

**Meeting of the Northwest Interstate Compact on
Low-Level Radioactive Waste Management**

June 21, 2016

Radisson Hotel
SeaTac, Washington

Present

Mike Garner, Chair/Executive Director
Marlena Brewer, Alaska
Jeffrey Eckerd, Hawaii
Robert Bullock, Idaho
Roy Kemp, Montana
Ken Niles, Oregon
Rusty Lundberg, Utah
Luke Esch, Wyoming
Kathryn McLeod, Compact Counsel
Lois Dahmen, Compact Staff
Dave Jansen, Washington Department of Health
Earl Fordham, Washington Department of Health
Cheri Kennedy, Washington Department of Health
Ron Skinnerland, Washington Department of Ecology

Audience

Dan Shrum, EnergySolutions
Mike Ault, US Ecology
Curt Cannon, Perma-Fix Northwest
Barry Bede of Bede Environmental Consulting
Kimberly Connolly, Department of Defense, Executive Agency, Low-Level Radioactive Waste

Opening

Mr. Mike Garner, Compact Chair and Executive Director, convened the meeting at 9:02 am.

Mr. Garner stated Kathryn McLeod from the Washington State Attorney General's office was attending the meeting in place of Kristen Mitchell.

The committee unanimously approved the minutes from its June 2015 meeting held in Salt Lake City, Utah.

Party State Reports

Hawaii

Mr. Jeff Eckerd reported that Hawaii took advantage of the Conference of Radiation Control Program Director's (CRCPD) Source Collection and Threat Reduction (SCATR) program and dispositioned the remaining disused sources in the state.

Alaska

Ms. Marty Brewer reported that she was contacted by the Alaska Department of Health and Social Services, Emergency Program to develop a Radiological Response Plan with a public health perspective. Ms. Brewer has been in contact with other non-agreement states regarding their plans.

Idaho

Mr. Bob Bullock reported that in February of 2016 the Utah Associated Municipal Power Systems (UAMPS) entered into an agreement with the Department of Energy's Idaho National Laboratory to construct a small modular nuclear power generating facility. UAMPS teamed up with NuScale and Energy Northwest for the development of the modular reactor.

The state of Idaho experienced a miscommunication with Stanford Nuclear Accelerator Laboratory, a customer of US Ecology Idaho. The laboratory stated they were shipping LLRW to the Idaho facility, which was not the case. The state of Idaho is working with US Ecology to improve communications.

Montana

Mr. Roy Kemp reported he will be retiring after this meeting. Montana is approaching their biennial legislative session and there is no legislation pending relevant to the compact's topics of interest.

Oregon

Mr. Ken Niles reported, due to NuScale being a Corvallis Oregon based company, there has been increased interest in developing more nuclear power facilities in Oregon. This is unlikely to happen due to a 1980 initiative that prohibits the development of any nuclear power facilities in Oregon unless: 1) there is an operating federal HLW facility, and 2) the public has voted on any new proposal.

Wyoming

Mr. Luke Esch reported that last year (2015) legislation was passed allowing Wyoming to pursue NRC Agreement State status. Late last year the governor sent a letter to the NRC to begin the Agreement State process. During the 2016 session, statutes were passed that allowed the rules to be established. Currently, Wyoming is in the process of developing the rules, which will include approximately 10 chapters. It is estimated that the rules will be approved in first quarter 2017, with final NRC approval in third quarter 2018.

Wyoming lost a lot of uranium industry jobs; there is interest in siting a uranium processing facility that could take over when the Metropolis Facility (in Illinois) retires.

Utah

Mr. Rusty Lundberg reported that there is an ongoing potential for a nuclear power plant in central Utah, near Green River, Utah, though an early site permit application has not been prepared and submitted to the NRC. The court case to resolve the water rights was resolved through the Utah Court of Appeals in favor of the potential nuclear power site developers.

Washington

Mr. Mike Garner stated that later in the meeting he would give a report on national and regional issues and a report on other potential issues after to be aware of after he retires. Mr. Garner has been working with Dave Jansen and Earl Fordham of Washington State, Department of Health, Office of Radiation Protection on the transfer of the Northwest Interstate Compact responsibilities from Department of Ecology to the Department of Health, Office of Radiation Protection.

US Ecology Activities Overview

Mr. Mike Ault, General Manager of US Ecology Richland, stated US Ecology is a publically traded company listed on the NASDAQ under ECOL. The Richland site is the company's only low-level radioactive waste (LLRW) site. The majority of the company's holdings are in the hazardous waste treatment and disposal areas. US Ecology just completed a buy-out of EQ, and is now a North American company with hazardous waste disposal sites in Quebec, Michigan, Texas, Idaho, and Nevada and the LLRW site in Richland Washington. The remaining company facilities are hazardous waste treatment and collection centers. US Ecology has increased collection of hazardous waste from retail stores, including Walmart.

