

Governor's Nuclear Advisory Council
Meeting Summary
Thursday, December 9, 2010

Gressette Building, Room 209, 1105 Pendleton Street
Columbia, South Carolina

Council Members in Attendance:

Mr. Steve Byrne
Captain Claude Cross
Dr. Carolyn Hudson
Ms. Karen Patterson
Dr. David Peterson
Mr. Ben Rusche
Dr. Vince Van Brunt
Representative Tom Young

Ms. Allyn Powell, Committee Staff

Call to Order – Adoption of the Minutes

Mr. Rusche called the meeting to order at 1:00 p.m. Ms. Patterson made a motion that the minutes be adopted, with members reserving the right to add editorial comments. The minutes from the September, 2010 meeting were unanimously adopted. Dr. Van Brunt then provided an update on his site visit regarding progress on the MOX facility. He thanked the staff at SRS who had arranged his visit. He spent almost a full day there, first going through the administration building where he recognized many of his former students working on projects there. They were testing equipment before it was put into place in the actual facility. The visit was educational, and he could see progress from his previous visit. He was interested in the issue of cell intrusions and what provisions had been made for them, and they spent some time discussing that. Ms. Patterson then provided an update on the site visit she had made with Captain Cross, Dr. Peterson and Mr. Rusche regarding the GAO report on salt waste processing. Ms. Patterson thanked SRS staff for arranging the visit. They discussed tank integrity, liner integrity, and other issues including carbon carryover. Small column ion exchange was also a topic of discussion, and its use in the tanks for materials on the way to the saltstone facility. The Council also provided comments to DHEC on the tank closure plan and was in the process of developing comments on the Draft Basis for Section 3116 determination for closure of F-Tank Farm as outlined by DOE.

SCANA Program Update

Mr. Steve Byrne Sr., Senior Vice President, SCANA

Mr. Byrne gave an update on new nuclear construction. The combined construction and licensing application for the new facilities was submitted in 2008, and they anticipate final approval in late 2011 or early 2012. The NRC has issued the draft environmental impact statement, and they anticipate the final environmental impact statement in April, 2011. The final safety evaluation report they anticipate being completed by the NRC in June, 2011. At that

point the matter will proceed into hearings and at this point in time it is considered an uncontested matter. The American Society of Mechanical Engineers will be holding their seminar in Columbia this year, with approximately 350 participants, and a conference on Small Modular Reactors will be held in April with 200 participants. All of the participants in these seminars are planning to tour the construction for the new facility.

910 people are currently working on the project on the ground in Jenkinsville. 120 of these individuals are employed by SCANA and the rest are employed by the contractor Shaw or its subcontractors. This number is projected to double by June. Of the existing workforce, there are 21 prime subcontractors of which 9 are small and minority businesses and 8 are from South Carolina. There are also 65 lower tier subcontractors. 55% of those are small and minority businesses and 34 of those are from South Carolina. Of the materials purchased for the site, about 48% of the funds have been spent with in state minority businesses. Mr. Byrne showed several slides of the new construction at the V.C. Summer site and described the layout of the site. He described the crane being constructed to service the two units, the additions to the training facility, and footings for the switchyard. He described lessons learned from the new construction at the Sanmen site in China that SCANA was incorporating as they began the construction process. He also showed several slides of the components as they were under construction, including the lower bowl, the reactor coolant system, and the CAO-1 module. 20 participants from China spent 60 days at the site here for training, with 10 more scheduled to visit in February and March. Mr. Byrne showed a slide of the new Quick Jobs center, which will be staffed by Midlands Tech. It is a collaborative effort between SCANA, the SC Department of Commerce, Midlands Tech and Fairfield County. The center houses a 16 week program to teach basic skills that will make them employable by Shaw on the site for construction.

Ms. Patterson asked if SCANA was working with Southern on training as they would both be using AP 1000 designs for reactors. Mr. Byrne replied that they had sent two classes of 12 training instructors to instructor school. Training instructors from Southern also attended the same classes. Mr. Byrne anticipates having fully certified training instructors by the end of 2011.

Ms. Patterson asked if SCANA's plants and Southern's plants would be so similar a reactor operator could move between the units. Mr. Byrne replied that the operator licenses were still specific the site, but that the facilities would be so similar that completing training to move between the sites should not be a difficult process.

Ms. Patterson then asked about the modules, and how much they came pre-constructed. Mr. Byrne replied that the modules came in pieces, but that the advantage of the modular construction was that the modules could be constructed in parallel in an indoor assembly building.

Duke Program Update

Mr. Steve Nesbit, Director of Nuclear Policy, Duke Energy

Mr. Nesbit indicated that they too had hosted visitors from China to learn about safety and training for reactors, and had much the same experiences that Mr. Byrne described.

