NUCLEAR ADVISORY COUNCIL MEETING

South Carolina State University

State Room – Building A3

October 15, 2018

12:45 pm – 3:45 pm

Attendees: Governor Henry McMaster, Senator Tom Young, Representative Sylleste Davis, Chairman Rick Lee, Mr. Scott Batson, Captain Claude Cross, Dr. Carolyn Hudson, Dr. Musa Danjaji, Dr. Vincent Van Brunt, Mr. James Little

**Rick Lee:** Call to Order – Approval of Minutes & Update of NAC Activities. Introduction of Governor McMaster.

**Governor McMaster:** Thank you, Rick Lee. I’ll be very brief, I thank you all for what you’re doing.

We’re in a tight spot and we’ve got to get out of it, and I’m anticipating a meeting this week with the President and Senator Graham; it’s temporarily scheduled, I hope we’ll be able to keep it, but the purpose of the meeting will be to convince him and explain to him the facts of our case. When you have good facts for your case, and you can present them to someone to make a decision, usually things come out the right way. I’ve made presentations to him as well as the administration on other facts involving things, and some of them have gone our way and some of them haven’t, but the facts of the case on nuclear power and its future, and the facts of the case on why the MOX facility should be continued at the Savannah River Site I believe are overpowering. I’ve learned a lot about it by listening to people like you who’ve written and understand it, and I know that, for example, that there’s no other way to reduce the weapons grade plutonium to where it cannot be reversed and used again which would be consistent with the treating is to put it in the MOX process. Dilute and dispose will not work. Also, the dilute and dispose method is not one that will, I don’t believe it will receive clearance in New Mexico. Two US Senators opposed to it; the next governor is going to be opposed to it, I believe. The current governor is in favor of doing that, but I don’t think the political will for that will be there in New Mexico or any place else. In Nevada, the Governor has just come out with a lawsuit; he’s fighting it as well. So our opportunity, our responsibility and the chance to get this done is, as we know, the Department of Energy has already said no, but I think the Department of Energy has made their decision based on bad facts, and I hope to have an opportunity Thursday, if we can get it done then, if not some other time, to present those facts, because I think that we’ll be making a big mistake if we reverse the process. It withstood all the clearances and is ready to go. So, that’s what we’re going to be doing. Those students here, I want to encourage, just like Rick Lee and President Clark . . . this is a great area to be in. It is an area that is important, not only in the United States but in the world, nuclear power and everything that goes along with it, is clean. It doesn’t blow away in hurricanes or storms or tornadoes like telephone poles or solar panels do. As I say, it’s clean, once you get the plant built, it’s very inexpensive. It’s reliable, and we need it and all that goes along with it. It’s not time to turn our backs on nuclear power, all things nuclear, the rest of the world is charging towards it as fast as it can. And to maintain our national security and our strength, I think it’s important that that be one of our sources of power in this country.

So, I want to thank all of you; I’m here to listen to you. I’ve learned more from listening to Rick Lee talk and explain to me more than I ever thought I would. But it’s very, very fortunate because this is a very important issue and we need people who understand it and, as he said, we need young people who come along who want to get into this area cause it’s going to be with us, and we need good minds and energy and that’s what you’re producing here at South Carolina State University. So, I thank you very much, I’m here to listen, and I’m always available, not only on this issue but on others as well. We look forward to ideas and insights from people around the country, around the state, and this group would be delighted to hear from people in this room on things that they think are important and things that we can do. So, thank you.

**Rick Lee:**  Next on our agenda, Michelle DeWitt (Sr. VP Nuclear Fuels, Westinghouse) and Michael Annacone (VP Columbia Nuclear Fuel Operations, Westinghouse). They wanted to speak to us today. Westinghouse has a fuel facility; they make fuel pellets for nuclear reactors in Columbia; they’ve been there for many, many years. They provide a lot of jobs to the community, but recently there have been some issues, surrounding operations there at the plant that they wanted to address, so I said this is a good forum to do it, the right people are here, the press is here, and so on. So, I would like to suggest Ms. DeWitt and Mr. Annacone, I’ll hand it over to you.

**Michelle DeWitt:** Thank you, President Clark. Thank you very much, Rick, for inviting us to join you. It’s a pleasure to be here speaking in front of Governor McMaster. Governor, thank you. The Governor’s Nuclear Advisory Board, thank you very much for having us. And what a pleasure to be here with President Clark and all these bright young nuclear engineering students. As the mother of an engineering student, it gives me great pleasure to be seeing all of your faces. It really is, as was said, the future of our industry. So, Mike and I are here working hard to keep that industry strong for you. So, it’s many years ahead for you to have wonderful career, like I’ve had the pleasure. But, I’m also pleased to be here, this is my first visit to South Carolina State University. So, pleased to be here, the home of the only undergraduate nuclear engineering program. As I’ve heard from the earlier remarks, soon to be working cooperatively with USC for accelerated graduate program, so that’s fabulous, that’s great. We love to hear that as employers of nuclear engineers.

As Rick mentioned, we are here to share some information about our plant in Columbia, in Hopkins, SC, and talk to you about some of the really good work that Mike and his team have been doing in dealing with some issues that we’ve had at the site. So, we’re going to talk first about background, about our facility, and recent acquisition of our company by Brookfield Business Partners and then we’ll go into, I’ll turn it over to Mike, and he’s going to speak about his Facility Excellence Plan, what actions are being taken relative to recent events which you many have heard about in the media, and also talk about some of our longer term activities with regards to remediation and environmental cleanup at the site, and the focus on protecting employees and community health and safety, and community engagement.

So, first I’d like to provide some background on our Columbia fuel facility. As I said, we are located in Hopkins. We have been there operating for fifty years this fall, a year from now, sorry, next fall. Since 1969. We employ about 1,200 people at the site. So, as I said, a pretty major employer in the area. At our site, we produce nuclear fuel for reactors, both in the US and around the world. And, the fuel produced at our Columbia facility is used to produce about 10% of the electricity in the United States. So, we take that very seriously; that’s a very strong strategic band-aid that we have, and that’s something that really drives us forward as we look at driving excellence at our plant. We are very proud of the contributions that we’ve made over these past 49 years. And, recently, as I mentioned, on August 1st of this year, we were acquired at corporate level by Brookfield Business Partners. Brookfield is an asset management firm with a very significant amount of holdings including in the energy field, and so, we find that they are very well suited with us. They are a firm that really works very closely with the assets that they hold and drive performance across those assets as well as have a strong focus in environmental safety. And so, we have found, Mike and I, that they have been very supportive of what we wanted to do at the plant, including making investments, and in supporting the programs that we have. And so, I’m feeling very good about that ownership that we have going forward and the sponsorship and the support that they give us. So, we, with the support of our owner, is to continue to be a leader in the nuclear industry. We have a strong position and will continue in the energy market including experience and safety in delivering nuclear fuel services to operating nuclear plants. We also work in the decommissioning and instrumentation and control fields. So, now I’d like to turn it over to Mike. He’ll speak to more about this facility and our excellence plans.

**Mike Annacone:**  Good afternoon. Thank you, Governor, President Clark, Advisory Board Members, faculty, students. It’s a pleasure to be in front of you and share information about my facility and any questions that you may have. What I’d like to do is first start with an update around the issue we had back in 2016, the S-1030 Scrubber Issue, which was presented a while back to the Advisory Board. I’ll provide a brief update on that and then what I’d like to do is move into our broader excellence plan to show how we’ve applied lessons learned from that event more broadly across all facets of our operation at my facility. And then, as Michelle mentioned, we’d like to share with you, discussions around some of our more recent environmental events and actions that we’re taking, and ultimately improvements that we’re making, with community engagement.

So, starting with the S-1030 Scrubber Event, in our previous discussions we shared with you some of the causal factors around that. That event really was rooted in some challenges around configuration management, fundamentally making sure that the design changes that we were making to that system were well-aligned with the safety basis of our plant. And, we had some gaps in our procedures and the training that was being provided to our workers and our leaders, to ensure that they had the information that they needed to properly operate the system and to have a strong questioning attitude and make good decisions around those systems. I’ll share with you some of the work that we have done to close those gaps. I am pleased to say that with all the corrective actions to prevent recurrence from the root cause that we did on that event are completed and recently have been inspected by the NRC and have been accepted by them as well.

Fundamentally, the focus that drives sustainable improvement around changes, so we made fundamental changes to our design control process; we made several changes to the procedures to put more rigor into the procedures to provide very clear guidance to our operators on our activities. And most currently the acceptance criteria for what we should expect of them, and how that aligns to our safety basis. We do continue to make process improvements around the S-1030 Scrubber; we’ve applied those lessons to similar configurations in the indoor barometer across the plant. Specific to the S-1030 Scrubber, from the whole perspective, we have some significant improvement in the ability of that scrubber to perform its safety functions based on the approved behaviors and processes that I’ve just described. We’ve seen, if you were to. . . based on the full cleanings that we do on that piece of equipment, if you were to pro-rate what we find in those on routine cleanings, it would equate to about 1 kilogram of uranium against a limit of 85.7 kilograms of uranium. So, it varies in margin to our limits that we put in place. And I’m pleased to report that as we continue to focus on improvements, we recently identified some operational changes that further reduce that. We believe that half, will validate that, in the next cleaning that will occur next week. With that also, you may recall we had a meeting with the Nuclear Regulatory Commission for corrective actions for a confirmatory order, all those corrective actions are on track to begin. As mentioned, many them have already been reviewed and accepted by the Nuclear Regulatory Commission.

Moving more broadly, from the Scrubber event, and as importantly, to have and apply those lessons learned across the facility. We took what we’ve been learning from that event and some previous events that we’ve had at the facility, you may be aware we had a fire at the plant, in a plate room at the plant; we also had issues with some injuries to some of our employees around the “lot pit” in our assembly area. I brought in some folks from outside of our industry that I’d worked with in the past on assessing and turning around performance. Those folks had significant experience in these type of recovery situations. So, they helped us do a comprehensive analysis of the underlying factors both culturally and behaviorally, processes and procedures that led to those challenges. We also are using a document that I have some experience using in the past when I was in the operating utility business. It’s called INPO 12-11 a strategic framework to significantly improve and correct performance. It’s a document that operating utilities use to make major changes to turn around all kinds of performance. That document has formed the basis for our excellence plan. As you can see from the graphic up there, there are six main areas of our focus, leadership alignment, employee management, safety excellence, which is elements in all our safety programs, including environmental safety which I’ll share some insights on later, organizational excellence, asset management, operating manufacturing excellence, and performance monitoring. I’ll highlight, a little bit around the side there, you’ll see elements to the left, again, these are what I would consider based on input from past experience, industry operating standards, and the experts that I brought in to help us, these are the things that you have to build into your culture so that you can fix your own problems and more importantly, fix them in a way that sustains performance long into the future.

Also, I do want to share under the asset management element, Michelle referred to this too, it’s important to note with our new owners, a significant of capital investment is going into our facility to ensure that we’re making the necessary equipment improvements, for our processes and our infrastructures, that we are reliable to our safety equipment, so that we can protect the health and safety of our workers, the public and the environment and to improve our overall performance. And, in the last element I want to stress on this slide, really ties the bottom two bulleted items on the left-hand slide, which is around valuing oversight and engaging and emulating your industry. It’s important in the type of business that we’re working with that this is associated with it, that we have critical critics. One of the bosses I used to have in the past told me that if your critics aren’t critical, get new critics. It’s very important that we have those challenges to ensure that we’re doing the right things, and that we understand our problems, and that we’re learning from others.