The Richland LLRW site was first licensed in 1965 and is a NWIC disposal facility. The site is located on 100 acres of leased land within the Department of Energy's Hanford Reservation. US Ecology leases the land from the Washington State Department of Ecology, and the Washington State Department of Ecology leases the land from the Department of Energy (DOE). Upon expiration of the lease in 2063, the land will revert back to the DOE.

The US Ecology site is situated in the middle of the Hanford Reservation's Central Plateau. The Department of Energy has four disposal sites within a 3 mile radius of the US Ecology LLRW site, including the Environmental Restoration Disposal Facility (ERDF). The ERDF is a bulk disposal facility that contains DOE reactor waste. The ERDF is located on the original 900 acres that the state leased from the DOE, then returned unused in 1993. The DOE has an area surrounding their disposal facilities that will be industrially control by DOE in perpetuity.

The disposal trenches at US Ecology are approximately 45 feet deep, groundwater is at about 300 feet, and the Columbia River is about 15 miles away. US Ecology currently has two active trenches, Trench 18 for unstable waste, and Trench 19 for stable waste. The Trojan Reactor Vessel is disposed at the site in its own trench, Trench 12. The Trojan reactor was made up of 90% Co-60, and when the reactor was originally received 15 years ago, it accounted for half of the activity of the site.

The facility accepts typical stable and unstable low-level radioactive waste. A small portion of the stable waste is encapsulated sources, the majority of the stable waste is disposed in engineered concrete barriers (ECB). The facility accepts Class A, B, and C waste.

The site accepts a small amount of NARM waste from around the country. The NARM waste is primarily oil field and natural gas waste. Since some of these companies have been disposing of NARM waste at the US Ecology site for a long period of time, they have decided to keep their liability with US Ecology and continue to dispose there even though there are less expensive disposal options available.

The site is still engaged in a Model Toxics Control Act (MTCA) investigation. Prior to 1985 RCRA did not exist, so the waste that is now identified as mixed waste was considered just LLW prior to 1985. The goal of the MTCA investigation is to evaluate the environmental impacts from the hazardous waste that was disposed prior to 1985. In 1999 the facility abandoned the acceptance of sorbed liquids, and started requiring solidification and stabilization of waste.

DOE has contributed numerous contaminants into the groundwater. The US Ecology MTCA investigation needs to differentiate between US Ecology contributed contaminants and DOE contributed contaminants. The US Ecology Boise office staff, due to their hazardous waste knowledge, is the primary communicator with the Department of Ecology regarding the MTCA investigation.

US Ecology is working with the Department of Energy and Department of Health to move ½ million yd³ of soil from the DOE's ERDF site to assist with the final closure of the US Ecology site. Legal hurdles must be resolved prior to moving the soil.

The waste site does not receive a large volume of waste annually and should easily be able to accommodate NWIC generated waste until the site closes in 2056. The majority of the compact states dispose of very little waste, except for the nuclear power plant in Washington. The site is accepting about 20,000 - 30,000 ft³/yr of waste.

The Washington state nuclear power plant, Energy Northwest, completed their spent fuel pool cleanout and generated six TN Ram Casks with an average dose rate of 10,000 R/package. The site was able to manage the entire campaign at under 100 person mRem.

Committee Questions

Question: Do you intend on creating additional trenches during the lifespan of the facility?

Answer: Mr. Mike Ault stated Trench 18 (unstable waste) should last for another 2 - 4 years. US Ecology has locations already determined for the next 2 unstable trenches. Trench 19 (stable waste), is a dig as you go trench and should be capable of handling all of the stable waste for the life of the facility.

Question: Regarding Trench 12, what level of confidence do you have of the boundaries on either side of the trench?

Answer: Mr. Mike Ault stated they lack confidence on the boundaries of Trench 7 and the earlier trenches. Post Trench 7 they had surveyors mark the corners, so they know exactly where those trenches are. Historically, they did not track the disposal location of individual unstable waste packages. Since 2005 they track the location of unstable waste packages in a 50 x 50 x 10 grid.

They know, within a foot, where the Trojan Reactor is and where the boundaries of the trench are.

Audience Questions

Question: Would it be possible to get state specific disposal volumes?

Answer: Mr. Mike Ault stated yes, US Ecology reports this every month.

Question: Have the volumes in the last 5 years impacted the revenue requirement or personnel requirement at the site?

Answer: Mr. Mike Ault stated the revenue requirement is reviewed every 6 years and it has increased annually based on projects. There is a \$5.4 million requirement this year. All the fees are based on this revenue requirement. As volume goes down, the cost per cube foot increases. This increase is not per category. If they fall short on the dose rate category it is added to the next year's total revenue requirement and it is spread across all of the categories. If the site goes over in volume and under in dose rate, the site will refund the volume as an over expenditure, though the under collected exposure is added to the next year's requirement.