Mr. Nesbit discussed the fire protection systems at the facility and the NRC's 2001 adoption of a risk informed performance based fire protection procedure. The NRC has worked with the industry on this new approach, whose implementation is optional. Mr. Nesbit described the differences between the two methodologies which parallel other lessons learned in nuclear safety. About half of the units in the industry are preparing to transition to the new approach. He noted that the new method was not an inexpensive one, with several different types of studies required.

Remarks from Senior SRS Management

Dr. David Moody, DOE-SR Site Manager

Dr. Moody gave a brief history of his work with DOE. He indicated that he had competed hard for this position as it is one of the most important site manager positions at DOE. He stated that SRS is not a closure site, and that it has much energy and many future opportunities. He is here today to discuss process. Workforce restructuring is an issue facing the site, but Mr. Flowers will discuss this later in his presentation. The next major event at the site will be a visit from the Blue Ribbon Commission on January 6th, with a public meeting to follow. The highest risk waste remaining at the site is the tank waste. Dr. Moody and his staff are working on ways to more economically disposition plutonium, and he plans to share more about this in the future.

The site has made significant progress in footprint reduction, with 1,000 square miles to be completed in 2010. They recently celebrated the closure of M Area with Assistant Secretary Triay. The bubbler technology is working as planned, with an almost doubled melt rate feeding the DWPF. 81 TRU waste shipments have been made to WIPP, and they look forward to completing the true waste mission by the end of calendar year 2012. The new steam plants, which are biomass plants, are expected to start delivering steam within the next week.

Dr. Van Brunt asked if he anticipated any issues with obtaining funding in the face of congressional changes. Dr. Moody replied that it could be difficult to maintain the current momentum achieved through the Recovery Act, but they did not yet know the extent to which they would be affected. They are still looking to increase canister production at DWPF to over 300 canisters for the fiscal year.

Mr. Garry Flowers, SRNS

Mr. Flowers echoed Dr. Moody's remarks about the site having much energy and many future opportunities. They are very excited about the future of the site and the role they will play. He also spoke regarding the workforce restructuring program. To date 273 employees have self-selected. Next Wednesday will be the close of the self-select period, and after that is complete they will look at the workforce, scopes of work and safety basis. At the end of February they

will initiate the first phase of involuntary separations. They anticipate 500-700 people will be removed from the workforce during that process, and they will receive 60 days of pay in lieu of notice. They will also be providing assistance via a training/assistance center in downtown Aiken. They are actively looking at nearby opportunities for these employees and options for them at the parent companies for SRNS. If a second phase is needed it will be in August, with a reduction of 1,400 total employees. They believe this will make the site much more efficient while still maintaining a safety basis and the proper conduct of operations.

Mr. Rusche stated that this was a challenging situation, and that he appreciated the attention Mr. Flowers was giving to the situation to make sure they met the objectives without tearing down what had been built.

Ms. Patterson asked if ARRA employees are more likely to be part of the workforce reduction as they have a certain skill set. Mr. Flowers indicated that the Recovery Act workforce of 1,400 was made up of three sectors: 798 employees from the base contract, contractors awarded work through the bid process, and staff augmentation. 500 from the subcontractor and staff augmentation pools have already left the project in the last few months as their scope of work ended. Of the 728 from the base contract, 128 will continue to work in the solid waste program. Others will remain until their scope of work is completed.

Mr. Doug Dearolph, Manager NNAS-SRSO

Mr. Dearolph thanked Dr. Van Brunt for his comments regarding the MOX tour. MOX continues to be a very important project for the NNSA. The facility has also had several other visitors lately, including senior administrators at DOE and officials from the Russian Federation. Everyone appeared to be impressed with the progress they were making. The roof installation is scheduled to begin very soon on the MOX building. The Waste Solidification Building, which will receive waste streams from MOX and the pit disassembly and conversion facility. The project is 49% complete and the overall facility construction is 28% complete. The walls and roof are expected to be completed by April. The pit disassembly and conversion facility is reaching the point of a critical decision that would approve the conceptual design for combination in the K-Area facility. The progress in that has continued on design work and technical reviews. Shifting to the tritium operations, operations are stable. There have been no extractions since they last spoke, and the project is meeting contract requirements. In response to Ms. Patterson's request for an agenda item on nuclear materials management, a document is in process and should be in final review over the next few weeks.

Ms. Patterson asked if the technical review identified any issues that were difficult to resolve. Mr. Dearolph indicated that the initial date for a decision was very aggressive and that the project had decided to take a few weeks longer to make sure they had the best information.

Dr. Van Brunt thanked Mr. Dearolph again for the opportunity to visit the facility. He was looking for an individual ownership of the equipment and the processes by the engineers, and he did see that in his visit.