What I’d like to do now is move into a discussion around some of our recent environmental challenges, the one that we had first that was brought up in the press was our hydrochloric acid spiking station. As you may have read about, we have two of those stations in my plant that we use to mix hydrochloric acid and uranium nitrate that’s part of the improvements that go into our processes. Back in June, June 16th, one of our operators identified in a routine inspection a leak from this system itself from the flange on the spiking station into the dike area underneath the spiking station. The dike area is lined with a poly-carbon liner, the purpose and length is two-fold; the dike is to contain liquid, so it doesn’t challenge my operators and then, two, the liner is to protect the concrete below the system so that we don’t degrade the floor and then create a pathway to the soil below. The operator found that leak; we took the system out of service, isolated and drained it, we leak tested the remaining system before we put it into service and since that day, the original system that leaked has been out of service as we investigate and take appropriate action to remediate that issue which I’ll share with you. I think it’s important to note, going back to some of the principles that we’re working on from the scrubber event, is to strengthen our questioning attitude around and decision making around our issues. What we noticed at first was an issue with the dike itself and some leakage that came from out of the dike onto the floor in my plant; that was what was originally reported. However, through good questioning attitude by our maintenance technicians and operators, we decided to pull the liner up and look under the liner, and that’s where we found the leak that was going to the soil. That’s an example of shifting from a broke-fix mentality which could have been just to fix the leak on the system itself and then not explore what else we needed to check.

We did take soil samples below the spiking station on July 11. We were prepared to do that work safely and we recorded that in 24 hours as required by our regulations to the Department of Health and Environmental Control (DHEC) of South Carolina and the Nuclear Regulatory Commission. At this point we continue to work on our remediation strategy. We developed a comprehensive soil monitoring plan, reviewed and approved by DHEC. We do use outside experts in ground water protection and soil analysis to help us understand that and what we should do. That to date has been approved. We completed our soil sampling and our soil remediation will start on November 5th, and we expect complete removal of the soil mid-November where we will then perform the requisite soil samples to confirm that we’ve remediated all the soil and if necessary do additional remediation. Based on the results of the soil analysis that we have, we have confidence that we have not challenged the ground water below the spiking station.

I do want to share also, we have completed a comprehensive investigation around that issue itself. We have identified the requisite work that we need to do to find out how to change the design and operations of that spiking station so that it doesn’t leak in the future and that if we do have minor system leaks in the future that they don’t challenge the environment. We found some gaps as you may have read in the newspapers, based on a recent NRC inspection report which fundamentally cited the investigation we had completed before the NRC inspection, that we had some gaps in the way we were maintaining that system. So, we have implemented different measures on the operating systems, so we don’t have that challenge; ultimately that will be redesigned and once we return the other spiking station to service, we will then perform the same activities on the currently in-service spiking station.

For the contaminated waste water line, again, this is an issue that you may have read about in the press. These were two leaks, one directly beneath my plant and one directly outside of the pump building within a few feet of my operating plant building. We had leaks back in the 2008- and 2011-time frame. Those leaks were not reported at the time of the event, because at that time it was believed that they were not reportable events. I think it’s important to note that in today’s environment, we did report the spiking station leaks, and we have revised our internal reporting procedures to ensure that there is certainty for my staff on a going forward basis on what we fully expect for reporting, because it’s very important that we are transparent with our regulators to allow them to do their job.

At the time of the leaks, the leaks themselves were addressed, the pipes were replaced and the soils in the area were sampled and plans were identified to remediate those leaks at the time of decommissioning of the plant when plant operations ceased. Earlier this year, we self-identified the need to better characterize that leakage when we went and looked at the documentation that we put in our decommissioning funding plan around those two leaks, again with an eye to the improvements in decision making and standards around questioning attitudes that we put in place, we felt like in today’s standard we needed to better characterize those leaks. So, we worked with the Department of Health and Environmental Control to install temporary wells, so we could better characterize the soil groundwater around those leaks. We did get an initial set of data from the first set of temporary wells that were installed that was higher than the drinking water limits. We did find some issues based on input from our independent experts that are helping us with groundwater that based on the well methodology that was chosen, combined soil and water sample well that resulted in cross-contamination of soil to the water in those first sets of wells and that the results were not representative of the water itself underneath that leak. We captured that in our corrective action program, and we’re revising our set procedures to help us not make that kind of mistake in the future. Using input from our experts and from DHEC, we have installed properly developed, fully developed water wells, we’ve taken those samples and we’ve recently gotten those results. Those results, we installed nine wells, in about 30 feet in series, along that plant building, those well results show that 2 of the 9 wells within 30 feet of my plant building have uranium about five times greater than the groundwater drinking permit in the localized area around that plant building. It is important to note that no other groundwater wells on my site and only 2 of those 9 temporary wells showed those kinds of results; all the rest show groundwater uranium below the limit for groundwater. So, we have confidence that we are not challenging offsite or public health and safety, and we will be working with our experts and the Department of Health and Environmental Control to develop an appropriate remediation strategy to address those leaks. We expect to have that strategy developed by November 30th.

So, as we go forward, as we learn from these lessons, we have a lot of employees that come new to us, and one of the things that’s important is that we do training for those folks and it’s important that I have an opportunity to engage a set expectation early of what’s most important for us. The first slide in the presentation that I provide to our new employees is our primary accountability working in the nuclear business. And that is to protect the health and safety of ourselves, our workers, and the health and safety of the public and the environment. It’s important that my workers understand, my leaders understand, that that’s the most important thing that they do every day based on the risks that are inherent when working within the nuclear industry. In that discussion I share with them some important tenets that tie back to our excellence plan and principles of sustainability that I discussed with you earlier, and those are our ability to self-identify and correct our problems, and also be open and transparent about our problems, so that we can understand and we fix them, and most importantly, because of the nature of the work that we do, have open and transparent dialogue with the regulators and the community. It’s very important for our regulators to understand where our issues are, where our challenges are, so we can be certain that they have the information that they need to do their jobs.

We do continue to focus on improving our programs and again, applying the lessons learned from our S-1030 event, the Scrubber event. Going forward, in the environmental area, in Columbia, I have commissioned a comprehensive strategy to strengthen our environmental program. We did have activities built into our Excellence Plan to go through our program. We had other things that we were doing prior to that; however, in light of these two events, I felt that it was appropriate for us to accelerate our focus in this area. We are performing a comprehensive self-assessment of our entire environmental program, not just groundwater, but also air, surface water, all program elements. We are bringing in people from outside of my company to help us with that assessment to ensure that we have a critical third-party review and to help engage my people and improve the technical acumen of my staff as we go forward. We are reviewing all the past events that we have had in Columbia and assessing those. We are also evaluating very clearly the current state of all our existing groundwater monitoring wells. We’re working on improvements to our site modeling to identify what else we can do to improve that from a proactivity perspective, and then ultimately, the output from all of this will be an enhanced program, along with formalized guidance on remediation that we can use on a go-forward basis, to help us and guide us through our decision making to ensure that we’re making appropriate remediation decisions and protection decisions for public health and safety. These efforts are informed by a conditioned guidance, NEI, Nuclear Energy Institute Groundwater Protection initiatives that we’re following and EPRI, Electrical Power Research Institute, has groundwater and soil remediation guidelines that we’re following to this end.

Now my last slide, ties back to, as importantly, work that we need to do to rebuild the trust with the local community. We’ve had some challenges in the past at the facility, we’ve had some issues with the consistency of our engagement with the local community, so we’re going to work to close those gaps and move in a sustainable way. We have engaged with local leaders and community members in an open dialogue about the plant, about our operations recently through a Lower Richland Community Advisory Committee. That work will continue on a routine basis. We have established an Employee Community Engagement Council which is a number of my employees who will work to establish routine ways to volunteer and engage the local community from a social responsibility perspective and to help us make improvements in general terms. We are sponsoring a Westinghouse Community Day in the mid-November time frame to invite the public onto the site so we can share what we are doing at Columbia every day, and also put some focus on improvements that I have pointed out to you today and other things that we do to engage with other local emergency response operations that show are we are focused on protecting the public. And then lastly, we’re forming our own community advisory board to help provide an avenue for two-way communications with key industry leaders and political leaders in the area.

I’m confident that the steps that I’ve outlined here today will help improve Columbia’s sustainably going forward and further improve and strengthen the relationships with the local public. Thank you for the opportunity to speak with you today. I’ll be glad to take questions.

**Governor McMaster**: You referred to a leak and two wells out of nine that had registered a leak. When was that discovered and when was the tear in the liner that you referred to that you believe led to that discovery?

**Mike Annacone:** Okay, so, there were two different leaks, Sir. I’ll start with the spiking station leak. Initially, that, the liner leak for the spiking station, we discovered that in June of this year. And then again, once we got the liner removed we found, well, we found a leak in the system, let me go back in my notes, so I don’t miss one of the dates, the leak from the piping system on the spiking station leaked into the dike on June 16th of this year. On June 26th, after we had removed the system from service and fully drained and isolated it, as we were investigating the problem with the dike proper, we lifted the liner and on June 26th, we found the issue with the floor below the liner and then ultimately after working with the Department of Health and Environmental Control to develop an appropriate strategy on July 11th we sampled the soil and reported that on July 12th. So that was the spiking station leak.

The other issue were the legacy leaks from 2008 and 2011; that’s the time when those leaks occurred on a wastewater system. Earlier this year, again, we identified a desire internally to better understand those leaks from our decommissioning perspective and we took samples initially in August that we had questions around, and we re-drilled wells; on October 5th was when we got the results from the new wells that we put in with input from DHEC and our experts that confirmed that two of the nine wells next to each other in this localized area showed contamination above the groundwater limits. So, it was October 5th where we discovered the groundwater contamination from the 2008 and 2011 leaks; it’s important to understand our normal groundwater monitoring wells, we have about 39 on site; none of those show any evidence of uranium contamination above groundwater limits. Some of that is due to proximity to the leak location and the fact that groundwater underneath our site moves very slow, about 153 feet per year, and the closest normalized well monitored well from that leak location is fairly far away.

**Dr. Carolyn Hudson:** I’ve been told that a 2013 study had found fluorides and nitrates around the wastewater. Is anything being done to stop that?

**Mike Annacone:** Yes Maam. So, your comment is correct. We do have one period of voluntary cleanup, a program with DHEC around volatile organic carbons. We had an issue in the past from an old well-house that resulted in getting oil-based products into the soil and ultimately groundwater; we have over the years installed groundwater monitoring wells to monitor that leak and where it’s at in groundwater on the same property and as part of that voluntary cleanup program, based on how that would move over time, wemove toward remediation of that extraction well. So, we’re working very closely with DHEC. Through that program of all the remaining carbons, we do have also issues with fluorides and nitrates on the site, not challenging the site boundary; we actively are installing additional monitoring wells, and are continuing to monitor that, and as part of the effort that I described earlier about assessing our program, improvements that we make with that to work, we are looking at what our opportunities are to remediation instead of just offering that. I think that clearly from a priority perspective, what we’re working to build is, one, upkeep in the first place. Don’t put it in the soil so it can challenge groundwater! If, however, that does happen, how do you mitigate it getting to groundwater, if it gets to the groundwater, how can you keep it close to the plant building proper, so it never encroaches on the site boundaries. So, we do have continued work to do with DHEC through the voluntary cleanup program on volatile organic carbons and we’re working on the assessment I referred to do to identify other remediation activities.

**Scott Batson:** Good afternoon Mike. You mentioned on the wells, you put nine additional wells in place. And the others were a distance away from the pipe that leaked. How many samples have you gotten from those nine wells?

**Mike Annacone:** Of the nine wells, we had two currently and we’re pulling another set of samples now.

**Scott Batson:** Do you see any trend on those?

**Mike Annacone**: Not on the temporary wells Scott, because those were recently installed. On our permanently installed wells, we sample those on a quarterly basis and we provide an annual report to DHEC and the NRC. I know you’re familiar with the concepts, some of our wells are NRC required wells, to monitor radioactive nuclides and then some of our wells are to monitor contaminants that I just referred to and we report those to DHEC. So, again, we do quarterly samples, we monitor those. We have analytics that put into a program that monitors what we see and how that changes over time, so we can monitor how are things trending. Are they going up, are they going down, is it moving? So, we believe we understand that on the permanent wells, but again what we wanted to do was to understand more proximate to distinct locations since we’re not seeing it on our permanent wells, we want to get closer to where the leak is to understand it and to characterize it and then deal with it there before it spreads to challenge site ops.

**Scott Batson:** So, you’re not seeing anything in terms of your permanent wells even though you haven’t exceeded reporting thresholds that you’re [inaudible].