Question: If the site begins closure in 2056, there is a two year gap until the 5 year post closure observation period begins, with final closure occurring at 2063.

Answer: Mr. Mike Ault state the two extra years following site closure are for cover placement.

Utah Activities Overview

Mr. Rusty Lundberg reported on Utah's legislative changes. Utah has an annual legislature. The legislature approved consolidation of the Radiation Control Agency (Division of Radiation Control) with the Division of Solid and Hazardous Waste. A bill to move the X-Ray Department to the State Health Department did not happen, so the X-Ray Department is still housed in the Radiation Control Agency.

The Department of Environmental Quality had 5 gubernatorial boards appointed to serve, essentially, 4-year terms. These boards have authority to do rulemaking. The state agency does not have the authority to perform rule making, thus relies on the boards to do this. The boards associated with the Division of Radiation Control and the Division of Solid and Hazardous Waste were also consolidated. Previously the board had 13 members, one of which was always the executive director of the department. The consolidated board now has 11 positions, excluding the position held by the executive director, to be represented by specifically designated professional and industry sectors with 4 positions on the board to be represented by someone with radiation program familiarity. The main issue the board is working on is rule making. The department is working to keep their website updated to remain transparent and available.

Last fall the department launched a rebranding effort, including a new logo. This was quite an effort and included engaging stakeholders and the use of focus groups. It appears the changes have been well received both internally and externally. The department has an internal website to keep employees updated on the rebranding effort. Increasing public outreach is continuing.

During the July 2015 IMPEP review the NRC identified that recent changes to Utah's law addressing LLRW financial assurance was not fully compatible with the NRC's financial surety requirements for LLRW disposal facilities. During the past legislative session a bill was proposed that would help address the incompatibility identified by the NRC. There was a concern with the proposed bill language addressing facilities and structures outside of licensed area. The Clive facility's administration buildings extend beyond the licensed area. The state asked the NRC for clarification in regards to the unlicensed areas, and received the clarification towards the end of legislative session. The bill will be submitted for next year's session.

Utah has a statutory requirement that relates to financial assurance for commercial waste management facilities. Back in the early 2000's the legislature deemed it was important to periodically review the adequacy of all financial assurances in the state for disposal, treatment, and storage, from all commercial sites in the state (hazardous and radioactive commercial sites). The combined inaugural report reviewing the financial adequacy of all commercial waste management facilities was issued in 2006. The statute requires a 5-year update to the initial review. The department hired a consultant to perform the 5-year update review and submitted the report to the legislature in 2011. The next update is due by October 1 of 2016. The department would like to take the draft report to the board in July to provide an overview, take action on the report in August, then submit the report to the legislature by October 1. The review looked at the adequacy of both current and long term financial assurance. The consultants recommended assessing the long standing funding for the hazardous facilities; RCRA requires 30 years post closure, compared to the LLRW requirement of 100 years of PC&M, plus the state of Utah has instituted requirements beyond the 100 year institutional care period. The consultant also noted that the Clive site is wholly owned and operated as a private entity.

Clive Site Activities

The LLW area (Class A waste) has two separate embankments. The facility received a license amendment to allow the consolidation of the two cells. The facility is nearing the time to begin construction of the combined cell. Other important activities include evaluating a new cover design, changing from a rock armor cover to an ET cover. The LLRW license renewal application also includes an amendment to dispose of sealed sources. The regulatory agency is devoting time to site oversight and independently verifying the classification of containerized waste shipments that are near the Class A limits. The facility and the agency are working on site wide ground water permit amendments.

The department continues to work on the renewal application for the 11.e.2 byproduct disposal area. Also, a new rule change last year requires, under the provisions of the Atomic Energy Act, that there must be procedures for additional types of public participation, including "an opportunity for cross examination" (as stated in the Atomic Energy Act).

The MW area is ready for renewal, though the process is being held up by an EPA issue regarding the macro-encapsulation process occurring in the actual disposal embankment. The EPA has issue with that kind of activity within the embankment itself. This is a concern for the hazardous waste side of MW, not the radiological side.

Questions

Questions: The depleted uranium performance assessment does not appear to be as urgent, why is that?

Answer: Mr. Rusty Lundberg stated that was due to a combination of things including ongoing work on other important licensing actions. The state issued a draft safety evaluation report and requested additional information, Clive responded, and the state has reviewed the additional information. The state is using a Utah contractor for this work.

Question: Do you have a term-limited legislature?

Answer: Mr. Rusty Lundberg stated no, though there seems to be more turnover than in previous years.

