

**NUCLEAR ADVISORY COUNCIL MEETING**  
**Gressette Building, Room # 207**  
**April 13, 2017**  
**1:00 – 4:00**

**Call to Order – Approval of Minutes** Karen Patterson

Attendees: Steve Byrne, Claude Cross, Carolyn Hudson, James Little, Karen Patterson, Vincent Van Brunt, and Tom Young

It was noted the January 12, 2017, 2016 minutes are approved.

Ms. Patterson: I am going to give you an update of the Advisory Council Activities and then Steve Byrne has agreed to summarize his meeting between SCANA and the Public Service Commission he had yesterday. Shelly Wilson and I are on the DOE Environmental Management Advisory Board together; we were at Oak Ridge last week. I have to share a story with you. My first year on the SRS Citizens Advisory Board (CAB) was in 1996, and then they told us it would take us forty (40) years for Environmental Management (EM) to finish its clean up. We are now twenty-one years into the clean-up. I do not remember how much money they said it would cost. What we heard last week is it is going to take sixty (60) plus years from now and hundreds of billions of dollars which is not feasible. My perspective is DOE has got to come up with another plan. They have got to think outside the box and come up with a better way to get this done because this will never ever get done the way they are progressing.

Mr. Byrne: Thank you. The issues around the Westinghouse bankruptcy and how they are impacting the V.C. Summer project were discussed in an ex parte briefing we had with the Public Service Commission yesterday. I don't have anything different or new to report out other than what we said during that briefing.

I will give you a brief history. Westinghouse is majority owned by Toshiba Corporation in Japan. It's about eighty-seven percent (87%) I think owned by Toshiba Corporation, about three percent (3%) by Japanese Company, IHI Corporation, and ten percent (10%) from Kazatomprom which is in Kazakhstan. Toshiba put Westinghouse into bankruptcy March 29 of this year. A little bit of history on Toshiba – it's a long-standing company formed in 1875; they have been around a long time. In 1987 they invented the NAND flash drive. If you have an iPhone or camera chances are their flash drives are in your iPhone or camera and that's really a big money maker for them. In 2006 they acquired Westinghouse for about \$5.4 billion (\$5.4B). At least in that majority stake it was about a 67% stake. Twenty percent (20%) of Westinghouse at the time was owned by the Shaw Group. The Shaw Group had a put option where they could put Westinghouse back to Toshiba and they did that in advance of a sale of the Shaw Group to the Chicago Bridge and Iron (CB&I). At that point Toshiba became an eighty-seven percent (87%) owner of Westinghouse. In 2015 Toshiba went through an accounting scandal, not necessarily associated with nuclear but an accounting scandal. Most of their Board was replaced, most of their senior leadership

was replaced, and they had many \$ billions in write downs. They looked to be recovering from that when this latest issue happened.

A little bit about our interactions with Westinghouse and Toshiba. As you are aware we signed an Engineering Procurement Construction contract or (EPC contract) with a consortium of Westinghouse and Shaw in 2008. Shaw exited that agreement and CB&I replaced them I think in 2012 or maybe 2013. In 2015 CB&I came to us along with Westinghouse and said they want out, which was good with us because they were not making good progress. Westinghouse wanted them out, so we used that opportunity to renegotiate our EPC contract. In that renegotiation we put in bigger liquidated damages, we allowed CB&I to exit, and we put in a fixed price option in EPC contract so that we could elect to complete the project under a fixed price. CB&I exited in January of 2016, Fluor assumed the lead EPC role and they took over the Craft HR function in about April 2016. That is about a year ago. In November of 2016 we took that fixed price option to the Public Service Commission, they approved the fixed price option.

Toshiba's issues stemmed from the agreement to allow CB&I to exit the project. This meant they had to acquire from CB&I a lot of the engineering services and they did that by buying Stone and Webster, a CB&I subsidiary. Stone and Webster, became a Westinghouse company. So our contract was still with Stone and Webster and Westinghouse. It is just that Stone and Webster was a solely owned subsidiary of Westinghouse Corporation. They closed on that deal December 31, 2015. You have twelve (12) months to account for the value of acquired good will. In December of 2016 it became obvious that the value of the Stone and Webster good will was hugely different from what they had reported and claimed. I think it was December 27, Westinghouse announced the good will instead of a couple of hundred million dollars was "many" billions of dollars without saying how many billions. What I have learned about the financial community is they can take good news, they can take bad news, but they don't like uncertainty. So that threw the project, in the financial community minds, into turmoil. The increased goodwill was later announced to be about \$6.3B so that means that's how much above and beyond the fixed price contract that they had invested with us and Southern Company.