**Mike Annacone:** Correct.

**Scott Batson:** Just one other question. What is the [inaudible] due?

**Mike Annacone:**  Yes, there are some modification activities. The last modification completes in 2020. But the large majority of the non-modification work is completed. For instance, we had work to do around perceived use and enhanced standards which has all been implemented. So, if you want to look at the [inaudible], I’ll be glad to talk to you afterwards, all the non-modification work activities with one exception are complete.

**Scott Batson:** Have there been any interim inspections?

**Mike Annacone**: Yes, sir. We’ve completed interim effectiveness reviews on all of the corrective actions, and thosehave been completed and we’re actually, with the exception of the modification work, we’re doing a final effectiveness review now, and we have people from outside my plant performing those reviews and then I also have an independent panel endorsing the completion of both the administrative space and results space to make sure it works properly.

**Rick Lee:**  So, if I could for the benefit of the students, y’all don’t have the benefit of the previous hearings that we’ve had, but we’ve had this subject come up. The plant, as you know, is a uranium fuel plant with radioactive material, and leaking radioactive materials from a plant really drives the neighbors wild. They’re worried about groundwater; they’re worried about homes and land values and all that. And, there’ve been a series of events at the site wherein the public, the folks who live around, didn’t feel didn’t feel that they were getting straight answers, I guess. There wasn’t adequate communication, quickly, in a timely manner after the leak was discovered. So, Westinghouse is engaging in an activity now. For example, what we heard here just a few minutes ago with regards to the leak that was identified in the wells is the first that we heard. They are now going forward in a transparency effort to share information in advance so that nobody is surprised. As soon as they know, we know. So, I just wanted you to understand that there have been several events and those events have caused neighbors to have concerns, and that’s the reason for taking the steps to pull the neighborhoods and the people in Columbia together so that they can all be informed appropriately. The DOE sites, for example, at Savannah River, they have a CAB, a Citizens Advisory Board, where there’s a regular exchange of information. It’s a positive step to see you step forward and do this, and I just wanted to make sure that all the students here have knowledge of what was going on. Any questions?

**James Little:** Mike, I guess, can you show a little more detail on where, a couple of areas of where specifically of where the capital investment is going and where this oversight is? I’m concerned on the inside of the building as well, if it’s outside the building I’m worried about problems as well. I want to focus more on what’s going on inside.

**Mike Annacone:** Okay, so there are two parts to the question. The ‘where is the capital investment going’ and ‘where is the oversight.’ Let me start with the oversight. First, it starts with me and my staff and our ability to provide oversight to our organizations themselves. So, we’ve adopted some practices that add to the nuclear utility business called management review meetings. I think Mr. Batson would be very familiar with management review meetings, having been on both sides of those. Where there’s very intrusive challenge and feedback provided around documenting the performance metrics and other information. So, one, we started, and that’s one of the major changes we have, and we invite, from an oversight perspective, separate from my organization, my boss, and several of the corporate function leaders over the areas that are being reviewed to participate in that management review meeting and ask us questions and challenge. Westinghouse also has what is called a Nuclear Safety Review Board that meets routinely on our performance and which are people who have come out of nuclear regulatory commission, the utility business. Those folks periodically provide oversight to our facilities in light of some of the challenges that we have faced. I have asked for increased oversight from the Nuclear Safety Review Board for them to come in very routinely and review our performance. We also have recently made some changes corporately to staff, some focused people around our safety environmental program. There’re new folks with a direct focus on things like criticality safety, fire protection, and some of those programs have now provided direct oversight to us and what we do every day. Those are just some examples of oversight changes that have been made, and these changes in many cases apply beyond just my facility.

From a capital investment perspective, the capital investments go on across all facets of our business. I can start with the facility itself because it’s important, a lot of times when people, like customers come to Columbia, they put a lot of emphasis on my production equipment so that when we’re producing their product, although when you think about things like events that I’m talking to you about today, those are not production equipment items. Those are equipment that is necessary for the facility to run safely and reliably, and when that equipment is not running safely and reliably, it does challenge operations, and it creates management distraction that takes our eye off of safety and quality operations. So, a significant amount of investment has been made in our facility infrastructure, things like fire protection equipment, fire tanks, fire pumps, air compressors, cooling towers, chillers, boilers, all the facility equipment that needs to make that place run reliably day to day. From a safety perspective, we have recently completed in our industrial safety area a re-baseline of what some of our higher hazard, industrial safety hazards are; all of those projects have been funded through that capital investment to improve our safety margins at the plant and, then of course, certainly production itself. We’re installing a lot of automation around our equipment to alleviate some of the burden that’s been placed on my people from doing things manually on a day-to-day basis. I will just tell you, without using exact numbers, the capital investment in my facility has doubled since I’ve been there, and I have received every bit of capital that I have asked for.

**James Little:** I guess the concern I’ve got, full disclosure, I worked at Westinghouse for a very long time, 25 out of 45 years I was at Westinghouse; I know this facility very well and a lot of people there. I also know that in 1989, this facility won the Malcolm Baldridge Award for Quality, the first one ever awarded. And my concern in seeing the recent turn of events is there’s been a significant decline in the level of quality and inattention to detail. So, for the people in the audience, particularly the students, in the nuclear field, you always watch these trends. You always look at unrelated events with a sense of look upstream, so, this facility has seen uranium accumulation, outside uranium fuel leaked through a scrubber. There was a fire at this facility. It was a wash tag that injured people. Now you’ve seen this leak in the spiking station. So, those trends are really the red lights and nuclear industry needs to say, “wait a minute, let’s find out if these are isolated events.” A few years ago, they brought Mike in, who had experience in new property and the facility turned around. I’m encouraged by what I’m seeing, but the jury is out yet in my mind for this to turn around. I have a lot of personal belonging at this facility in the past but it’s really very important that, as you’re going through these programs, you will find more problems because you’re looking harder. And you need to look harder, and you must be able to deliver bad news if you find it. So just, for the students in the audience, it’s very particular in the nuclear industry you must be able to do these things and to pull these strings, these loose threads, and find those things. Because, if you haven’t been looking hard, you’re going to find more cracks in the armor. So, my questioning of Mike and Michelle, who I know very well, I’ve known them a long time, is to really probe with a lot of diligence. I ran that Nuclear Safety Board back in 1980’s Westinghouse, so I’ve participated in this, I was the guy who pointed the finger that would say, “hey, wait a minute, we have to investigate.” I still have concerns about the facility over a number of years, there was a lack of maintenance and inspections at this facility. The investment had gone down, you’re looking to increase that and have been given that opportunity. You’ve just been acquired by a new company; you ought to be going to your Board saying, “hey, I need more money.” You’re going to get that money, so, this is the start of a turn-around in my mind. I think, the committee is out on whether they’re there yet; I think it’s a good start, but I don’t think they’re there yet. This is very important economically, not only to Westinghouse, but to South Carolina. It really is. You’re looking at 1200 jobs there and a couple million-dollar payroll, and the expenses that they do, this is a very, very important facility for South Carolina’s economy, but it’s also very important for the community. The community has been left on the outside kind of wondering; explain nuclear to your non-nuclear friends. It’s a little hard, right? This is a cross-section. So, think about explaining the spiking stations, the uranium in the soil, groundwater tables, geology, hydrology and all that sort of stuff. The trend lies in very, very small amounts of measurements and you’re trying to devise a trend from this, so time will tell. So, I’ve been very disappointed the past 3 or 4 years by seeing the decline in performance at this facility. I’m encouraged with what I hear, but right now it’s worrisome, so we’re going to have to watch very closely to see if this is something that can be returned to the point when it was excellent. I’m old enough to know, I’ve been there when this facility was new. So, without revealing my age, you now know how old I am. So, I think it’s important, I think the Nuclear Advisory Council is going to keep a close eye on this. I solved the first accumulation problem at this facility in 2004. I sent a team of engineers to the facility to turn around its safety program. They hired them all away from me, and I felt good about that. But, then watching this facility, it’s been kind of a, it’s like when you’re related to somebody, you know, you still want to watch over them, your old neighborhood, you kind of look at it even though you don’t live there anymore. But, the recent events of the wash tag, spiking station, scrubber. . . In my mind, the hits have been keeping on coming, even as of last Friday, we had NRC inspection report that quite frankly said, hey, the inspection in maintenance hasn’t been too good. This liner had been repaired previously. Someone found that leak, okay. What was going on with that liner that’s been repaired several times? So, is it time to look at that liner? Now, fortunately, I think they’ve got some good management. I think the previous owner, who will remain nameless, wasn’t real big on spending a lot of money because they didn’t have any. In fact, Westinghouse went bankrupt, so now with Brookfield coming in and acquiring, I have high hopes and even higher expectations that they will turn around this facility.

**Captain Cross:** I’ve been around for a long time; I cut my teeth on nuclear safety, and it taught us that anything from any kind of liquid material would be treated the same as if it is potentially radioactive. We grew up with that. And, I think if it’s that way, you’re going to have problems with your neighbors for a long time because they don’t understand it. Now they know that it’s not a good thing, so that’s something you really must work hard on.

**Senator Tom Young:** Mr. Annacone, thank you so much for your presentation, and thank you for what Westinghouse continues to do in South Carolina with this investment in this plant. We do have some questions; I want to make sure I understand some more information. I have colleagues in the State Senate who represent the areas around where this facility is; they’ve got constituents who have questions, and I want to make sure I understand this too for my benefit. How many different leaks were there? I know there there’s the leak that was. . . Tell me how many leaks we’re talking about.

**Mike Annacone**: The leaks that I’ve referred to today, I’ve referred to three leaks today. I’ve referred to the spiking station leak that occurred back in June of this year, and then I referred to the contaminated wastewater line that leaked over the 2008 timeframe, and then the 2011 period. However, based on the comments and questions that were made earlier about other constituents in our groundwater, carbons, nitrates, and fluorides, there have been other leaks at my facility. I had the opportunity to report it to the regulatory authority and are being managed by our decommissioning funding plan or our voluntary cleanup. But what I referred to specifically today were three.

**Senator Tom Young:** Three leaks at the facility in Richland, 2008, 2011, and 2018?

**Mike Annacone**: Right.

**Senator Tom Young:** One of the things that I do, when you and others come before the Council, I go back and I look at some of the prior presentations that you all may have made, and this is for anybody, whether it’s a matter of one of the different companies, whoever, has spoken to the Council in the last few years. In this case, I’m looking at the 2014 facility report that was made to this Council, and it says that, “all 55 of our US plants are leak free.” That is in 2014. What does that mean?

**Mike Annacone:**  That refers to the fuel that we provide to our customers. We make nuclear fuel that we provide to the operating utilities, and what that is about is the fuel assemblies that we made and that we ship to our customers, in those fuel assemblies, do not leak in the reactor of our customers. That is not referring to system leakage in an operating facility. Is that understandable?

**Senator Tom Young:** So, the fuel assemblies themselves are leak free?

**Mike Annacone:** That’s correct. The product we ship from our facility to our customers is leak free. It does not leak. And, that’s not about the actual day-to-day operations of the facility systems itself.

**Senator Tom Young:** So, as to these three leaks that are not fuel assemblies, but the leaks at the spiking station and the others, do we know how long they were in existence before they were discovered?

**Mike Annacone:**  I can’t speak to the 2000. . . No, I don’t know the details currently on the history of the 2008 and 2011 leaks, but we have people who are actively, as I said earlier, reviewing the leak history of the plant to make sure we fully understand that in today’s standards, and that we are confident that we are taking the appropriate actions to mitigate them before they challenge public safety. In terms of the spiking station, we know that on the day that it was identified, it was leak-tested, the liner itself was leak-tested back in March of this year, and there was no leakage on that monitor back in March of this year, and we know that three times a day, each shift, 1st shift, 2nd shift, 3rd shift, my operators check the dike for evidence of liquid, and there was no evidence of liquid in that liner from March 2018 until the day the leak was discovered in June. So, I believe I know that history, but I can’t speak to the history of 2008, 2011.

**Senator Tom Young**: So, does your company know how much material was actually released from the three leaks into the environment?