US Ecology Model Toxics Control Act Update

Mr. Ron Skinnarland of the Washington State Department of Ecology reported on the status of the US Ecology MTCA investigation. Mr. Ron Skinnarland provided a MTCA update for the compact two years ago, and provide a more extensive presentation three years ago. This presentation would not go into detail on what the remedial investigation found or the draft of the feasibility study, but instead focus on where they are today. Currently they are trying to make a decision while incorporating the very interested stake holders from the Hanford side and the management from the US Ecology side. In particular, the Yakima Nation is actively involved. They sued the state a few years ago when the state attempted to put an interim cover on the closed trenches. Heart of America, an environmental group, was also involved in the lawsuit to stop the placement of the cover. There is a budget proviso tied to the funding associated with the expenditure for this work. The MTCA investigation goal is to restore the site to the state of having no requirements to do anything in the future.

In the 1990s the Hanford underground storage tanks leaked millions of gallons of waste. Ground water pump and treat is being used to treat the Hanford generated liquid contamination. This is the most effective remedy to protect the ground water and the Columbia River. Based on the MTCA investigation the mindset is shifting from restoring the US Ecology site without any remediation actions, to what remediation actions will need to be taken. The Hanford central core cleanup is almost complete, with active cleanup occurring in the Central Plateau. This cleanup will continue since this is where the underground storage tank waste is located. The long-term waste management options are operating a waste treatment plant that will turn high level waste (55 million gallons of high level tank waste) into glass over next 50 years. The hope is to start this process in 2022.

US Ecology is the contractor managing the LLRW site. The US Ecology parent company has been managing this site since 1965. The Department of Health is the regulator of the site, performing inspecting and licensing duties. The Department of Ecology is the LLRW site landlord, and oversees the associated funds. The Department of Ecology is currently in the process of transferring these responsibilities back to the Department of Health.

The state clean up law, MTCA, was passed in approximately 1989. The MTCA provides state wide chemical limits for chemical clean-ups, corrective actions, and closure of RCRA treatment,

storage, and disposal facilities. The EPA uses similar standards for their CERCLA sites, including Hanford. This is why it was decided to do a MTCA investigation at the US Ecology site. The goal is to make protective decisions at the US Ecology site.

Disposal and packaging practices became more protective over time. In the early years, liquids were allowed at the disposal site which resulted in the release of contaminants and an impact to the soil. The soils between some of the trenches and the groundwater have vapors, and chemical contamination has been identified in the groundwater. In the 1990s the site was listed on the states hazardous waste list. Waste disposal practices have evolved over time, and are much more protective now. The MTCA investigation has three decision units: the resin tank area (due to snow melt spreading contamination), the pre-1985 trenches, and the groundwater.

In the beginning of 2000s the Department of Ecology worked with the stake holders and the tribes to developed Data Quality Objectives and a sampling plan. US Ecology hired a contractor to perform the investigation which included borehole soil sampling, 8 quarters of groundwater sampling, and soil vapor sampling to about 90 feet under trenches. Since they were only able to get soil vapor to 90 feet below trench, and ground water is at 300 feet, there is a data gap. The soil samples were collected from 2008 to 2009, and the groundwater and vapor sampling concluded in 2012. The intent is to now get more characterization samples, particularly vapor samples, and continuously monitor the groundwater.

Results of the MTCA investigation show high levels of trichloroethylene (TCE) and chloroform in the soil vapor, along with the presence of other contaminants. The vapors appear to be coming from the trenches. There was an exhaustive review of disposal records for the pre-1985 trenches, though there was not a lot of details on the chemicals disposed since these were not regulated at the time. The state was able to do a very conservative radiological estimate.

Ground water plume maps were developed from the MTCA investigation data. Chemical contaminants were found in two wells, MW3 and MW5. The groundwater flow at the site is fairly flat. Ground water plumes from past Hanford releases are present in the Central Plateau. There is a chrome plume at the US Ecology site that requires additional characterization to determine if it originates offsite (DOE) then travels under the site, or if it originates from the US Ecology site trenches. The Department of Ecology is working with the DOE to install additional wells up gradient of the US Ecology site to better characterize the chrome plume. TCE was found in the groundwater in wells MW3 and MW5. The results in MW5 seem to be trending upward slightly, MW3 appears steady, though fluctuates up and down. Contaminant concentrations are several times above drinking water standards and pump and treat may be a feasible option.

In 2004 the Departments of Health and Ecology jointly issued an Environmental Impact Statement (EIS) for the US Ecology site. Based on the EIS there was a desire to take an interim action that was thought to be protective prior to the site being fully characterized. The desired interim action was the installation of an interim cover over the closed trenches to reduce water infiltration. The state was sued by both the Yakima Nation and Heart of America due to concerns that the state would stop characterizing the site if an interim cover were installed. The Yakima

Nation would like Department of Ecology to explore removal of the waste. The state agreed to stop further action until there is a MTCA cleanup decision for the site.