Mr. Victor Franklin, SRR

Mr. French was unable to be here today, so Mr. Franklin provided the update on Savannah River Remediation activities. He thanked the council for their comments on the F-Area closure plan and indicated that he looked forward to reading their future comments on these issues. SRR operations has recently completed 2.5 million safe hours, with 1 million safe hours for ARRA operations. Tank closure work is proceeding on schedule, with a number of interim milestones met. They are currently working on 15 of the 22 tanks. Saltstone was restarted in late November after mechanical upgrades to increase throughput. The bubblers have doubled production, with over 300 canisters at DWPF expected in the next year. They are working to decrease the regulatory review time for closure and to complete tank closure activities.

Mr. Rusche thanked Mr. Franklin for his remarks and attention to the different projects in process.

Dr. Van Brunt asked about the status of Tank 48 issues. Mr. Franklin stated that they would have more information in that regard in a few months.

Salt Waste Processing Facility Project

Mr. Tony Polk, DOE-SR Project Director

Mr. Polk provided an update on the progress at the Salt Waste Processing Facility. In September 2007 the project baseline was approved, and in December 2008 full approval for the project was granted. In March 2010 construction of the decks began. In last weekend, the contactors for the removal of the cesium arrived and on Monday they were placed in the facility. They anticipate getting moving after the first of the year on the facility support areas. They have currently ramped up to two shift operations. There are 670 employees working on the facility. 26 miles of piping will extend throughout the facility. They have begun the placement of this process piping in many of the cells in the interior and they continue to move along with this. This is one of the most difficulty construction activities. They had hoped to have large ASME vessels in the tanks at this point, but the lack of adequate vendors has hampered this effort. DOE is working to bring the quality of these materials up. The vendors have lost many of the people who knew how to do this via retirement and it has impacted the ability to get materials and equipment in a timely manner. They have worked with the vendors to improve performance and get the materials delivered, and have re-sequenced the construction process to preserve the overall schedule.

They have also begun to receive and put in place fans in the exhaust fan room, duct work, contactor support bracings, and plate lining. The concrete walls to the second level of the facility are 90% completed with the forms. Pre-cast panels for the floors are 100% complete. Electrical installation has been in progress on the first levels of the facilities, as well as coatings for the walls. The isometric drawings for the construction work force are more than 75% complete for the central processing area. 21,000 welds have been completed, and there are about that many left to go. The 90% design was completed in early 2009 and since they have been moving forward with construction 2 years ahead of the baseline. They anticipate with the changes they have made that they will move briskly through the construction process.

Somewhere along the way they will begin testing the 62 systems in parallel. That will lead into cold commissioning activities and operational readiness reviews before hot operations of the facility begin. That date is projected to be September 2013, though given the risks still out there that date may be pushed out to the summer of 2014. Looking forward the highest risks remain with vendor performance and procurement. They continue to meet or exceed expectations with schedule and productivity with craft work while maintaining an excellent safety record.

Dr. Van Brunt asked about filtration performance and the cross-flow filters. Mr. Polk replied that these are currently in production and are on schedule. The activities from ARPMCU have helped to inform them regarding areas they could improve and areas that work well. They learned from studying the filters in that process.

Dr. Van Brunt asked about the contactors, which are extremely large. Have you been able to look at these and examine their facility? Mr. Polk has not heard if any technical information has been available from their deployment in the Gulf, but will ask his technical staff and get that information. He stated that he has high confidence based on ARPMCU that this facility will perform as well as or better than planned.

Dr. Van Brunt stated that he was thinking more regarding the fluid mechanics than the actual chemistry. Mr. Polk indicated that he would seek that information and provide it.

Ms. Patterson asked who would be operating the facility. Mr. Polk replied that the contract with Parsons included one year of operations, so they would be working to train operators and to work together with ARPMCU as a high degree of integration between the two would be needed in the future.

Mr. Polk invited the members of the Council on a walking tour. Dr. Van Brunt asked him to let them know when the contactor piping comes in for the tour.

Tank Closure Update

Sherri Ross, DOE-SR and Steve Thomas, SRR

Ms. Ross provided an overview of tank closure activities and the schedule. Closing and grouting these tanks represents a significant risk reduction for the site. Mr. Thomas provided a power point presentation showing the road map to tank closure from a regulatory documentation perspective. *A copy of this presentation is available on the Nuclear Advisory Council webpage of the South Carolina Energy Office website: <http://www.energy.sc.gov>.* SRR is a closure company and their mission is to safely disposition the liquid waste so that the site can move on to other missions. Many of these tanks have been storing waste for over 50 years. Tank 1 first received waste in December 1954 and much of that waste remains in the tank. Tanks 17 and 20 were closed in 1997, but no tanks have been closed since that time. Currently tanks 18 and 19 are in the closure process, with tanks 5 and 7 following shortly behind. There are three agencies that work with DOE on tank closure – SC DHEC, US EPA and the US NRC. They have been working with SC DHEC on the general closure plan, which is an important step going

forward and they anticipate approval by the end of the month. Another important document is the F-Area Tier I documentation, this is the document that DOE headquarters uses to approve the process by which the site closes the tanks. It was sent to DOE headquarters this last week along with the NEPA supplemental analysis.