**Mike Annacone:** We can only characterize it in the context of soil contamination and groundwater. We do get asked the question from the spiking station “how many gallons have leaked?” Here’s what we know about that. We expect it to be small based on several factors. But I will not ever really know the exact gallons, maybe two, three, five. We expect that it’s very small based on what I just described to you; we inspect that liner three times a day. There was no evidence of leaks in it. At the time that the leak was found, it was drained and refilled, and we did a leak test at that point. So, we suspect that the amount of leakage is small in the few gallons range from the spiking station and based on the results of the soil sampling plan that we put together that was reviewed by DHEC, that data backs up that it was not a significant amount of liquid. But I want to be clear, to the point of appropriate comments made, any leakage is not okay. So, while it may be small, it’s still not acceptable, our goal must be to prevent leaks in the first place and it if does happen, to prevent its spread. In terms of the contaminated wastewater lines, I don’t know currently that’s why we are working on the wells that we did, so we could get additional soil samples and additional groundwater samples, so we could put more context around what problem may have occurred, and then based on that develop an appropriate remediation strategy. But, I can’t quantify those legacy leaks at this point.

**Senator Tom Young:** You added more wells this year. And one leak was ten years ago, and another was seven years ago. Is that right?

**Mike Annacone:** Right. And those existing wells that are in the general area downstream of the flow around the area where those pipes are, and none of the permanently installed wells that are further away have shown any signs of uranium contamination increase. These wells that we’re drilling are to get more data local to find out where those leaks were, so we can have a better understanding.

**Senator Tom Young:** I understood from your presentation that you will have a strategy developed by November 30th? So that strategy will be to address these leaks?

**Mike Annacone:** Correct. They’re the 2008, 2011 leaks.

**Senator Tom Young:** If you have a strategy by November 30th, are you going to understand the extent of the impact of the three leaks from the spiking station?

**Mike Annacone:** We’ll have the understanding with respect to the contents of the soil and the groundwater, and then from what we currently know, we will then look at what additional work we might need to do to gain more information around our soil and ground water distribution to develop an appropriate remediation plan other than just watch.

**Senator Tom Young:** And who will you provide that new information to DHEC?

**Mike Annacone:** DHEC. That’s correct. All this work that we are doing is done in conjunction with required mandatory oversight and approval by DHEC. And we are using independent experts checking groundwater, monitoring remediation, to help us assess this and come up with appropriate remediation strategies. So, it’s experts that we hire to help us understand and then DHEC to review and approve.

**Rick Lee:** Alright, one question.

**Representative Sylleste Davis:** Thank you. Really quick question, I believe. Have any of these leaks so far affected production, and will any of the remediation efforts affect production going into it?

**Mike Annacone:** At this point, no. I can’t answer the question on a going forward basis because we need to develop remediation strategies, but we will take whatever appropriate actions we need to take to remediate the issue and if that necessary remediation requires an impact on production, then we’ll account for that and deal with it. First and most importantly, we need to take the appropriate remediation actions to protect local health and safety. And then we will deal with whatever impact it has on production.

**Carolyn Hudson:**  One quick question, I hear there’s a Superfund site near your pond**,** has that affected you in any way?

**Mike Annacone:** So, the answer to your question is “yes,” directly across the street from my facility is a Superfund site, and “no,” it is not impacting my operation.

**Dr. Vincent VanBrunt:** You say you’ve established a Citizens Advisory Board and there are certainly several nuclear fuel fabricators. Do they have CAB’s?

**Mike Annacone:** I know that internal to my company, yes. In fact, we’re benchmarking our Springfield facility that has that. I also know that there are other facilities that are not necessarily fuel fab facilities but are in my kind of business of fuel cycle, and they have these kinds of advisory groups, so that’s what we’re benchmarking. In terms of my direct peers, I haven’t benchmarked them yet, but the concepts are in place.

**Dr. Vincent VanBrunt:** I’m talking in particular, to fuel fabrication and whether someone is using the processes or something else. The question becomes, is there any talking between you and any of the other fuel fabricators in terms of communication of impurities as well as addressing environmental issues.

**Mike Annacone:** So, in terms of addressing environmental issues, I can answer “yes.” There is routine engagement, and some of it is done as hosted by the Nuclear Regulatory Commission in what’s called a fuel-cycle initiated exchange where we do share operating experience that’s not commercial related, not business related. Its more safety related. In fact, I’ve been to a couple of those events, and I presented the lessons learned from S-1030 Scrubber event to the environmental issues. So, yes, we do share those experiences. I personally have not asked the question about the Community Advisory Board at this facility. I’ll go back, and I’ll find out and we certainly will be glad to share with them what we are doing in this arena if they are not.

**Rick Lee:** Okay, a couple items and I’m going to close the floor. One, I’d like to request that at some point we organize a visit from DHEC, and whether it’s a visit or a meeting and a visit, we can work that out. Secondly, for myself, I’m not so focused as some others are on the technical aspects of this but more so on the fact that you lost touch with the community. I saw on television the videos of the upset neighbors; I’ve studied all of that and I understand. I never have quite understood how you lost that focus. But, this is a hot issue in South Carolina right now, and I encourage you, please, pull the public in, full disclosure, full transparency as you’ve done today. And, I keep my fingers crossed that by the time we meet with you next that we will hear that the public is deeply involved and that they’re on board and they know what’s happening. So, anything else?

**Senator Tom Young:** I suggest that you add the legislators to that to that communications list.

**Rick Lee:** Yes, keep Senator Young informed. He’s our contact at the Senate, and I’m sure he’d be glad to have any communications that come your way. So, again, I want to thank you so much. You came all the way down from Pennsylvania, didn’t you? So, we appreciate you taking the time for the trip. I look forward to improvements for the citizens of South Carolina.

**Rick Lee:** Okay, Shelly. Ms. Wilson is a representative from DHEC. She is the federal liaison; she has been with us a long, long time. Probably not many people know that she is a graduate of the University of South Carolina. Go Gamecocks. And, that she’s an engineer as well. But I thought perhaps that you would come with a little black armband on today considering the football season. But I don’t see one so maybe you’re not a football fan.

**Shelly Wilson:**  No, I tell the fans in my family to stop paying attention and then they won’t be disappointed. Thank you, Chairman Lee, it’s great to be here with you all today. To all the members of the Council and all my fellow engineers in training, I’m happy to be here with you all today. For the South Carolina Department of Health and Environmental Control, first I’d like to give you a little bit of an update of what we’ve been doing in terms of the storms. We’ve been a part of Team South Carolina that was really led by Governor McMaster and as part of that, Florence and Michael, our DHEC agency dispatched over 700 people around the state; we fielded over 8,400 calls coming in where people had questions about how do I get the right medical help? What do I do about testing my private well that might have been flooded over by the waters? We worked with 131 regulated health care facilities in the medical evacuation zones, including 17 hospitals, to evacuate over 6,000 patients and caregivers. We also opened and staffed 14 special medical needs shelters. That’s where people didn’t need to be in the hospital, but they were a little too sick to be at home, so they were at those shelters. We also dispatched our woman/infant care mobile clinic and helped with those resources and vaccines for over 260 people in the affected areas. We waived bacteria testing fees for private wells in flood affected areas.And, we also assessed 262 dams prior to the storm for potential impact. So, a lot of work, pretty much all of September for our agency, much of it was focused on the storm on protection of the State and helping Team South Carolina make sure that we were as prepared and as safe as possible, as we could be.

So, to turn now and focus on the Savannah River Site, I’d just like to give you a high-level overview of the things that we regulate at my agency. There’s been a lot of progress in those areas so, namely, soil and groundwater contamination. At Savannah River Site, it started off with a little over 500 areas at the site that had contamination that needed to be assessed, and potentially cleaned up. And so, as of today, we’ve made progress at 81% of all those sites, so a lot of those now have a cleanup that is active and on-going through soil and groundwater at SRS. One of the big areas that just recently was finished was the D-Area Ash basin project. And that’s an old coal plant that produced a lot of ash, it was 1.3 million cubic yards of ash and soil, and the fix for that was to consolidate it all into a smaller area, and now there’s a composite cap to cover that soil and ash to protect it from rainwater so there won’t be as much infiltration from the rain into the area. That’s a big success; it’s finally finishing that cleanup. But, one of the key things that we’ve had is really to enable a lot of progress in soil and groundwater cleanup is at SRS is our Core Team Process. When I say Core Team, we basically had a team of our technical people at DHEC, some from the Department of Energy, and from the Environmental Protection Agency. And, we put all those people together and we trained them on how to get to protective cleanup as quickly and as efficiently as possible. We do the same type of core team cleanup at any of our Department of Defense sites, and if you remember the Charleston Naval Complex underwent a base realignment enclosure, some years ago, we contributed to cleanup of that site in ten years. And we did that with our Core Team process to go as efficiently and quickly to get to protection as possible so that site could be turned over to the community for a beneficial re-use for those residents. Again, the Core Team process is something that we invest heavily in because we get to protection faster. We use it a lot in South Carolina, and recently that idea has been exported as a success story for other parts of the nation. And that was really though the Environmental Management Advisory Board, and if you’re not familiar with that, it is a Board of various people, that are appointed by the Secretary of Energy, and I actually served on that Board, but the Board recently made a recommendation on September 11th to export that Core Team Cleanup Process that has been so successful in South Carolina to export it and to try it as a pilot project in Washington State. So, it’s good to know in South Carolina we have some best practices for cleanup and we’re being recognized nationally and recommended for other parts of the nation.

One other highlight I’d like to mention to you is that, of course at our agency we focus a lot on high level waste cleanup since the Savannah River Site has about 35 million gallons of liquid waste there in tanks that are aging and degrading. That liquid waste is both radioactive and toxic, and so we have a high focus on that waste getting treated and the tanks closed in a timely manner. One of the things that we actually won back in 2016 was the addition of a new treatment capacity. It’s called the Tank Cesium Closure Removal, or TCCR for short, and so the site has been busy putting that in place. We’re very pleased that that TCCR process, which again is more treatment to get rid of that waste faster. Looking towards the end of this year or early next year to start up that TCCR process.

And the last thing I just wanted to mention is that DOE has requested some comments on a national level and on a federal register recently asking for comment on its interpretation of the statutory term “High Level Radioactive Waste.” Our agency is looking at that to put some responsive comments together to the DOE. If you’re interested in that process, the comment period closes on December 10th. That’s all I have for you today; if you have any questions.

**Rick Lee:** Any questions folks? I have a question about the reclassification of the high-level waste. What’s the purpose of the effort? Is it to be able to take more materials for the WIPP or for burial?

**Shelley Wilson**: Yes. The idea behind it is why classify something based on its provenance, or how it’s made, but rather to look at the actual, technical characteristics of the waste, and if there’s some waste that’s better suited to go to WIPP or even to low-level disposal, why not save money and put it there rather than stick to the high-level waste because that’s how it was born?

**Rick Lee**: If it was low-level, the Department would be eligible for receiving them?

**Shelly Wilson**: Yes, sir. A good question, one that we’ve already, I had a meeting this morning about it.

**Representative Sylleste Davis:** One more question, sort of related to that, is that change in definition in federal law translate into, how does that impact state law? Is somebody looking at that?

**Shelly Wilson:**  Yes, exactly, that’s a key question. So, the federal register does not propose a change to law. So, it’s DOE’s reinterpretation of the Nuclear Waste Policy Act. So, for example, our Senator Graham helped to pass Section 3116 of the of the 2005 National Defense Authorization Act which is law and which gives us a strong state voice in residual high-level wastes and how they’re managed and so through our comments we’ll be seeking to confirm that their interpretation doesn’t change that federal law that helps protect us in South Carolina that is already is already existing.

**Rick Lee:** Have you taken a position yet on it? Or are you still studying it to submit comments.

**Shelly Wilson**: Still studying it.

**Rick Lee:** When you finish the comments, would you be kind enough to send a copy to us, so we can have a look at it?

**Shelly Wilson**: Yes. Absolutely.

**Rick Lee:** I certainly would appreciate it; I’m sure it would be interesting reading. I think that’s all. Thank you very much. As always, it’s a pleasure. Stuart MacVean will not be able to be here, he had other commitments that came up, so we’ll move on to Mike Budney with the Savannah River Site. I would like to welcome Mike, this is his first visit with us, and I hope it’s at least not too painful.