Toshiba has some profitable businesses but they were losing a lot of money on Westinghouse's new nuclear construction project. They announced in January they planned to sell their most profitable company – the one manufacturing the flash drive memory disks. In February, 2017 Toshiba was scheduled to announce 2016 earnings; their auditors would not sign off on the earnings so they announced unaudited earnings. They said that on March 14, 2017 they should announce the audited earnings, they failed to do so. Then April 11, 2017, earlier this week, they announced their earnings but without their auditors' blessings, which is probably unfortunate. On March 29, 2017 Toshiba declared Westinghouse bankrupt.

Now a couple of key facts: Westinghouse will continue to work in bankruptcy; this is a Chapter 11 bankruptcy protection so they are allowed to continue to operate. They plan to financially protect their profitable businesses including their nuclear fuel businesses, a large part of which is on Bluff Road here in Columbia. Their services business makes money for them, their European, Middle Eastern, African

businesses make money for them so they want to separate those good businesses from the failing US nuclear construction and package that for sale. As we understand it there are potential buyers unknown to us. When Westinghouse went into the bankruptcy they had negotiated a pre-packaged agreement with us and Southern Company that will last about thirty days. This is called an interim assessment agreement. Both nuclear operators have agreed to fund Westinghouse obligations at both their sites. The agreement allows both nuclear companies access to Westinghouse proprietary information on construction costs, manpower, and all the things I have been asking for without success. The information is now forthcoming. We also got permission to have commercial discussions with Fluor and with Southern Company. Before that we were contractually forbidden to have those joint discussions. In the interim assessment period SCANA will do an evaluation as to the prudence of continuing with the project. We hope to make that decision fairly soon. We said publicly that thirty (30) days is a short time frame to do that and we would probably look to get an extension if Westinghouse is amenable to that. Westinghouse is not necessarily in control of their destiny. They have advisors now who will tell them what they can and cannot do. So me talking to the CEO of Westinghouse and him saying “yes” to something don’t necessarily mean that they are allowed to do that. They have to go back through their professional advisor and get permission. What we do know about costs is the impairment of \$6.3B specifically related to the USAP 1000 projects was boiling down to about \$5.1B. Of that \$1.8B was incurred at V.C. Summer as of the reporting date. Westinghouse later came back and said they have written off more, bringing our incurred costs down to about \$1.5B. We have a parental (Toshiba) guarantee which survives the EPC contract from Toshiba. That parental guarantee is a percentage of what we paid under the contract. So as of right now the parental guarantee is worth about \$1.7B. So the big picture, we’ve got about \$1.7B in guarantees and \$1.5B in cost overages; we could cover the cost with the parental guarantee. I would hasten to point out that those are Westinghouse numbers, we have not validated those. We are about validating those in the next thirty (30) days. Work is continuing. We have over 5,000 contract and sub-contract employees’ onsite working today.

Ms. Patterson: Steve, I appreciate that.

**Barnwell LLW Disposal Facility Update**, Susan Jenkins, DHEC, Manager, Radioactive Waste Management Section and Mike Benjamin, DHEC, General Manager, Disposal Operations, Energy Solutions Barnwell Complex

(Slides available here <http://admin.sc.gov/node/1543>)

*Question from Council:*

Ms. Patterson: (In the discussion of DHEC being given authority by NRC to regulate radioactive materials and the use of the Integrated Materials Performance Evaluation Program Reviews); is this review compatible with NRC or programs and what is it compatible with?

Ms. Jenkins: Mostly the regulations. A small part of it is with policies in a sense. We have had all satisfactory reviews since 1999 and we have received no formal recommendations from the NRC, so that is something we are proud of. Our next review just happens to be coming up next month.

Ms. Patterson: When we were looking at the inspection totals (on slide 10) you had over 200 and when WIPP dropped off you had less than 100; do you have a hard time holding on to your FTEs in the budgetary terms?

Ms. Jenkins: Our on-site inspector at the Barnwell facility, Kevin, is the one that does those, he is one that has had over twenty-eight (28) years of experience before he came to DHEC.

Ms. Patterson: Now a budget person looking at doing 200 inspections and now doing 70 they may say they don't need as many people; has anybody said that to you?