NRC 3116 legislation introduced into the process a basis document approving the waste determination, and an important part of that is tank farm performance assessment which provides a long term risk assessment for the closure actions. Individual analyses are being done on the tanks and compared to the performance assessment, along with the Tier II documentation being provided for DOE review. The closure module is the documentation provided to SC DHEC upon which the determination to allow the tanks to be grouted is based. He anticipates these will be provided to SC DHEC within the next month. Once SC DHEC approves the closure module, an EPA determination is made and those two documents feed the DOE Tier 2 Closure Authorization.

Ms. Patterson asked how many RAI's and clarifying comments were received. Mr. Thomas replied that they had received 45 RAI's and 60 clarifying comments. Of those, 6 RAI's were related to the W/D portion along with a few clarifying comments, but the majority of them were on the PA itself. Ms. Patterson stated that she appreciated how well the NRC oversees the nuclear utilities but that she believes in this case there may be some confusion the consultation role versus the oversight role they play with the utilities. Ms. Patterson stated that she did not believe the number of RAI's received in any way reflected on the quality of the closure documents provided or the work done. She has watched over a decade as the tanks were cleaned. NRC has a principle of good regulation that states they shouldn't do more than they need to do to reduce risk, and she believes that in this case they may be ignoring that principle. 45 RAI's is unlikely to reduce the risk from where we are now, and she will hold them to their schedule to complete their consultation by the spring of 2011.

Dr. Van Brunt asked if there were any thoughts at looking at tanks 17 and 20 and if there were any issues associated with them that would demonstrate the way that the process works. These could help address the RAI's. Ms. Ross indicated that they were using the lessons learned from tanks 17 and 20 in the closure process. The NRC is new to the process and was not as involved in the process involving tanks 17 and 20. Ms. Ross indicated that they had spoken to the NRC regarding the RAI's. The NRC has indicated that DOE has already modeled and analyzed everything that they could in this matter, and that answering some of these RAI's would be long-term research and development that would be part of the monitoring scope recommended. Ms. Patterson thanked Ms. Ross for that clarification, and was pleased that everyone was on the same page in this regard. Mr. Thomas indicated that they were rolling the lessons learned for F-Tank farm into the documentation for H-Tank farm.

Ms. Patterson asked if there was a cumulative performance assessment. Mr. Thomas replied that the composite analysis looks at the entire site as a whole, including closure, saltstone, E-area and others. There are 51 tanks, of which 2 have been closed. The facility has 8 tanks that

are single wall, with no form of secondary containment. Tanks 17-20 are the four in F-Tank Farm that are single wall tanks. Tanks 5 and 6 do have partial secondary containment.

Mr. Byrne asked when they anticipated to complete closure of all 51 tanks. Ms. Ross replied that right now they anticipate closing the 24 old style tanks by 2022. The system plan projects all 51 tanks will be closed by 2026.

Public Comments

Mr. Rusche asked if there were any public comments.

Mr. Tom Clements with the Friends of the Earth asked to make a few remarks. He stated that he does appreciate the closure efforts, but he has some concerns. He appreciates the NRC's role in the process especially as it related to issues surrounding grouting and the caps on the tanks. He wished the Council would ask of Duke and SCE&G what the status was with the projects as it relates to partners, with news of Santee Cooper looking to reduce their percentage in the project. Related to the AP 1000, some concerns have arisen that Shaw has signed a cooperation agreement with Toshiba and are pursuing an advanced boiling water reactor design. He wonders what impact this will have on work on AP 1000 plants as globally the other design is proving more popular. Concerning H-Canyon the decision to process the spent research reactor fuel is pending and funding for it is not included in the continuing resolution. On DOE's website there are studies regarding both wet and dry storage for spent fuel of this type. He would like the Council to study this issue. Concerning MOX, there was no news on status today as who will use this reprocessed fuel. TVA will have to go through a testing program to use this fuel, and he is concerned that this could be a seven year process during which time the MOX plant would be idle. He, along with the Sierra Club and the Coastal Conservation League are concerned about reprocessing activities at the site and he plans to highlight this in a presentation to the Blue Ribbon Commission during their visit to the site.

Closing Remarks

Mr. Rusche thanked the speakers and adjourned the meeting.