The urgency for installing the interim cover was based on the radiological modelling. After an outside review of the modelling it was determined to be extremely conservative, negating the urgency for installing the interim cover on the site. The Department of Ecology is trying to hire a consultant to assess if the MTCA investigation is complete, there are concerns that data gaps exist regarding the nature and extent of contaminants under the trenches. The consultants felt the radiological modelling was conservative, and since the US Ecology site is on the Hanford Reservation the site will not be available for public use for a very long time. Since there is not the same urgency for an interim action, the state agreed to defer installation of the cover pending further MTCA investigation of the site. Several million dollars have been spent, and over 10 years of site investigation performed, the state need to come up with some kind of decision because currently nothing protective is happening at the site. There is waste in the trenches and some has been released to the environment; this won't get better until some type of positive action is taken. There is strong stakeholder interest so the state wants to make sure there is an acceptable action.

The plan is for the Department of Ecology to work with the Department of Health and the Yakima Nation to get a contractor on board to better define the data gaps and address the tribes concerns regarding contamination in the trenches. The Yakima Nation would like to see the contents of the trenches investigated. The state feels that is risky to workers and not sure if there is a practical way to dig up parts of the trench. The state would like to know if there are any hot spots within the trenches for potential spot remediation. The consultant will be helping with this, updating the modelling, as well as including chemicals into the modelling, and developing alternatives for the next step in the investigation. The state must develop a budget and request funding from the legislature.

Questions

Question: Regarding the proportionality of responsibility from US Ecology versus the DOE, can you definitively say the contamination originated from the US Ecology site?

Answer: Mr. Ron Skinnarland stated that the Department of Ecology is working with the EPA, DOE, US Ecology, and the contractor to characterize the chrome plume. The desire is to increase the number of up gradient wells and determine who pays what share, to see what is originating from the US Ecology site. The reality for the public and the environment is you want to determine the nature and extent of the plume and what can be done about it. The TCE and chloroform are coming from the US Ecology site. Hanford does have a chrome plume, and has a large pump and treat operation in the northern part of Central Plateau that extends to the west where there is a uranium plume. The first step is to increase the characterization with DOE and EPA. Pump and treat or vapor extraction may be remedies.

Question: The DOE has designated the area surrounding the US Ecology site as an industrial area that will be under DOE oversight for a number of years to come. Does that influence the preferred remedy that will eventually be selected from the MTCA investigation for the US Ecology site? Does this give the state more leniency in choosing the remedy, since the site will not be in close proximity to the public?

Answer: Mr. Ron Skinnarland stated the US Ecology site will be part of DOE's long term waste management area due to the extent of the DOE contaminants in the area. This area will require ongoing active remedies. It is an option in the decision making process to consider this. The Yakima Nation understands this area may not be cleaned up first pass, though they would like, at some time, that the entire Central Plateau be returned to its native state. Looking at the decision making for the US Ecology site and Hanford, it would great if the site could be cleaned up to a No Further Action status. In this case, releases have already occurred and people at the surface won't be able to use the groundwater without restrictions put in place. The question is will there be active ongoing remediation.

Question: It sounds like the location of the US Ecology site within the Hanford active remedy area allows latitude in the US Ecology preferred remedy. It sounds like it will play a role in the decision making process, though the extent it will play a role is yet to be determined.

Answer: Mr. Ron Skinnarland stated yes, and given the litigation, there haven't been any covers installed on any Hanford trenches. Industrial activities are in the land use plans for the area, though residential use will also be evaluated.

Answer: Mr. Dave Jansen stated conversation are continuing with the parties that are concerned about the US Ecology site and concerned parties will be update as progress is made in those areas.

Question: Do you have a proposed date for completing the MTCA process and issuing a decision?

Answer: Mr. Ron Skinnarland stated the goal is defining what the next steps are. The clean-up investigation is taking a long time. The Department of Ecology wants to make some tangible progress and make some type of decision. The next step is to have a consultant review and determine how to fill the data gaps and to gain more information on the nature and extend of the releases prior to recommending what to do. Currently, the MTCA investigation has capital project funding. The policy and budget people would like this phase completed, then submit a new budget request either this session or the following session. Within the next two years the Department of Ecology wants to know what is going to be done next at the site. In the meantime, the Department of Ecology is working with the DOE and EPA on defining the groundwater contamination. The consultant will tell the state more about how to investigate the vapors and releases from the trenches. The long term goal is that in a few more years the Department of Ecology will have a final decision.

Question: Does the location of the site in the DOE industrial area allow any latitude for the criteria of the cover?

