research and work with the Corps of Engineers. We have a problem and we want to see it taken care of and we don't appreciate being lectured to. And it's not the first time it's happened.

MS. ARLEEN KREUSCH: Thank you. Any additional questions or comments? We do have comment cards in the back also if anyone wants to just put a question down on a comment card. There's a basket back there you can put them in and we will either write you a letter in response to your questions or comments or we will put the answer up on the website. And if there -- I'm going to kind of do a going, going, gone.

Is there anybody else that has anything else that they would like to comment or question on tonight for this evening on this site? Okay.

Well, thank you very much for coming. Remember that there's copies of the presentation, copies of the DVDs of the last meeting in March and the handouts are still all available. Thank you.

(Meeting concluded.)

CERTIFICATE

I, RHETT L. BAKER, certify that the foregoing transcript of proceedings in the matter of US Army Corps of Engineers, Re: Niagara Falls Storage Site (NFSS) FUSRAP Public Workshop. Was recorded on a SONY 146 Confer Corder, and transcribed from same machine, and is a true and accurate record of the proceedings herein.

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