Ms. Jenkins: No not really. It is important for us to have an on-site inspector although there are not that many shipments coming in; but with the WIPP shipments we have grant money for that. DOE has provided a portion of the grant money we received before but it is money that helps with some of those salaries.

Ms. Patterson: My understanding is that DOT has national radioactive waste transport regulations do they not?

Ms. Jenkins: Yes.

Ms. Patterson: So how do the state, national regulations and your office integrate them, is it like the EPA and is it as rigorous or exceeding EPA regulations?

Ms. Jenkins: We don't have specific state regulations like DOT does. Our 6183 that I referred to is a very short regulation that mainly is for the permitting of the folks who are coming through the state. It just talks about us issuing permits and the fact they have to provide us prior notification before they come into our state with waste and so it really doesn't have details about dose limits and placarding. We rely on DOT for that. When we inspect the shipments that come into the site we look at them in terms of the DOT requirements but we also look at them in terms of the waste acceptance criteria at the facility. We don't have any overlap with DOT there.

Mr. Byrne: You talked a little bit about lost low level radioactive materials. What typically is something that someone loses?

Ms. Jenkins: Sometimes they are stolen. So before they are determined to have been stolen they are said to be lost. Those are typically industrial gauges that radiographers use, that type of thing, on radiography equipment, or sometimes gauges when someone is dismantling a building and they didn't

realize that thing hanging on the wall has radioactive material then someone realizes it is missing there are those types of things.

Dr. Van Brunt: Like Nickel-63 (Ni-63)?

Ms. Jenkins: It could be anything, whatever is in the source or gauge. I didn't really go into a lot of detail about it but we are an agreement state program. The radioactive state program is just a part of the agreement state program. We also have the Bureau of Radiological Health and they are the ones to license the gauges and all the radiographers and the hospitals that use radioactive sources in their medical practices. They operate under the same and are part of the agreement state program as well. So their licensees lose it and then we find it. Sometimes because we just receive a telephone call. Since we have on the environmental side of our agency folks calling in who typically call that number first. Sometimes we get involved and sometimes we pass it to their group and sometimes we end up going out to look for things and help figure out what's going on.

Ms. Patterson: I am glad you are here. Thank you. This is great.

**Barnwell LLW Disposal Facility Update**, Susan Jenkins, DHEC, Manager, Radioactive Waste Management Section and Mike Benjamin, DHEC, General Manager, Disposal Operations, Energy Solutions Barnwell Complex  
(Slides available here <http://admin.sc.gov/node/1543>)

*Question from Council:*

Mr. Byrne: You said all the utilities had selected option B. Did you cover what option A was?

Mr. Benjamin: Yes, option A is we look at the package size and total amount of radioactivity. It's a density based rate, we get that information and calculate a disposal rate or cost for the actual package.

Mr. Byrne: How many employees have you got at the site?

Mr. Benjamin: For the disposal portion we have thirty-seven (37) employees.

Mr. Byrne: Do you still operate seven administrative offices here in Columbia?

Mr. Benjamin: We have one (1) disposal employee in our Columbia office. Energy Solutions in Barnwell has about ninety-two (92) employees. We just downsized the Columbia office and we have forty (40) employees in the Columbia, SC office.

Mr. Byrne: Does Energy Solutions still operate out of Utah?

Mr. Benjamin: Yes.

Mr. Byrne: What is the status of the license?

Mr. Benjamin: It is still pending with the Supreme Court.

Dr. Van Brunt: The thing you mentioned was 14.3 million curies delivered. Do you know based on decay what it looks like now?

Mr. Benjamin: No sir, I do not.

Dr. Van Brunt: Is this something that would be nice to know?

Mr. Benjamin: Yes sir, it would be.

Dr. Van Brunt: Is there any reason why you don't keep track of it?

Mr. Benjamin: No we do track it. I just failed to put it in this presentation.

Dr. Van Brunt: So you do know it.

Mr. Benjamin: I just don't know it right now. Yes we do know.

Dr. Van Brunt: Ok. Thank you.

**DHEC Radioactive Waste Management Program Overview**, Susan Jenkins, DHEC, Manager, Radioactive Waste Management Section

(Slides available here <http://admin.sc.gov/node/1543>)

*Question from Council:*

Ms. Patterson: The annual trending report can change year to year, month to month and quarter to quarter.