Answer: Mr. Earl Fordham stated the only part of the cover that has been in regulatory review prior to the lawsuit was Phase I. Phase I was basically a soils layer, with a HDPE layer, then more soil. There were no restrictions on the placement of the Phase I cover. The intent was placing an ET cover over Phase I. The state has not completed the review on how the location of the US Ecology site in the DOE industrial area impacts that part of the cover design.

Answer: Mr. Dave Jansen stated because the ultimate goal is to turn this facility over to the DOE for incorporation into the 200 Area, the performance standards for this facility will be consistent with those of the 200 Area.

Question: Being an agreement state there are strict closure requirements at the fence line. The NRC standard is very specific at the fence line. The site will need to meet this, regardless of the rest of the 200 Area closure standard. Is that correct?

Answer: Mr. Dave Jansen stated I believe so. The rest of the 200 Area is subject to CERCLA closure standards, where the US Ecology site is subject to NRC closure standards. The state has had numerous discussions with the EPA and NRC over this topic. The EPA and NRC look at the closure standards in different ways, equating the standards is challenging, though from an engineering perspective the requirements are pretty consistent. From a state perspective it hardly makes sense to have major disparities in performance or standards at the end of the day.

Region and National Issues

Mr. Mike Garner received an import (IW017)/ export (XW010) license amendment request from EnergySolutions. The purpose of the amendment was to extend the two licenses' expiration dates to 2020, and add two new consignees in TN that can accept LLRW for processing: ERWIN Resin Solutions LLC, and EnergySolutions Services, Inc. in Memphis. The two new consignees that can process waste in TN can process waste coming from Canada. The name of the Canadian facility shipping LLRW changed to EnergySolutions Canada. The amendment removed the restriction that only allowed Class A waste, since all LLRW after processing will be returned to EnergySolutions Canada. The amendment clarified one reference in their application as there is an agreement with EnergySolutions on what is considered to be the processor's residual LLRW and is therefore eligible for disposal at the Clive facility. In their application it stated "in accordance with EnergySolutions TN's Radioactive Materials License, waste that is considered to be attributable to EnergySolutions under the attribution model approved by TN, is also considered by the TN Division of Radiological Health, to be residual waste, or secondary waste, generated by EnergySolutions and not its suppliers". That is important because in about 2006/2007 the state of TN approved an amendment to the Duratek Bear Creek facility's Radioactive Materials License that allowed them to claim all of the primary hearth ash that is generated by incineration, as their own waste. The NWIC worked with the Southeast Compact because we were not in agreement with this. We then came to an agreement with EnergySolutions who accepted the fact that Duratek would ship all of the primary hearth ash back to the country from which it was received. We also detailed what was considered to be residual LLRW that can be claimed as the Bear Creek facility's waste and therefore is eligible for disposal at the Clive, Utah site. Mr. Mike Garner stated that we have no issue with the proposed amendment provided the following requirements are followed and the attached agreement is used to determine residual LLRW from EnergySolutions' incineration process. A copy of the agreement was also provided to the NRC. All primary hearth ash resulting from incineration is returned to EnergySolutions Canada. The primary hearth ash is not eligible for disposal at the Clive, Utah facility. All containers used by EnergySolutions Canada that are not reused or recycled are returned to EnergySolutions Canada, and the LLRW generated by the two consignees of EnergySolutions, as a result of processing Canadian LLRW, are not eligible for disposal at the Clive, Utah site.

Mr. Mike Garner received a second import (IW033)/ export (XW022) license amendment request from Perma-Fix Northwest (PFNW). The request was for the importation of radium luminized dials from Active Collection Bureau Limited in the United Kingdom. The dials have 2.5 curies of activity. PFWN will thermally treat the dials then shred and grout the non-

combustibles to provide a homogenous waste matrix that will then be returned to the United Kingdom. The NWIC had no issues with the request, and stated any containers that are used to ship to PFNW that are not reused or recycled are returned to the United Kingdom and none of the LLRW following processing is eligible for disposal at the Richland WA or Clive UT disposal sites.