**Mike Budney:**  Thank you for having me. I’m glad to be here.

The first thing I’d like to note is that we have a lot of students here studying nuclear engineering, and there are many, many internship opportunities at the SRS, both with the DOE and our contractors. We had 200+ interns there this summer. The application period is normally from November-January, if you’re looking for something to do next summer, we certainly are interested in having you.

**Rick Lee:** If I could ask, if Dr. Danjaji could have the point of contact information and what have you, he can disseminate it to the students.

**Mike Budney:**  Yes, I’ll get with Dr. Danjaji and get that information.

First nuclear stuff, road repair, stuff that is pretty mundane, but the SRS has a lot of roadway issues. We’ve seen a lot of infrastructure with roads starting to deteriorate; it’s been about 20 years since we did road resurfacing. We started last year I think, we have a multi-year plan; it includes steps to re-paving and we’ve taken on that project a lot of the work done, we did the main road coming in from New Ellington last year, we did the F Road, that went up too many of our facilities, working on C Road now, down main arteries to get into the infrastructure. And we had to beef up the roads, and that created a problem in many areas you might think 9000 tons of debris that would go to the landfill, but we did not do that, we used that material and took it out to some of the auxiliary roads that feed, that get us to our security roads. And we used it to repave those roads rather than sending the material to a landfill, so it’s a great job by our contractor up there.

In regards to our contracts, our maintenance operating contract that big M&O contract at SRS, we’ve put out a draft proposal back in December, I’m sorry, in August, we put out the draft RFP, and about the same time we did a study with the NNSA about the future of the site and who’s going to be responsible for what and what manner of activities and how we’re going to manage that. As we were going along in that study we realized it would have some ramifications for how we write that contract, so we’ve postponed the draft RFP, we’ve postponed the RFP for the M&O contract until we get a little further along in that study, so we expect that in early 2019 it will be resolved and we’ll be in business to solicitate. That contract with SRS we have currently has been extended through July of next year.

I think there’s probably a lot of interest in the liquid waste contract; we’re starting the final stages to sort that out based on the proposals that were submitted post-protest, so I would say that that contract is going to be issued soon, but it depends on your definition of soon, and I’m not going to define that here. Someday soon.

**Rick Lee:** So, the solution that they had to the dilemma of the protest, they did a correction in the RFP and re-issued? Or what was the process?

**Mike Budney:** I think they just re-submitted? They didn’t need to re-do the RFP?

**Comment:** (unknown speaker): We did adjust the RFP and the proposers had the opportunity to submit a revised proposal. Where we are now, we are through; our advisers are looking at the proposals and approaching the point of naming one of them.

**Rick Lee**: A lot of people holding their breath on that one.

**Mike Budney:** Our Security contract also expires next October, so we’re developing the draft Request for Proposals for that also. So, we’ll solicit for that.

In terms of the budget, we did get a budget approved that was in place by October 1st this year, that was exciting for us. And, we did get an increase, compared to last year, by about $800,000, which is good news, so we’ve got a lot of work we can get done with that, and so we’re off working to deal with that.

**Jim Little:** Mike, can you share with the audience what the size of the budget is at Savannah River?

**Mike Budney:** $1.39 billion dollars for EM (Environmental Management), and about $660 million for NNSA, so it’s a little over, so it’s a little over $2 billion dollars. The fiscal year 20 budget is in process which needed our input, it’s working through the department.

Program areas and nuclear materials, we’re currently processing for the first time through H-Chain three different sources of material: the High Flux Isotope Reactor Cores from Oakridge, we’re prepared to move them for storage; the Material Test Reactor, the stuff that we have in the L-Basin and the target the residue material which is Cove Canyon, three different forms and going all three forms , great work by that team over there. Took a while to get through it.

We’re also working, in nuclear terms, we’re also working on the plutonium material; we have processed about ten cans, doing the dilute and dispose. We have supported for a while NNSA’s efforts to re-designate some of the material to take out of state.

In liquid waste, the defense waste process facility was in an outage for replacement and that’s been brought back up, and we’ve processed 15 cannisters we’ve recovered from that hydrogen. The modular caustic side solvent extraction system is in an outage right now. We had process about 120,000 gallons of material within 18; currently we have a problem with strip cut through pull bus.It’s been fogging up. We have the lab engaged with that to try and figure out what the source of that material is and what’s causing that thing to fog up. I’ve got a meeting with them tomorrow to see where they are, if they’re able to sort out what’s going on there.

The 3-H Evaporator, we had to conduct some repairs that brought it up found another leak; had to shut it down and then did some analysis, had to figure out how to get that thing restarted so it is back up and in operating form, as we anticipated.

As Shelley mentioned, we have installed the TCCR (Tank Closure Cesium Removal) system which is a big ION exchanger which will remove the Cesium from the waste, and we expect to start operating that thing in January.

True waste, we did make a shipment of true waste in August; we’re still on track to move true waste out for good.

The salt system disposing units, six of course is done, and we’ve started putting material into that. That is beautiful. Seven has been excavated and the mud mat laid down, so we’re making progress there too. The Salt Waste Processing Facility, we still plan to get that project done within the original scheduling costs. We did have a problem with the electronic valve controllers; we needed to replace about 460 of those, and they’re about 94% completed. They were very prudent in working to get those things in, get them replaced, so great progress there. We’re also constructing a Next Generation Solvent Facility which will help us treat that material much faster and help us get to our objective, what we work with DHEC closely on, the pipeline and the milestones to get that waste out of these things. That is my number one focus in the Department of Management Team.

Shelley did mention that the D-Ash area which is a big project. On October 6th, SRS was awarded a Project Management Institute Award for project excellence for that project, which, you may not hear this very often, but the project was done ahead of schedule without any problem. We’re proud of that operation. And that also results in about $7 million dollars in cost avoidance for everyone.

Over at the lab, they’ve established a collegiate affiliate program with the University of South Carolina-Aiken. This will allow retirees to teach courses, labs, mentor young scientists, guest lecturers and assist with type of science education stuff. We’ve also licensed a Hydrogen Isotope Separation Technology to Greenway Energy for use in a commercial laboratory nuclear type radiography system.

We’re proud of the lab; they invented this stuff back in 1980, and it takes a long time to file an application for these things when you do R&E, but great item and they got licensed. We did have a safety pause at the lab. That was caused by the fact that we had, as you mentioned, several unrelated small events, but it just kept piling up and we said, something’s not quite right with the way we’re doing business there. The lab director, not DOE, called the safety pause, they developed some extra management activities to keep track of the exposed rock; put the lab backup section by section to make sure they were doing business right, and then they established a Quality Control program to monitor the program as it goes down the line to sure there’s a steady effort going forward.

These weren’t nuclear issues. They were some things improperly stored, some ventilation issues at the facility, somebody removing some volatile material in a private car. Very small amount, you know, just that a new employee didn’t recognize the rule, you know, so that kind of stuff just piled up and we had to take some action to get that under control.

I am hesitant to say that a couple of this year’s fiduciary issues with the budget, we got taxes squared away. FY ‘18 Budget, or ‘19 Budget, we’re in good shape there. We do have one issue we’re working hard with the lab. So, H-Canyon is where we do all this chemical separation. Well, first, there’s a federal law that requires us to maintain a stable environment for the operation. It’s in Title 50 of the US Code. And so, because of the law, there’s not yet a defined instinct for that process. We’ve got to make sure we continue to operate until Congress decides. Well, it has an exhaust system which keeps the plant at a negative pressure so if there’s a problem, air flows into the plant, so that’s what’s going on. That exhaust is filtered, and it comes through a big underground tunnel. Well, the plant is operated using a nitric acid, and that has deteriorated some of the concrete in the tunnel, underneath the ground. Now, it’s still very stable, it’s still doing its job, but as we don’t know the end state or the timing for the canyon in the end, we must go down there and analyze how much life does that tunnel have left.

**Mike Budney:** That’s very complicated. Because it’s all based on frequency, end use and we’re concerned about seismic activity. Very complicated long procedure to do the analysis and figure things out.

And that is what I have subject to any of your questions.

**Captain Cross:** You mentioned the Salt Waste Plant was going to come on schedule as far as money is concerned, how about operating expenses, how does that effect startup?

**Mike Budney:** We had in the contract an objective of starting up this December but that was an early date, we incentivized the contractor to get to that date. A combination of things, and the big one being the developer [inaudible] delayed that. The contract was given us a new proposal we’re looking at right now and, so, we don’t want to say exactly the date because we must get back fully with the contractors, but the original program date is January of 2021; we’ll be way ahead of that.

Any other questions?

**Dr. Danjaji:** You have your program in place for internships, [inaudible].

**Mike Budney**: We do have interns that come there on a repeat basis. If you’d like more information, I mean, an objective would be to find people to hire, I would say that for sure.

**Tom Johnson**: So, they offer the opportunity for repeat internship and on the contractor’s side we have a high hiring rate for those that serve internships. We have, if you’re invited to come back, there’s a high probability of being offered an opportunity for employment. If you’re not invited back, that’s also a good message to you. You’re not likely to be offered employment. The other good thing is that over the last couple of years, over on the SRS side, they’ve hired 500 plus over the last year. We have, total site is almost 12,000, and we have several folks that are either already retirement eligible or coming up on, or becoming eligible or approaching retirement, so there’s a need for turnover folks there on the site. I encourage you folks to get involved. One of the easiest ways to get involved is to go through the internship program. Sometimes it’s a great fit, sometimes it’s not but you can use that experience to make entryways. The Savannah River site may be the place for you; it may not be the place for you, but you can use that experience.

**Rick Lee**: So, I only have one question, and that is, the plutonium that you’re reclassifying, was that formerly MOX plutonium?

**Nicole Nelson-Jean:** I’m sorry, I didn’t hear the question.

**Rick Lee:** He had indicated that there had been some reclassification of plutonium at the site, and I was asking if that was part of what was originally MOX surplus classified plutonium.

**Nicole Nelson-Jean**: No.

**Rick Lee:** That’s it, I don’t think I have anything else. You’ve been very kind; we appreciate it. Thank you.

**Rick Lee:** Alright, next up, Nicole. This is Nicole Nelson Jean, NNSA Manager for Savannah River.

**Nicole Nelson-Jean:** Hello. First, let me say thank you very much for letting me speak to you all again. I look forward to the discussion today. I am especially excited to see so many students here today because I am a fellow graduate from a historically black college, but I am a Grambling Tiger. So, it’s wonderful to see you all here, and to echo what Mr. Lee said, that we need you. And, it’s exciting to see you in your field here and interested, not only at the Savannah River site, but the Department of Energy and NNSA has sites all over the country. We even have opportunities overseas within the department and within NNSA. So, with that, I would like to give just a little bit of information about the National Nuclear Security Administration for the students here.

I usually talk about our three missions, but I’ll talk about our four primary missions within NNSA. One is we manage our nuclear weapons stockpile within NNSA. We also work with our global, reducing global nuclear threats through our non-proliferation activities. Then we have our Naval connection, which we work with the US Nuclear Navy, and fourth, and this is bad because sometimes I don’t mention it, we’re also responsible for any nuclear radiological emergencies anywhere in the world and the United States that we support all over the world. That’s very important for what we do. And, what’s amazing, you’ll find that the Savannah River Site, I talk about this quite a bit, has been a site supporting our defense mission for many generations, and you’ll find on the site, multiple generations that work there. My father worked at Savannah River site. I would have never thought that I would be there so many years later, but I am, so you’ll find that when you come to the site, you’ll meet so many people whose fathers and grandfathers also worked at Savannah River, so it’s a wonderful, wonderful place to be.