Ms. Jenkins: Yes it can. You have your seasonal fluctuations too because if you have a lot of water or rain water entering the system then you are going to have some dilution where the concentrations may go down. The material is still there and it is traveling from the site to the creek. These numbers are what we have to understand what is going on and to rely on. The tritium levels are within the

compliance limit, the plume is well defined and it's not doing anything we would not expect it to. We always like to remind everyone there are no receptors of the water at the creek.

Dr. Van Brunt: Do you participate in any round-robins in terms of calibration of instrumentation say for tritium? In other words if the lab in Savannah River has a round-robin with ORNL and with a couple of other locations in terms of making sure everything is calibrated you are basically getting the same reading – just wondering if you participate with Savannah River with something like that in terms of a round-robin comparing your calibration.

Ms. Jenkins: Savannah River Site samples their affluent and water from the Savannah River and nearby. They have called us in the past to talk about some numbers they have seen.

Dr. Van Brunt: Like you take a known sample and you compare it with say another laboratory with another vendor.

Ms. Jenkins: What we do every quarter is collect DHEC split samples with Energy Solutions. They have their on-site lab and they provide all that data to us they are required to by the license and then we split some of those samples, not all because it would be very expensive, and send them to a third party vendor and get results back. Then a portion of those that we split we send to our DHEC lab. All of these labs are certified. So when we receive Chem-Nuclear's data and our data from our third party vendor and our DHEC data we do take a look at those to make sure the numbers aren't too far off. Obviously they are not going to be exactly the same.

Dr. Van Brunt: You have answered the question. The other question is about you looking at your trends versus a Port Wentworth. Have you ever looked at a Port Wentworth Laboratory trends and associated their trends on tritium versus your trends on tritium?

Ms. Jenkins: No we have not looked.

Ms. Patterson: As compared to Savannah River and the time it got to Port Wentworth would be Vogtle, Savannah River and Barnwell.

Dr. Van Brunt: Yes, but I would expect you to be able to evaluate it versus something down river and you say you don't do that.

Ms. Jenkins: Energy Solution samples off-site where the plume is and up to the compliance point which is what we have the authority to regulate.

Mr. Benjamin: The compliance point is the point that both Energy Solutions and DHEC lose control.

Ms. Patterson: DHEC samples down the river, don't you?

Ms. Jenkins: Yes

Dr. Van Brunt: Where do you sample down river?

Ms. Shelly Wilson: We actually have an environmental monitoring program all up and down the river in the vicinity of Savannah River Site and Barnwell and Vogtle. We are taking river and sediment samples really for a broad stretch both upstream and downstream. Every year we wrap all that up into a report that is certainly available and we invite everyone to look at it. So we do sample downriver as well. In addition there is a notification process especially for tritium if there is any indication in the river that tritium is approaching a number that might be out of compliance for users like Beaufort Jasper water/sewer authority. There is a notification process that kicks in quickly to notify them that something might be coming their way so they account for that to make sure their users are protected.

Dr. Van Brunt: Sure, when we had that tritium plume more than a few years ago it was Port Wentworth in Georgia that was the station that had the high levels and I was wondering whether there was still some comparison.

Ms. Wilson: I am not sure where Port Wentworth is. We do have that on our web site where you can see the different monitoring locations up and down the river.

Dr. Van Brunt: Thank you.

Senator Young: Thank you very much. Mr. Benjamin I have a couple of questions about your part. On slide 16 you said the Decommission Trust Fund was currently down to a little less than \$3,000. Is that right?

Mr. Benjamin: That is correct.

Senator Young: The Extended Care Fund is over \$149M currently.

Mr. Benjamin: It is right around \$149M.

Senator Young: So I guess the Decommissioning Trust Fund will probably expire in the next matter of days I would assume. I went and looked back at some of the numbers from previous presentations and this has been going down and last year in the presentation it was actually \$585,000. In 2013 it was \$4.1M.

Mr. Benjamin: Yes sir. Legislation is written. The Energy Office reimburses us, Energy Solutions, for the institutional care. First, money comes out of the Decommission Trust Fund until it zeros out and then it takes the rest from the Extended Care Fund. As we receive waste we continue to add funds/dollars back to the Decommissioning Trust Fund and monies into the Extended Care Fund. Since the middle of last year I believe the Energy Office takes our invoice, looks at what's in the Decommissioning Trust Fund,

zeros that out, goes over to the Extended Care Fund requests the balance of our invoice from that and at the same time as we receive waste we are sending funds/monies monthly to both of those funds.