Mr. Rusty Lundberg (Utah), Mr. Dan Shrum (EnergySolutions), and Mr. Mike Garner were requested to participate on two panels, briefing the NRC Commissioners on the Part 61 rule making. Representatives from the NRC also participated on these panels, as well as Louisiana Enrichment Services, EnergySolution of Utah, the Nuclear Energy Institute, Waste Control Specialists, Texas Commission on Environmental Quality, the state of UT and the NWIC. One of the primary points made was that the new regulations could be implemented in a much more equitable way for sited states than how they are currently proposed. The new regulations apply to all sites, whether a site has any intentions of taking large volumes of depleted uranium or not. Mr. Lundberg, Mr. Shrum, and Mr. Garner recommended that these new regulations be separated, so, if a site is going to potentially benefit from taking large volumes of depleted uranium for disposal then they would be subject to implementing these new regulations and the costs associated with implementing these new regulations. Their argument was why should those facilities that have no intentions of taking large volumes of depleted uranium or other long lived radionuclides, at this point in time, be subject to these costly new regulations when they will incur no economic benefit. Another point made was the NRC is going to incorporate regulations in Part 61 for greater than Class C waste. There is concern with the unilateral implementation of these greater than Class C regulations since they involve a waste stream that isn't a state or compact responsibility, it is a Department of Energy responsibility. Mr. Garner has no issue with commercial sites wanting to accept this waste, it is more a concern regarding the cost to implement these regulations. The way it was proposed, NRC felt it would cost each site \$400 – \$450k to implement these new regulatory requirements. As these parties examined these estimates they were deemed to be low, estimating the actual costs would probably be twice that high. So, why should the Richland site incur this cost in which the primary purpose is to develop regulations for unanticipated waste streams such as large volumes of depleted uranium or greater than Class C waste? They pushed for the regulations to be separate and one of the reasons was because the NRC said the Part 61 regulations in place now are fine the way they are and ensure disposal facilities are safe. The other major point that was made by Mr. Lundberg, due to their situation in Utah where they have a prohibition on disposal of Class B and C waste, was that the proper classification for depleted uranium needs to be identified sooner rather than later. Mr. Garner believes the intent was to complete the rule making, then look at the proper classification for depleted uranium. The NRC argument was that once the rule making is completed there may not be a need to look at the proper classification for depleted uranium because the site specific performance assessment would indicate whether the site was capable of taking this material or not. However, doing it in that manner does not meet the needs of the state of Utah. Mr. Lundberg, Mr. Garner, and Mr. Shrum indicated they would like it done sooner rather than later.

Mr. Rust Lundberg (Utah), Ms. Susan Jenkins (South Carolina) and Mr. Mike Garner all felt it was important to reinforce their concerns with the NRC commissioners, so they went back to the NRC on December 1 and had a series of meeting on December 2nd. They had a one hour courtesy meeting, with 6-8 NRC program managers where they went over their concerns, how those

concerns could be addressed, and they emphasized this does not impact NRC's ability to incorporate these new regulations concerning unanticipated waste streams such as large volumes of depleted uranium. Then they had a one hour meeting with Commissioners Svinicki and Ostendorff. The Commissioners were very prepared for the meeting and very engaged. Mr. Mike Garner provided the group a paper "Meetings between sited sites and NRC commissioners". During these meetings, the Commissioners were given a notebook of materials containing an overview of the concerns of the three sited sites and comments from various parties expressing similar concerns. At the end of the meeting with the Commissioners, Mr. Garner asked why the NRC was so insistent on implementing these new regulations universally, where, if implemented separately they could still accomplish everything the NRC set out to do? The Commissioners acknowledged the quality of the question. Then they had a half hour meeting with Commissioner Baran and Chairman Burns.

Some are advocating for alternate disposal of very low activity low level radioactive waste. It is still licensed material, and currently it would go to a Part 61 facility, but utilities, especially, are interested in having an alternate disposal option for this low activity waste. But, as pointed out to them, as you take away the waste that goes to a Part 61 facility, the costs rise for disposal of those wastes that still are required to go to a Part 61 facility. As the NRC pointed out to the utilities, there is already a process for exemption under 10 CFR 20.2002. If this came to fruition, and if disposal at other than a Part 61 site were provided it would have a cascading impact. It would increase the disposal fees for generators. US Ecology is provided with an annual revenue requirement. For example, if 20% of the waste qualified as this very low activity waste, then the costs would need to be increased by 20% to achieve that annual revenue requirement. There would also be a loss of revenue from the reduction of site use permits issued. This revenue is used to fund the NWIC staff, NWIC meetings, and the site use permit system. The percentage of those that currently pursue a site use permit annually would no longer have to do this. So, the revenue used to fund these activities is going to drop and the site use permit fee would have to be increased. The site use permit fee was last increased in 2003, though an increase will certainly come up for consideration in the next 3 or 4 years. Reductions in revenue for those areas funded by the cubic foot surcharge would likely require these fees to be increased. Since these Part 61 facilities are only receiving a portion of the waste that they have historically received, this may reduce the economic incentive for future site development.

On November 19, 2015 Rockwell Holdco Inc., the parent company of EnergySolutions, signed a definitive agreement to acquire Waste Control Specialist (WCS). The acquisition is on hold, under review by Department of Justice.