So, I will start my points today we’ll talk a little bit about the overall NNSA budget, some of our Tritium activities, including our FY 2019 budget, some high points on our accomplishments and our path forward. I’ll also talk about some of our plutonium activities on the site, and what’s happening now. So, for FY ‘19, we’re very happy as Mike said, it’s been I think 20 years since a budget was actually completed by October 1st. So, we almost didn’t know how to act! I mean, seriously, we had to figure out how to get the money to all our sites and all our facilities. This hasn’t happened in years, so it was quite interesting. But, we’re very excited at NNSA. We were looking at, we requested and received a $15.1 billion-dollar budget, an increase of $2.2 billion dollars. That includes $11.1 billion dollars for our overall weapons activities, and $1.9 billion dollars for defense nuclear non-proliferation activities. And, of course, our Naval Reactors activity and our emergency response activity are also under there as well.

For Savannah River site specifically, we are looking at overall spending of about $3 billion dollars at the SRS specifically over the next five years. Within tritium specifically, we received about a $290 million-dollars within our tritium scope, and I will talk a little bit about our tritium activity. First, let me back up. We have three primary, strategic materials within our nuclear stockpile activities; lithium, tritium, and plutonium. Those are the three that we primarily work with. At Savannah River, we primarily focused on the tritium for many, many years. There was a plutonium mission several years ago, while we now have a plutonium mission coming back to Savannah River. That’s exciting, I’ll talk a little bit about that. But first, on the tritium. We have five primary mission areas within tritium; our tritium supply where we recycle tritium reservoirs from our nuclear stockpile, and we also have tritium that we take from regular fuel lines that we irradiate from TVA. Our second primary mission is our stockpile maintenance activities, where we replenish tritium gas from our transfer system to support our limited life components. Tritium, half-life of tritium? Help me out. 12 years, 10 years? Anybody know? All these engineers in the room? 12.5 years. So, we must change out our overall stockpile with our tritium gas model so that’s also our responsibility within our tritium plant. We also do stockpile evaluation. Each year we must certify that our stockpile is effective; we participate in that activity at the Savannah River site specifically our tritium gas transfer systems. So, we’re responsible for that as well. There’s a research and development portion of what we do; we work very closely with Savannah River National Laboratory. We have a huge benefit of having the laboratory right there on site with us. We have people from Savannah River National Laboratory that sit with us within the tritium plant and work directly with us, so we’re excited about that, and it’s a huge benefit for us. And then, lastly, is our Helium-3 recovery. Helium-3 is a decay bi-product from our activities in the Tritium plant, and we use Helium-3 for some of our science activities within the Department and other government agencies. So, we try to capture as much Helium-3 as possible. So, those are our five primary missions. So, we’ve had quite a few accomplishments this past year within Tritium. We’ve had 99% on-time safe, secure delivery for Tritium this last year. We’ve also completed two Tritium extractions. Prior to last year, we had three Tritium extractions. We had only done one extraction for several years prior to that. So, we are consistently moving up with our overall extractions of our Tritium run to receive more Tritium. And we’ve also had major improvements in our training, in our knowledge preservations, and our procedures. Knowledge preservation is very important because, as was mentioned, many of the folks that work at the site are kind of, let’s say, long in the tooth. So, we are very interested, and again, why I’m so excited to see you here today. So, we’re looking at hiring and bringing a lot more people, not only into Tritium, but also into our Plutonium work.

So, our path forward; we’re going to continue plans to execute for increased production. In the coming years, we’re going to have increased production of Tritium to support our stockpile and other activities that we have going on with Department of Defense, so we will be moving and operating the plant at a pace that it’s never seen before. So, we are getting ready for that through procedures, hiring, and several different activities within Tritium. We’ve also executed initiatives to drive down our overall maintenance back log and support our infrastructure. Unfortunately, many of our facilities within Tritium are over 50 years old so we’re having to replace some of the infrastructure and do a lot of work to those facilities to ensure that operate as they should operate, particularly since we are going into increased production. So, that’s primarily what’s been going on in Tritium over the last year.

So, on plutonium, plutonium sustainment for FY ’19, we’re looking at about $95 million dollars. $95 million dollars is going directly, that’s about half of the plutonium sustainment budget, that’s going directly towards our 50 pits per year mission at Savannah River Site. In May of 2018, it was announced that it was a recommended alternative for us to produce 80 pits per year as a commitment to our Department of Defense colleagues. The pit is a primary component of our nuclear weapons stockpile. The Department of Defense certified a two-site approach, just to back up a little bit for the students. Currently, production of pits is done at one site, in Los Alamos, and that’s where I started. My career was at Los Alamos National Laboratory. Los Alamos National Laboratory is the location where pit production currently exists. So, a two-site approach was approved and certified by the Department of Defense in May of 2018 where we would build another plutonium pit production plant here in South Carolina, so that’s the effort that’s currently going on now.

Estimated hiring at Savannah River site will ramp up to support the pit mission and other missions within the Savannah River site. So, I’m going to talk a little bit now about the facility that we would like to recapitalize and re-purpose for pit production activities. And that’s called the MOX facility. You heard the Governor speak a little bit about it earlier this morning. So, following the October 9th ruling by the 4th District Court, the 4th Circuit of Appeals granted a stay of the injunction. There was an injunction that was put on our efforts for this plant; that was lifted on October 9th. NNSA delivered an official notice of contract termination to the MOX project contractors on October 10th. I must read this because the lawyers will be very upset if I don’t say exactly what’s on this card. The notices of continuation of NNSA’s action following the certification submitted to Congress by the Secretary of Energy in May of 2018, and the partial stop work order that began the contract termination process. So, we’re committed to working with the current workforce to mitigate any actions that happen from the termination and our startup of MOX. We’re meeting with MOX services and having a planning discussion with them to ensure that we can support the current workforce, local staff and workforce that are there. Transition from the MOX project will allow NNSA to move forward with the two-pronged approach to re-capitalize US Defense plutonium capability that includes repurposing MOX. This approach is fully supported by the Department of Defense. This is necessary for our nuclear posture review that was issued in 2018 for us to do what we need to do for our nation’s security.

The need for a skilled workforce at the site will increase along with new employment additions, including PIT production. For example, PIT production is estimated at 2150 staff to include 1400 non-manual staff and 750 trade-craft staff. In contrast, MOX construction took approximately 1600-1800 on-site to include 1000 non-manual staff and 600 trade-craft. Once manufacturing 50 PITS per year at Savannah River site, we’ll require more than 700 people or staff over a period of 50 years. So, you’re looking beyond 2084 for our overall activity. MOX was estimated to be 800-1000 jobs in production where PIT production is approximately 700 jobs for the production activities and then for the D and D, nearly 300 people. We are making significant progress on conceptual design, and we’re working to identify every efficient, so we can work as quickly as possible. Restoring the United States capability to produce PITS is a priority for the Dept of Energy, for the NNSA, and particularly our colleagues, our customers, and our partner, the Dept of Defense.

So, with this new mission comes several requirements, that have been laid upon the Dept of Defense and NNSA. With the signing of the National Defense Authorization Act, there are several reports and requirements that we must complete; the Dept. of Defense has to write a contract with a federally funded research and development center to evaluate production at Las Alamos; there must be a briefing to Congress by my boss, Administrator Lisa Gordon-Hagerty, who is also the Undersecretary of Nuclear Security, and Nuclear Weapons Council Chair. She also must brief Congress on this activity by March 1st of 2019. We also have a manual certification that we must do of this activity in Congress, every year, starting in April 2019, and through 2025. So that must be done. We have another annual report requirement to the Health Armed Services Committee, and finally the Senate Energy and Water Committee have a requirement for NNSA to also to contract with federally funded research and development center for our PIT production activities.

But, we’ve had some great accomplishments so far in out PIT production activity and working toward what we need to do at Savannah River site to make a 50 PIT per year production activity work, along with the activity of Las Alamos to produce 30 PITS per year. There was a workshop Oct. 2nd-4th where we brought over 120 engineers, subject matter experts, and people who would be involved, to Savannah River site, and we had a workshop. There was a similar workshop in Las Alamos where we wanted to come together to talk about how we were going to accomplish this mission together. And it was very, very successful, and we were very happy to have it here at Savannah River.

So, our path forward. We will continue our critical decision process for the plant. We really want to start our initiation of working with the local community, universities and colleges because the pipe line must start now. There’s so many different jobs and individuals that we need with expertise to make this work. So, we would like to start that pipeline now so that individuals can be ready by the time this plant is up and running, and that takes time. So, we would like to start that interaction and discussions with the community now. And, we want to get staffing facilities and infrastructure to support PIT production and our Tritium activities. As I mentioned, we will have increased production over the next several years and we need support for, staff to support for those activities. So, in closing, thank you again for the opportunity to speak to you, and again I’m very excited to see so many students in the audience.

**Jim Little:** Nicole, is there a NEPA (National Environments Policy Act) process, with the discussion of SRS and MOX?

**Nicole Nelson-Jean:** Yes, there is a NEPA process. We have, through the workshop, we have 15 working groups working together to make not only the Las Alamos, but the SRS PIT production activity happen, and we do have to go through a NEPA process. And that working group is working on that also.

**Jim Little:**  My second question was related to Tritium. Sometime a few months ago, there was some rumblings about the practicality of Tritium [inaudible].

**Nelson-Jean**: So, this comes back to what Mike mentioned about the futures activity of understanding what is going to happen at the site and the overall NNSA mission. My boss, Administrator Lisa Gordon, Head of Security, was looking at options if we couldn’t proceed with our overall activities at SRS. At this point, the injunction’s been lifted; we’re continuing with our activities so that’s an option, but I don’t think it’s something we’re going to move forward with.

**Jim Little:** The Tritium threat is gone.

**Rick Lee:** We saw that a little, but if MOX is going away, we’re thrilled to have PIT production come to Savannah River and glad we didn’t come to blows over what she was talking about in that letter.

**Representative Sylleste Davis:** I did have one question, you mentioned Lithium as part of your mission, but I didn’t hear your explanation of that.

**Nicole Nelson-Jean:** It’s just one of our strategic materials for our nuclear stockpile that we currently have an effort towards within our strategic materials office. And I just mentioned it to say that, of the three strategic materials, Savannah River would have two.

**Representative Sylleste Davis**: So, Savannah River does not do anything with Lithium.

**Nicole Nelson-Jean**: No.

**Dr. Vincent Van Brunt:** Is the Lithium a bridge?

**Nicole Nelson-Jean:** Yes.

**Senator Tom Young**:I’ve got questions. First, the Tritium mission, tell me again what’s going on with that.

**Nicole Nelson-Jean:** We’re going to have to have an increased production period. Overall, it’s been planned for 10 or 15 years, it’s not new. We’re just going into a period that we’re going to be doing more extractions than we’ve ever done before. As I mentioned previously, we are doing right now one per year, and we skip a year and then did one per year. Then last year we did three and this year we did two. We’ll do more in the future going all the way up to the facilities capabilities.

**Senator Tom Young:** So, the Tritium mission is going to continue at Savannah River?

**Nicole Nelson-Jean**: As of plans right now.

**Senator Tom Young**: Okay, as for PITS, I heard you say it’s 50 years and 700 jobs? Is that correct? And that would start when? Did you say 2025?

**Nicole Nelson-Jean:** The production, yes. That would start when the CD-4 is completed. CD-4 is estimated to be completed 2026 and 2028. I’ll get that information for you. 2030 is when the 50 PITS per year must be complete. So, the facility must be done well before that. Our commitment is 50 PITS per year by 2050. That’s our commitment.

**Rick Lee:** Can you go more than 50? Will the facility have the capacity to go beyond 50 PITS?

**Nelson-Jean:** 2030, I’m sorry, 2030. Right now, we’re focused on our commitment. Just like we have a commitment for our Tritium

**Dr. Danjaji:** How many PITS are you expecting in South Carolina?

**Nicole Nelson-Jean:** Over the next 20 years, the Dept of Energy and the NNSA, originally our facilities if you go with our history, our facilities operate for 50 plus years. So, for right now, our goal is to produce 50 PITS per year in South Carolina by 2030 so, beyond that, the next 20 or 30 years. It depends on the requirements that come out of the Dept of Defense.