Senator Young: It sounds like it is about to run out of money.

Mr. Benjamin: Oh it has run out of money but as waste comes in money comes back in.

Captain Cross: The Extended Care is what really takes over after the other is gone.

Mr. Benjamin: Right. So if there is one dollar in the Decommissioning Trust Fund the institutional invoice has to draw that one dollar out and the rest of it comes out of the Extended Care Fund. When that one dollar comes out we are putting a couple hundred dollars back in for each shipment so it is building back up.

Senator Young: I looked at the 2013 Extended Care Fund and the 2013 Decommission Trust Fund numbers to now and it looks like the Extended Care Fund has actually gone up.

Mr. Benjamin: Yes that's going both by monies we are depositing from waste receipts and by investment group.

Senator Young: So you are saying that when a bill comes to be paid you pay it out of the Decommissioning Trust Fund and if there is any money in it otherwise it comes out of the Extended Care Fund?

Mr. Benjamin: Yes sir. We don't do that the Energy Office under ORS does that.

Senator Young: Maybe this is a better question for Dick Scott at ORS. Do you know when they decide to transfer the dollars between the two funds?

Mr. Benjamin: No sir I do not.

Senator Young: Since this annual report in 2013 This Decommissioning Trust Fund has consistently gone down. In 2013 it was \$4.1M in it and now today as reported to us is less than \$300,000.

Mr. Benjamin: Yes sir.

Senator Young: So that prompted my attention.

Mr. Benjamin: I understand.

Senator Young: The second question I have is how much capacity continues to exist for disposal at the site?

Mr. Benjamin: About a million cubic feet.

Senator Young: And how much are you using on an annual basis?

Mr. Benjamin: Right around 8,000 cubic feet.

Senator Young: Ok. That's all my questions.

Mr. Benjamin: This fiscal year we are going to receive a large component so the volume will spike for FY16/17 and then go back down to 8,000.

Senator Young: Thank you.

Ms. Patterson: Thank you very much.

**SCDHEC Update**, Shelly Wilson, DHEC, SRS Federal Facilities  
(No Slides Used)

*Question from Council:*

Ms. Patterson: As always thank you very much

**DWPF/Liquid Waste Update**, Jim Folk, DOE, Assistant Manager, Waste Disposition

*Question from Council:*

Dr. Van Brunt: Just as a matter of interests assuming the Federal Government doesn't shut down does that effect anything?

Mr. Folk: It certainly could. From that perspective we will talk a little bit about funding. I know Thomas Johnson has more on funding later. We are stable, I don't expect any major shut downs, if it does these are typically few day durations and we will see how that all works out for us. It is all contingent on cash flow to keep the process working.

Mr. Little: Do you have any new contractors to show up?

Mr. Folk: Maybe. Yes, contract transition what we can say about that, is the current remediation contract is set to expire on June 30, 2017 that is the end of an eight year contract. I am waiting to see who the selectee may be.

Mr. Little: On slide 3 in the lower right hand corner it reads: "(Note: Not Resource Loaded)". Are there any resource constraints?

Mr. Folk: For this – this is the easy picture. So obviously there is detailed P6 kind of scheduling that goes on behind that and are resource loaded. For this really what the topic is when you get to these integrate kind of plan of the week meetings. It is really meant to be that level. It is a talking point to focus on what the key issues are.

Captain Cross: You said you were going down twenty-five (25) feet. How long have those pipes been down there?

Mr. Folk: In the 1980s basically is when most of DWPF was constructed and finished up in 1994 to 1995 time frame.

Captain Cross: Do you have confidence those pipes are still good?

Mr. Folk: Yes. We do check those on a regular basis.

Dr. Van Brunt: The cell covers you are talking about are on the Melter side of the DWPF – so what are we looking at here on slide 5.

Mr. Folk: Those are just various components that have been used over fourteen (14) years. Either some components that may have failed, been taken out of the Melter and stored, or waiting for an opportunity to go back in there and clean up. Some of them are other units we will be using and going back into the Melter later.

Ms. Patterson: This is the last spare Melter you have.

Mr. Folk: The complete Melter. We have a Melter 4 on-site. The Melter has about two years' worth of work yet to go to finish it up and get ready. There is a Melter 4 because in the event in a worst case scenarios you want have another one.

Ms. Patterson: Is whoever made these Melters still in business?