WCS has been authorized to dispose of large volumes of depleted uranium. The majority of depleted uranium would likely be disposed in the federal facility. Mr. Mike Garner thinks they have been authorized to dispose of 400,000 cubic meters (14 million cubic feet). Since the compact site is only authorized for acceptance of 9 million cubic feet, it seems a good portion of this depleted uranium waste will go to the federal facility. WCS is also seeking a license to accept greater than Class C waste. WCS wrote a letter to the NRC inquiring what the authority of Texas was to license such a facility. The NRC staff has recommended to Texas that the Texas Commission on Environment Quality be allowed to license the proposed greater than Class C facility at WCS, but stating that there would be significant NRC oversight of that activity.

On April 28, 2016 WCS submitted an application to the NRC to obtain a license for a consolidated spent fuel interim storage facility. WCS is partnering with AREVA and NAC International on this storage facility. WCS projects it will take three years to receive a license. Their design includes eight storage pads capable of storing 5,000 metric tons each for a total of 40,000 metric tons. The earliest anticipated operating date is 2021, and WCS is seeking a 40-year license for the interim storage facility. From April 27, 2012 to February 29, 2016 (an almost four year period) WCS received a total of 16,270 cubic feet of inter region LL waste with an activity of about 3,700 curies. WCS has received a volume of about 75,000 cubic feet of out-of-region LL waste with an activity of almost 269,000 curies. The total is 91,152 cubic feet with a little over 272,000 curies. The average annual receipt is about 23,000 cubic feet per year. Mr. Mike Garner would have anticipated a new disposal site where, prior to the opening of WCS, 36 states lacked disposal access for Class B and C LL waste, would have higher annual volumes. The Richland site receives about the same volume of waste as the WCS site.

Qal-Tek is an Idaho based company located near Idaho Falls. The owner of Qal-Tek died a year or two ago and his son is now the owner/operator. Mr. Mike Garner had an email conversation with the original owner stating that if he brings in sources from outside of the region those sources would not be eligible for disposal at the Richland site unless, once the sources were brought in, they were put to a practical use within a member state within the Northwest or Rocky Mountain Compacts. In July of 2015 Mr. Mike Garner received an email from the current Qal-Tek RSO to see what sources would and would not be eligible for disposal at the Richland site. At the LL Waste Forum meeting in April of 2016, Mr. Earl Fordham and Mr. Mike Garner met with Qal-Tek and reiterated the disposal statement. Qal-Tek asked if the compact had any rules that would reinforce this stance. There are two Washington Administrative Code (WAC) regulations that address this. When the WAC was in effect from the Department of Ecology it stated the generator is the last party to put the radioactive material to practical use. When the permit system regulations were moved to the Department of Health, the Health WAC wasn't as obvious as the previous Department of Ecology WAC. The NWIC Compact counsel feels this position is defensible under the Health WAC. Mr. Mike Garner told Qal-Tek that they could ship the out-of-compact sources to WCS in Texas for disposal.

Thermo Fisher contacted Bionomics Inc. to assist with the removal and disposition of numerous accumulated sources located in their Sugar Land Texas facility. Due to contamination concerns at the facility, the state of Texas instructed Bionomics not to open or repackage any of the waste packages. Bionomics informed Mr. Mike Garner that there were sources that appeared to be from the Northwest Compact, but these sources were comingled in packages with sources from other states and compacts. Bionomics asked if the NWIC had any issues with the NWIC sources being disposed as Thermo Fisher process sources at the WCS facility in Texas. There were 129 sources one of which came into the Thermo Fisher facility in 2012 from a Northwest Compact generator. All the other sources that were potentially from the Northwest Compact came to the site in 2008 or earlier. After discussing this with compact counsel a letter was written to the Texas Executive Director stating the NWIC had no issue with those sources that appeared to originate from the Northwest Compact being disposed as Thermo Fisher LLRW at the WCS facility in Texas.

The Texas Compact Commission reviews each import application and asks if this waste has access to another location for disposal. The Vice Chair of the Texas Compact Commission does

a technical review/recommendations of each application and provides this to the compact commission as a whole. He noted that the attribution of LLW is an issue they continually have to deal with. Attribution is an issue for all states/compacts that provide disposal access for LLW.

NRC issues possession licenses to the US Army for depleted uranium at multiple installations. In October of 2015 the NRC issued a possession license to the Army for depleted uranium at two sites in Hawaii. In March of 2016, the Army added 14-16 additional installations. The depleted uranium is from spotting rounds used to assist with targeting accuracy.

Mr. Mike Garner stated he was not involved with the US Ecology site sublease that was signed in July of 2005 by the Department of Ecology and US Ecology. But under the requirements of the 2005 sublease, US Ecology has available to it four 10 year extensions. US Ecology has to submit to the Department of Ecology, in writing, that they would like to exercise one of these extensions six months prior to the expiration of the current sublease. The extension of the sublease was completed and it is effective until July 29, 2025.

Questions

No questions.

Closing

Mr. Mike Garner thanked the attendees and adjourned the meeting.