**Senator Tom Young:** So, does that mean that the PIT mission, is that contingent on being able to use the MOX facility? In other words, if the MOX building and other infrastructure assets, are not compatible to the PIT mission, do you still do the PIT mission at SRS? Is there a contingency that the PIT mission is contingent on, using the MOX facility or portions of the MOX facility for the PIT mission? So, my question is, do you know, and maybe you don’t know, whether the infrastructure at MOX is necessary for the PIT mission to be done at SRS?

**Nelson-Jean:** Well, NNSA has a requirement to complete the 50 PITS per year mission by 2030 no matter what. So, it must be done; we’ve made that commitment already.

**Jim Little:** I guess he was saying, in terms of the schedule, is your team scheduling on the acceptability of the use of the MOX facility and if not can someone else, somewhere else?

**Nicole Nelson-Jean:** Well, we’ve already done the AOA, the analysis of alternatives and the engineering assessment. So, the Analysis of Alternatives and Engineering assessment has already determined that the recapitalization of the MOX facility is acceptable. That’s already been determined through the AOA and the EA and was certified by the Dept of Defense. So that part of it has been done.

**Rick Lee**: Alright, thank you very much. That was great Nicole. Nice job again as always. Next and our last speaker will be John Roberts and Parker Hunter, and they’re going to come from the SC Attorney General’s office and provide us information on the status of litigation where SC is suing the Dept of Energy over MOX

**John Roberts:** Good afternoon everybody. I’m John Roberts with the law firm of Willoughby and Hoefer; we have been assisting the last several years, the attorney general’s office with all MOX related litigation. Our adverse began, basically in 2014 when DOE made its first efforts to put the MOX facility in cold stand-by. That’s when we filed a lawsuit; it was ultimately settled when DOE decided not to do a cold stand-by process. Since then, there have now been three separate litigations.

**Rick Lee:** This litigation involves commitments that were made by the Dept of Energy to the State of SC, and South Carolina is trying to enforce those commitments and to close or not close the MOX.

**John Roberts:** That is correct. One lawsuit we have filed and two others I’m going to touch on as well. As Nicole just touched on, everybody is somewhat familiar with the recent 4th Circuit decision that removed the injunction by the District Court, but also two other cases pending. The other is also at the 4th Circuit Court of Appeals and that relates to the removal of plutonium from South Carolina, as well at the third case pending before the Court of Federal Claims and that relates to the economic impact assistance payments the Dept of Energy owes the state under a separate statute.

That first case, which we simply refer to as the removal claim, back in February of 2016, the Attorney General filed a lawsuit on behalf of this State in the federal district court for the District of South Carolina. Section 2566 of the US Code provides that the Dept of Energy can remove one metric ton of defense plutonium from the State by Jan. 1, 2016, if the DOE cannot process one ton of plutonium through the MOX facility by Jan. 1, 2014. This statute, 2566, was enacted in the early 2000’s when the DOE wished to bring plutonium to the State. DOE did not comply with the statute and did not remove the required one ton of plutonium from South Carolina by Jan 1, 2016, so the Attorney General sued seeking an injunction to require DOE to remove the one ton of defense plutonium.

The District Court ruled in the State’s favor and issued an injunction requiring the Dept of Energy to remove the one ton within essentially two years of the date of the order or by Dec. 31st, 2019. She also ordered that the DOE provide private reports with respect to the status of DOE’s removal efforts of that one ton of plutonium and if any obstacles arose with respect to that removal. DOE appealed this order to the 4th Circuit Court of Appeals, oral arguments were heard just last month at the beginning of September. Based on the questions from the panel at the 4th Circuit, it appears, and I hate to say it, but it appears they’re leaning in favor of the District Court’s injunction. You never know what they’re going to do, but based on their questions at the 4th Circuit, we believe that they’re going to affirm the District Court order, uphold the injunction, and still require the DOE to remove the plutonium within two years.

This summer, DOE also submitted its first progress report and said that it devoted significant resources and attention to complying with the District Court’s injunction for removal of the one ton. They also say that they believe it is possible to meet the District Court’s two-year deadline for the removal which was a slight change from their litigation position at oral argument that it would be impossible to meet the two-year deadline. They’ve now completed a supplemental analysis that’s been sent to the National Environmental Policy Act, or NEPA, which describes how they intend to remove the one ton of plutonium, and according to that document and some other statements by DOE, their plan is to remove the one ton to several different DOE facilities, Nevada, Texas, and New Mexico.

The second case that is pending, we’ll refer to as the Economic Assistance payments case. In August of 2017, the state Attorney General filed a complaint in the US Court of Federal Claims, going back to that Section 2566, in addition to requiring the removal of plutonium, that section also requires the DOE to provide $1 million dollars a day, up to $100 million dollars a year in economic and impact assistance to the state if, by Jan. 1 2016, or any year after, they’re not processing plutonium through the MOX facility or they have not removed the ton. The DOE, as everybody knows, is not processing plutonium through the MOX facility, they have not yet removed the ton of plutonium from the state, and they have not yet made any economic assistance payments. So, like I said, in August of 2017, we filed a lawsuit to collect those payments. The status of that case, we are currently waiting on a ruling, from the Court of Federal Claims. Both parties have sought summary judgments that there are only legal issues. There are not factual issues at issue, so the Court needs to decide this matter. We expect a ruling, probably in the next several weeks to several months; it’s been pending for a couple months now. We don’t believe there’ll be oral argument in that case, but regardless of whatever decision is made by the Court of Federal Claims, we do expect whatever side doesn’t come out on top to appeal to the Court of Appeals for the Federal Circuit.

**Rick Lee:** What’s the bill up to now?

**John Roberts:**  We are now up to $300 million dollars, and that will start over Jan. 1, 2019. So, the case right now specifically targets the first two years, $200 million, but given the legal arguments whatever ruling there is will apply to the next year.

The third pending case is the one everybody has most recently heard about, and the impetus for this case was, in May as Nicole mentioned, Secretary Perry issued a letter outlining his decision to terminate the MOX facility. That was out on May 10th. In that letter, he stated that several requirements that Congress had put in place to terminate the MOX facility had been met; that there be a commitment to remove plutonium from South Carolina, that there was an alternative to the MOX facility, that was half the cost of the MOX facility. Secretary Perry, I think in his May 10th letter, stated those requirements had been met. About 15 days later, on May 25th, the State filed a lawsuit, we filed a complaint as well as a motion for a preliminary injunction to prevent the DOE from disturbing the MOX facility. In that complaint we asserted that the certification and Secretary Perry’s decision was arbitrary and capricious, and that it wasn’t based on the facts or the law, and that the termination of the MOX facility violated the National Environmental Policy Act by making South Carolina essentially the permanent repository for defense plutonium.

On June 6th of this year, the District Court ruled in our favor and granted the preliminary injunction. Judge Childs at the District Court found that it was likely that the State would succeed on the merits of its claims, that Secretary Perry’s decision to terminate the MOX facility was arbitrary and capricious, and violated NEPA. DOE also appealed that decision to the 4th Circuit, and they also sought to stay the injunction which would allow them to terminate the MOX facility, and they also sought expedited consideration at the 4th Circuit Court of Appeals. Initially, the Court of Appeals denied the motion to stay the injunction but granted the expedited consideration, so on a fast track, we went to oral argument at the end of September, the same day we argued the other, the removal case. At the oral argument, the 4th Circuit Court of Appeals really focused on the legal question of standing rather than the merits of the state’s claims. Essentially the questions were, whether on this specific issue, the decision to terminate MOX is something that should be exclusively between the DOE and Congress, and not the State. We of course disagree with that and made our legal arguments against that. However, based on those questions, I believe the next day the DOE renewed their motion to stay to basically lift the injunction done by the District Court. Several days later, last week, the Court of Appeals as everyone is aware, granted their renewed motion to stay which essentially lifted the injunction and allowed the DOE to submit the termination of MOX. Unfortunately, this foreshadowed the ultimate decision most likely by the Court of Appeals that they were going to reverse the District Court we believe focused exclusively on that legal issue of standing and not the actual merits. The Attorney General has already mentioned that the State will continue to pursue all legal avenues we can, and will consider the options right now, one of which is to petition to the United States Supreme Court for review. That is all that I have. I am happy to answer any questions.

**Rick Lee:** That’s a lot of information, lot of information coming and going forward. Anybody got any questions you want to pose? So, at this point then, we still have the litigation for the payments, the economic impact payments. Is it likely that the closure of MOX, at least in your perspective, is relatively limited options, the Supreme Court or nothing? Would that be a in original jurisdiction or an appeal?

**John Roberts:** It would be an appeal from the 4th Circuit Court of Appeal’s order. We’re still looking at all the options. But, with the lawsuit, it most likely would be with the Supreme Court of Appeals.

**Rick Lee:** And what’s your position regarding getting at least one ton of plutonium out of the state?

**John Roberts**: Well we certainly made some arguments to the District Court, and the District Court’s order, she got it right. The statute is clear and based on the questions from the Court of Appeals at the 4th Circuit, we believe they are leaning towards affirming that decision.

**Representative Sylleste Davis:** Isn’t there now also outstanding litigation regarding spent nuclear fuel and the life of the national repository?

**John Roberts:** There is, but I have not been involved in any of that.

**Representative Sylleste Davis:** Was that utility specific?

**John Roberts:** That’s outside what I’ve been doing.

**Rick Lee:** Well, all the work that’s been done, I just want to convey, and I think everybody here would put our support is with appreciation to the Attorney General Wilson and the entire staff for all your efforts to defend the rights of South Carolina and the citizens of this State. We hope that, at the end of the day if the MOX ruling stands, that the Dept of Energy can do what they said they will do with Dept of Defense, and the jury is very much out at the time. Otherwise we are a permanent repository. That is what this whole thing is about is trying to avoid that issue of South Carolina becoming sort of a dumping ground.

Governor Hodge when he lied down on the road turning trucks; let’s remember that. Do you have anything else? (NO). Thank you very much; we certainly appreciate it. Thanks for coming all this way. So, Jim [Little] we’re going to skip you, we’re going to run out of time. Scott [Batson], I think he has a call he has to take so he’s probably going to step out here in a minute.

A couple of other items I wanted to touch on. The GNAC report, I did a little annual report with all the things we’ve done and I’ve circulated copies to everybody so that you could have a chance to voice your opinion on what we had there, and the listeners, I intended to put it in the record, but I’m not going to, I’m just going to give it to them, the letter for incorporation on events. Unless somebody has any comments or input, I’d like a motion to approve this and send it to the Governor. Yes, sir. [Motion carried]. It was a good year folks; we got a lot done and certainly were able to contribute I think to the Governor’s understanding of many of the issues.

Next items, MOX items, we sort of had most of the pieces of it already delivered here, but it would certainly appear the MOX project is in its last days. I know that they have been asked for about a 30-day plan for shut down, a means of collecting all the goods that belong to the property and securing the site. I would anticipate that, although I don’t know for a fact, I would anticipate that there will be some layoffs here shortly, whether its 7-8-900 people, I couldn’t say but more than likely there’ll be a crew that’s kept there for the purpose of inventory, record keeping, closeout, building security, temporary lighting, all the things that would go with trying to unwind such a massive project. It was mentioned earlier by Nicole the DOE is trying to work with people to find positions for the folks who will be adversely impacted by this. I certainly hope that they honor their promise; it would be a refreshing change for their promises to be met. And we’ll look forward to seeing some of those guys and ladies employed on-site. Anybody here have any comments they’d like to bring in with regards to this closure?

Well, I’ve spent an untold number of hours working on this thing to try to understand all the nuances of it. And it’s been quite an education for me personally to go through that. The only thing that GNAC ever really wanted with regards to the MOX was proper accounting, cost to complete, and scheduling complete. Because we did not want to have what appears to be the quickest and most likely event for getting plutonium out of our state closed. And if at some point down the road, the DoD doesn’t work, a regulatory landmine hits or something occurs of that nature, that’s really all we wanted. The Governor wanted it, the Congress wanted it, the contractor requested it, the contractor was even willing to do the contract on fixed price going forward. It appeared to me that the only people that didn’t want it was the DOE, in Washington, DC. It’s unfortunate that the decision is being made without a real recognition of actual costs.