Mr. Folk: Melter 1, 2 and 3 as I understand it were made by Chicago Bridge & Iron (CBI) back in the 1980 to 1990 time frame. Melter 4 was constructed by Newport News Industrial Corporation (NNI). Certainly there are people out there that can make one but we will be exploring that market here fairly soon as we start number 5.

Dr. Van Brunt: Suppose you have started essentially SWPF and you encounter a problem can you go back quickly to MCU.

Mr. Folk: Yes, we are not taking any drastic actions with regards to MCU. We will take normal shut down activities when we get to that point and time. Flushing and draining and those kinds of things will be done. We are not doing any D&D activities with it immediately. So as long as that incident or issue you identified happens probably I would feel comfortable saying in six (6) months that we identify there may be an issue. Those jumpers we turn this way, we turn the jumpers back this way and we should be pretty much able to go.

Dr. Van Brunt: Will they keep the centrifuges basically wet.

Mr. Folk: Well that's part of how far we are going to do it and that's why I said six (6) months. It's not going to be a whole lot of time. Those are the primary type of issues that you would have. So you don't have a big window but you do have a window where we can revert. Much more than six (6) months, as that's my engineer swag, I wouldn't feel very comfortable saying we could keep that facility viable at that time. We are not going to do any kind of active maintenance in MCU.

Ms. Patterson: (Reference slide 8) You have identified four leaks or leak sites. You said the pressure had eroded the cone. Do you expect more to show up? Is it the whole cone or just these four sites?

Mr. Folk: No. They have done ultrasonic testing in the entire area. What they have identified very clearly is about 3/8 of an inch is the spec for that entire wall. It was closer to 1/2 inch on almost the whole thing until you get done into this area. That whole area is about 12 inches or so where you have it down to about 2/10 of an inch. So they have been able to through the ultrasonic testing activity to define that thinning very specifically. So the idea now is basically a cone type arrangement will be placed up above that entire area and you weld around the entire cone. That is the notion they have right now. Again high radioactive area so we have used a lot of robotics and a lot of our knowledge from the cleaning activities in the tank farm. We took one of our robots over to this activity and did some clean up as well as some commercial robot work.

Dr. Van Brunt: You mentioned water and water management. Do you have an upper estimate for how much water is going to be needed to put in the transfer line when you put in the SWPF. Is there any interaction between the Melter needs on the evaporator and just the Melter? How closely tied are you on terms of water management?

Mr. Folk: For the flushing activity it's not really a significant amount of water that's required. We are talking in the order of 10 to 20 thousand gallons. We have 35 million gallons and you saw our evaporator milestone I think was 1 million gallons or so. For the flushing and rinsing we have plenty of margins there. It's just when you start getting into sludge batch and your washing a sludge batch you

may be talking a million gallons of water or salt solution, you may be talking a couple of million gallons per tank that is what I am talking about with water management.

Dr. Van Brunt: The guy that wrote the program was one of my students. Sometime the amount of water can exceed what you anticipate so I was wondering just how closely tied this was.

Mr. Folk: The timing of this failure we have been very opportunistic we have had good evaporator runs. We had some evaporator issues a few years ago. But the last three to four years before this decided to leak on us we have had some very good operating time with our evaporators and we took advantage of that. We have bought ourselves a fair amount of space and I believe it was right before the end of last fiscal year when we reduce the whole entire inventory down at the tank farm down to 35 million gallons which is the lowest we have been in a long time. A lot of it was due to the evaporator performance we have had. We were fortunate. We were coming off a good run and that's what gave us the three (3) years to be able to go back and look at repair options versus replacement options this time.

Dr. Van Brunt: Thank you.

**SWPF Update**, Shayne Farrell, Deputy, Federal Project Director  
(Slides available here <http://admin.sc.gov/node/1543>)

*Question from Council:*

Ms. Patterson: Where are your operators going to come from?

Mr. Farrell: The operators for the facility?

Ms. Patterson: Yes.

Mr. Farrell: A lot of them are there right now. They are here and are in training. They have been hired. Some have experience on the site and others have been brought in from the outside. To the extent that we can during the transition some of Jim Folk's guys down the road will also become operators. We are trying to cross train as best we can but the operators in training now are specifically for startup operations.

Dr. Van Brunt: And the vibration monitoring, what is going on there?

Mr. Farrell: I am not the technical guy on that. I can get you some information if you want on that.

Dr. Van Brunt: (Reference slide 4) I see on the chart that vibration monitoring is the only one that is completely yellow (Behind on Schedule).

Mr. Farrell: The one above it is the Process Building Ventilation. We have had some issues with two of our large horsepower fans. The two issues go hand-in-hand; so, we want to make sure that as we finish the process ventilation that the vibration monitoring that went along with those fans are kind of dovetailed together so when one finishes so will the other.

Dr. Van Brunt: Fantastic. Thank you.

Ms. Patterson: Do you have a contract with your constructor to do more of them or do you have to go back out and bid the projects for SDU 7/8/9?

Mr. Farrell: Right now the liquid waste procurement for the upcoming selection has SDU 7 in the scope. SDU 8 and beyond does not. We do have some options on how we can proceed with SDU 8-12.

Dr. Van Brunt: Is there anything that we can do to help in this funding process?

Mr. Thomas Johnson: No. We are having discussion now at headquarters level and we have had some discussion with congressional staff. They understand the need for the funding so I will go through that with my actual presentation but there is a way. We are under a continuing resolution right now. There is a way to actually be able start in 2017 and we are pursuing that. Congress has a couple of different options and I will try to talk about those when I come up.

Ms. Patterson: That is good news. Thank you.

**FY-18 Budget Update**, Thomas Johnson, DOE-SR EM, Associate Deputy Manager  
(No Slides Used)

*Question from Council:*

Ms. Patterson: I would hate for us to stop the only liquid vitrification facility in the country because we didn't have a place to move waste. If you need a letter from us just call.

Mr. Johnson: Thank you for offering to provide the assistance.

Ms. Patterson: I realize you may not have the details to answer this. Given this Administration is not keen on renewables and the Savannah River National Lab has a lot of renewable research how do you think that is going to affect the lab?

Mr. Johnson: We have been working through a number of things for the lab or with the lab. I don't know on this Administration just yet. I know we have enjoyed a pretty good relationship or the site has enjoyed a pretty good relationship with the previous Secretary and the lab. Indications from this Administration I am not sure of just yet. There has been some discussion and actually I think there is a

presentation in the next week or so regarding the lab to the Secretary. We are trying to establish similar kinds of relationships but his perspective on it I don't know and going beyond that to higher levels of Administration we certainly don't know just yet.

Ms. Patterson: Thank you Thomas very much.

Dr. Van Brunt: You mentioned that we don't have an EM1 in place. How many other DOE positions seem to be sort of missing at the moment?

Mr. Johnson: Well there are quite a few. We don't have an S2 in place right now which is the Deputy Secretary. We don't have an S3 which is Under Secretary. We do have a Deputy Under Secretary in place. EM1 and then that's just on the EM side we could go into Office of Science and some of the others. Most of the -1s, Assistant Secretary equivalents are not in place in the other parts of DOE.

Dr. Van Brunt: Thank you.

**WIPP Update**, Todd Shrader, DOE, Manager, Carlsbad Field Office  
(Slides available here <http://admin.sc.gov/node/1543>)

*Question from Council:*

Ms. Patterson: Our final presentation today is from Todd Shrader who is the Director of WIPP and as a way of introduction thank you so much for coming from Carlsbad, New Mexico to Columbia, South Carolina. I am pleased that the shipment from Savannah left yesterday. That is very good. As an encouragement I have a picture for you from our first shipment to WIPP on May 8, 2001. My goal is for our last shipment to be out of here by May 8, 2018.

Mr. Byrne: The bolting work done is by bolting the ceiling?

Mr. Shrader: That is correct. That is putting in anywhere from ten (10) to sixteen (16) foot bolts to anchor the ceiling to the next layer above.

Dr. Van Brunt: In some mines they will put in some rock salt and something to basically change any possible contamination, any dust hazards or anything like that. I was wondering if you have anything like that in place here.

Mr. Shrader: We do. One of the things we do to both stabilize the ground and for contamination control is we will go down and we will mill it because it will tend to be uneven. We will mill it, collect the grain and the results of that and re-spread them. Then we will put a clean layer of salt on top of that. Water it down and it packs it down and it helps us a lot. So it gives it a little bit of room in sort of that

granular cushion so if you get a little floor heave it doesn't change the rise in the floor. And it's a great way for contamination. As you can imagine although the whole drift was contaminated it tends to work its way down to the floor eventually.