You know, this year in the budget, there was $220 Million dollars appropriated for this project, for the MOX project. And, when you stop and look at what was appropriated, it means that they appropriate $220 million dollars, and delay the project by three years. Now, how can that be? Well, the budget requires $600 million dollars a year I think was the projection on the appropriation for required bidding, so at $220 million, it meant that we bump the numbers a couple of years. And if you look at this thing, the delays that occur, the delays that are showing in the proposed budget that the DOE advertises, where they say it takes 31 years to complete the project. The 31 years is not because of contractor efficiency; the contractor owns some of the delay, they own some of the costs, but the 31 years is reflective of underfunding the project. And it’s just like if one of us in this room wanted to build a house for a million bucks. You tell the contractor I’d like this to be constructed, here’s a million dollars, and the completion date is one year. But during that year you decide, well I’ve changed my mind, I want you to finish it, and I want you to finish it on schedule, but I’m only going to give you a dollar a year. Well, guess how many years it would take? It would be a million years. Well, it’s on a different scale with this MOX project, but it’s exactly the same thing. If you don’t fund the project with the funding that’s required to complete it, why would you be surprised that it won’t be completed on time? So, I think it’s unfortunate; the cost overruns, no question there’s been a cost overrun on the project, but if you look back to 1999 to the Rand Study, it stated in every case, when the DOE is engaged in projects that have new technology, that the price of it at least doubles. Well, that’s where the MOX project is with respect to the contract. So, I think it’s unfortunate that we never could get transparency from the NNSA on this matter. Those of you who are here, I don’t think you were here when we had Bob Raines here. Well, Raines was here, and he gave us a long speech about all the on goings, if you decide yourself and believe everything you heard or not, but that there was a solomn promise from him and he was going to provide us with information on the inflation factor that was going to be used. Unless one of you has received it, I haven’t seen it. When I was up in Washington, I asked him again, “Can I get the information on the inflation factors?” I’ve looked in here. I don’t see it. I’ve had briefings from NNSA folks about some of the decisions that have been made here in the recent past, and the long list of questions that could not be answered on the phone. “I’ll get back to you.” Well, I’m looking, and I think it just simplifies the lack of transparency that has been this case, this situation, from the beginning. I met with Deputy Secretary up in Washington, DC. It was a big meeting; I was just a little fly on the wall listening, but when the subject of the pricing and the actual cost to complete and the schedule to complete came up, the answer from the staff that was in there, was “we’re not even going to talk about it. We’re happy with our analysis, and that’s all there is to it.” So, I think it’s unfortunate we haven’t had the transparency; it might have alleviated a lot of concerns if the people just put all the numbers out that were uninfluenced by people who wanted to get a certain answer out of studies. Maybe all of this could have been resolved. You know, if the numbers had come in from an independent real cost assessment of the costs to complete, and it had been $17 billion dollars, and 31 years, there’s not a person on this Council who wouldn’t have said, “we need to get out of this.” But, unfortunately that didn’t occur, so, and I understand the people from the NNSA, and the things they’ve done to represent some of their duties of the facts to the press, that’s their mission. Somebody told them they were going to cancel this project, and they came up with a lot of big words for that purpose. What I cannot understand, is former Congressman Nick Mulvane. I cannot understand that the Congressman who was in my area wrote letters to the Dept of Energy telling them this is an essential project to meet our national obligations, this is a project of great importance. And there were repeated correspondences from him. As soon as he went to Washington, DC, he flipped off in the other direction, for what reason I cannot say. But, he seems to have forgotten he’s from South Carolina. And if he comes back for political purposes someday, I think people may be ask him some questions of “how could you do this without getting a full cost accounting of the MOX report?” As MOX moves into the sunset, I’m very happy to hear about the PIT production; it’s going to take some years before we start seeing the benefits of it, but I hope this Council will consider giving its full support to it, and if there’s any way we can help the process, I’d be more than glad to do so. Well, that’s my advice.

**Jim Little:** Well, it’s shared. My own view having watched that project. I was down in Aiken when it started. This project got off to a number of stumbles, but there was no a concerted effort by the Dept of Energy to recover from those stumbles. So, it’s not just the business of contractors, and there’s a lot of blame being placed, and deservedly so, but rather than fix the blame, fix the problem. So, there were some problems from the start; there was a decided shift, but in the previous administration who thought, hey, we don’t like this plutonium deal, let’s find a reason to pack up, just be straight up about it, and say that’s what you’re going to do. But, it was all manipulated in my personal opinion to kind of cast it as, hey, it’s a bad project; we’re going to let the contractor people take the blame, and we’re going to do something else. Well that’s fine, but let’s just let us know, not in a sense, kind of weave answers here. That’s what I found, so I agree with what he said.

**Captain Cross:** What’s going to happen down there? Cause we don’t have the security down there, what’s going to happen? The only other alternative would be to send it to Yucca Mountain, at least you’d have a place that was secure.

**Rick Lee:** The thing that’s always difficult in a long-term project is the fact that administrations change. When you have a project that’s going to take 10-20 years to do, you have 4 different or 5 different presidential administrations, and they don’t all come in with the same idea. Governor McMaster Is a good example, $15 billion dollars spent, and they have 5 lbs. of waste input. Or the super collider in Texas; if Secretary Perry was here I’d ask him, well how’d that work out for Texas? So, all these projects have had administration changes, priorities change, the budget becomes more critical, so I have my fingers crossed on PITS that it’s going to make progress.

So, I think we had one or two other minor items. That was the 2018-2019 GNAC planning; if anybody has any suggestions on what we might want to focus on next year, it’d be a good time to pose those ideas.

**Captain Cross:** Westinghouse.

**Rick Lee:** We have a follow up with Westinghouse. How about the low-level landfill? I don’t know if we’ve ever been down there?

**Rick Lee:** I wouldn’t mind visiting DHEC (Barnwell). See how the process works over there and things to do. So, alright, if there’s no direct suggestions, I’ll open it up for public comment. Anybody wish to say anything?

**Tom Clements**: Thank you very much, my name is Tom Clements. I’m the director of an environmental organization called Savannah River Site Watch. That’s SRSwatch.org. You will find tons of stuff on the plutonium MOX issue that’s been posted over the past many months trying to inform the workers and the public what’s going on. Unfortunately, the local media around Aiken, the state government, NNSA, MOX services, have not informed people about what has just happened with the project.

I want to make a brief comment about, well first, on the Westinghouse Fuel plant, I would like to add a couple of things. I requested in another role with Friends of the Earth, a new draft be prepared on that facility related to license extension. They requested a 40-year license extension which I don’t think they’re going to get, the NRC has agreed to do that assessment, there will be a meeting in the community once that happens and public comment will be taken. I was kind of shocked and appreciated Mr. Lee the question about community. Part of the reason for the problems around that plant unfortunately, I hate to say this, it’s an African/American community. And they have been neglected, they’re lied to, in 2016, Westinghouse said the same thing, we’re going to set up a community advisory panel; they did absolutely nothing. It all came out a couple months ago at a community meeting where they got called for it, maybe they will do something now, we’ll see.

On the issue of PIT production, hold your horses! I appreciated the question about the National Environmental Policy Act. First, a programmatic environmental impact statement is going to have to be prepared showing a need for expanded PIT production in the United States, whether it be at Las Alamos, Savannah River Site, or anywhere else. And that PEIS has not gotten under way. Once that is done, there’s going to have to be a site-specific environmental impact statement for SRS. It’s going to have to look at the host of waste drains, it’s going to have public involvement. Going with a fast-track on these big and costly DOE programs, you end up with something like MOX. Failure. So, I would advise NNSA to slow down, and do what you’re supposed to do, and get those NEPA documents prepared and get public involvement before you push ahead like this is a done deal. There’s going to be some legal problems if that happens.

On the MOX project, finally, I’d like to say, first, there’s total agreement about what’s happened. The Office of Management and Budget just talked to them the other day. John Bolton, Nat’l Security Council, all four committees, appropriations, and armed services on both sides and now the full Congress has checked off on that $220 million dollar cut in the budget which is now going to go to closure, and they’ve agreed on waiving the spending on construction. So, Senator Graham is going to drag Governor McMaster to a supposed indefinite meeting with Mr. Trump; Mr. Trump’s going to have to cut out the legs of the NNSA, the Secretary of Energy, John Bolton, the Director of R&D, the heads of all those committees, and that’s going to be a heavy lift, a very heavy lift. If it happens, I think there will be repercussions. So, I think the MOX project is now terminated. I don’t think there’s much left to happen in the court. But, it’s been done before many times. I would suggest that this Council focus on two things, one, and we’ve heard a little bit about it, protecting the workers as much as possible. And I think we need to make sure, they’re supposed to get 60 days warning, that there’s ample warning, that 60 days under law is met, that there’s ample severance package to the workers, and they’re helped with relocation and jobs either at SRS, or somewhere else. I think you could have some impact in that area.

And, the second question is, and I’ve asked you many times, and I thinkthis is part of the reason we’re at where we’re at, there should have been investigations a long time ago and the GAO has addressed this a little bit, into fraud, waste, abuse, and I’ll throw in mismanagement. It’s not happened. Why have there been no formal investigations and hearings on this matter? And I will proffer it’s because Senator Graham has protected it because he didn’t want the contractor exposed for problems. There are NNSA people who have responsibility, DOE, their subcontractors, like the HVAC contractor that was responsible for the problems. If you could support a call now for investigation into this, I think you could help achieve something here post facto. And as far as removal of plutonium goes, I think that’s a side show; it’s going to have security problems shipping it to another site for no reason whatsoever. It may be the law, but at $300 million dollars, the fine, and that’s going to go up, Congress must appropriate the money. They could appropriate the money, but they can say, it’s coming right out of SRS. So, it really accomplishes nothing by levying a huge fine in this. I don’t think it’s going to happen but if it does happen, I think it’s going to have many repercussions for all the issues we care about at SRS. If anybody wants to talk, I’ll be here after the meeting and at srswatch.org. Thank you.

**Rick Lee:** Thank you Tom. Appreciate it. There was one other lady?

**Student**: Good afternoon. I’m a sophomore electrical engineering student at SC State. My question is a general question about the opportunities at SRS. I know that it’s a nuclear waste processing facility but are there any other opportunities for other disciplines in engineering.

**Mike Budney:** I tell you, we bring all kinds of interns, not just engineering. We’ll make sure we get the information to you to make sure you know the opportunities.

**Jim Little:** You have a 300 square mile facility with all sorts of infrastructures.

**Student:** I interned this summer, so I have been to the site. But my general question was just about other classmates.

**Student:** My name is Jordan and I’m a senior in nuclear engineering student and this is for people to look out for the little one, we have no research available here, but we have partnerships with NC State University and Wisconsin. So, my question is, is there any way that you could implement a program between a nuclear site as here in SC at SRS since we are so close, that students could get hands on training with the reactor. Because some of us are now available to do internships and to make our process easier because when we go to NC State and Wisconsin, our counterparts have already had that type of hands-on activity.

**Rick Lee:** Well, how about this? How about if we task Dr. Danjaji because he sees this stuff and he talks with Duke Energy, and he was going to have a discussion along this topic; it takes a lot, a ton of work to figure out whether that could be done. I don’t know that it can. But that’s the only reactor experience.

**Nicole Nelson-Jean**: Well, we have, within the DOE, we have sites all over the US, so we have facilities where you can have operations experience maybe not here locally or in SC, but we have Idaho National Laboratories, we have Argon Nat’l Laboratory, within NNSA we have 8 sites, 7 different site offices; there are opportunities across the department. And our internships are very flexible across the Department. So, we’ll make sure that you get that information, so you can see those other opportunities and partnerships that we have with other Universities as well. So, you can get that operational experience. But, there are opportunities with the DOE.

**Rick Lee:** Do you have any simulators?

**Nicole Nelson-Jean:** Not simulators.

**Rick Lee:** So, anyway, you’re the future of the nuclear industry. I think that’s the last of the questions. I hope you’ve learned something. I hope it was beneficial. Thank you to the Council and thank you all our guests and speakers today. We had a great meeting. We’re adjourned.