Ms. Patterson: How is DOE's relationship with NMED?

Mr. Shrader: New Mexico's Environment Department?

Ms. Patterson: Yes.

Mr. Shrader: Extremely good. They came down in the Fall also. They had to give us an authorization to restart. They spent four (4) days there which is probably the longest inspection they have ever spent at any site in New Mexico with three (3) inspectors. Three findings, all relatively minor. They told us "you will get the letter in two (2) weeks" and we got it in a week. NMED works very well with us and frankly the Governor's office understands the project is very important. We have a three-hundred million dollar (\$300M) a year budget in Southeast New Mexico which is very dependent on oil and gas so it is nice to have a stable link.

Ms. Patterson: I know that Carlsbad is very supportive of manning WIPP but what about the rest of the state?

Mr. Shrader: As you can imagine there are pockets of different cities up north that would not be so supportive of different missions. I think most states sort of have those different parts. Right now we have plenty of Defense transuranic waste around the complex to worry about and that's what we are concentrating on now. If there is any policy changes in the future about that I am sure it will be worked at Congress and the state themselves. There are some efforts to look by agencies outside the department at spent fuel storage out there or in west Texas but they are not connected to the WIPP site.

Ms. Patterson: I think we have some waste here that's not really call transuranic waste yet – it's transuranic.

Mr. Shrader: The Land Withdrawal Act is very prescriptive now.

Dr. Van Brunt: If I think about Los Alamos I think about lightning strikes, very high frequency of lightning strikes. When you mentioned safety what is the level of lightning strikes in and around your facility?

Mr. Shrader: It is very high. In fact yesterday we had severe thunder storms in the area similar to what you had last week. The site itself is ringed by lightning protection systems. On top of all our lifts we have lightning attractors. We have rules similar to a lot of sites that if we have lightning within so many miles workers do not go outside and we keep them in the buildings. Certainly severe thunder storms and lightning, not so much tornados, but hail does occur during the monsoon season in the late summer.

Dr. Van Brunt: Thank you.

Mr. Byrne: Your February 14, 2014 radiological release incident. Did that come from one (1) barrel?

Mr. Shrader: Yes it did. It was one (1) drum.

Mr. Byrne: What happened to that barrel?

Mr. Shrader: We sealed it up. It was in panel 7 so we put up a sealed bulkhead and left it back there.

Mr. Byrne: So anything else in panel 7 that is likely to have the same thing is sealed?

Mr. Shrader: If there was another event it would not spread past there. There are certainly drums that came from the same waste stream as that one and if anything was to happen it is sealed behind it. I might also add even in our panels 1 through 6 they are now sealed. We could have had rock falls down there. We just don't look but they are sealed ultimately.

Ms. Patterson: Is there a TRU waste from the Manhattan Project like from Hanford when they didn't have a handle on what they were doing and that kind of stuff?

Mr. Shrader: Sure the TRU waste definition actually came in 1970 I think it was. There were different definitions there but as old burial grounds or old processing facilities are torn down they do generate transuranic waste.

Ms. Patterson: They may not have the right pedigree.

Mr. Shrader: They are harder for us. It is fairly easy for us to figure out the radiological nuclei content of plutonium. What are difficult are the chemicals because the records from sixty (60) years ago are simply not as good as they are today. There were different waste practices and different work practices back then. I suspect if we ever tore down T-Plant at Hanford you might actually get plutonium that was made in the 1940s out of that facility at some point.

Mr. Byrne: Your February 5, 2014 incident where you had your little mine hummer that caught fire there are you looking at the possibility of using no diesel driven equipment?

Mr. Shrader: Sure. Definitely the first set of vehicles we changed over to hybrids is the bolters themselves. Beyond that there are not a whole lot on the market yet. There are some but some of these vehicles haul so much weight it is tough to find electric that is that good. Our dream is to have all electric fleet in the underground; just not all of it is available right now.

Mr. Byrne: Your ventilation system is that diesel backed?

Mr. Shrader: We have two (2) emergency diesel generators. As we mentioned lightning strikes, one got knocked out yesterday in the thunder storm. Although it is not a safety system per say, meaning if it gets knocked out we just don't have workers in the underground.

Mr. Byrne: Thank you.

Ms. Patterson: Are there any public comments? Hearing none, I thank you very much for coming.

The next meeting of the Nuclear Advisory Council will be held on July 13, 2017.

**Meeting adjourned**