

Governor's Nuclear Advisory Council

Meeting Summary

Thursday, June 10, 2010

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

Council Members in Attendance:

Mr. Steve Byrne
Dr. Carolyn Hudson
Dr. David Peterson
Mr. Ben Rusche
Dr. Vincent Van Brunt

Ms. Allyn Powell, Committee Staff

Call to Order – Approval of the Minutes

Mr. Rusche called the meeting to order at 1:00 p.m. Dr. Van Brunt made a motion to adopt the minutes of the previous meeting. There were no changes to the minutes, and the minutes were unanimously adopted.

SCANA Program Update

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

Unit 1 is currently operating at 100% power, and the Operator Training program was re-accredited. No refueling outages are planned for the current year. The next refueling outage is scheduled to occur April 15, 2011. This will be the refueling outage under a new contract, with Westinghouse responsible for the primary activities and Shaw responsible for the secondary activities.

A significant pollen storm impacted the facility in the spring, requiring cleanup.

Mr. Byrne discussed the yearly schedule for NRC regulatory inspections. A copy is included in the power point presentation.

The operator training program was re-accredited and they expect a new class of candidates to sit for the NRC license exam in 2011. The class in progress consists of 10 reactor operators and 5 senior reactor operators. 20 new auxiliary operators have been hired in the last two years for new nuclear development and Unit 1 needs. Unit 1 will send 14 operators to new nuclear development after the current initial license operator class completes. The total number of new hires for Units 1, 2, and 3 is greater than can be supplied by traditional means, so training programs at local colleges have been stepped up.

Another area where there is a forecast shortage of trained employees is in the radiation protection/health physics field. Local technical colleges and universities have been reviving dormant programs in these areas, and VC Summer has identified a training pipeline in the state with Aiken Technical College, Spartanburg Community College, and Francis Marion University providing a variety of programs for radiation protection and health physics.

VC Summer is also in the process of having individuals trained to become instructors in the Senior Reactor Operation Certification Program. 24 individuals in total will be trained, and the first 12 are currently in initial AP 1000 systems training. Mr. Byrne gave an update on the Nuclear Operator Program at Midlands Technical College. 90 students are presently enrolled, with 16 currently participating in a 10 week summer program at VC Summer. The first students will graduate from the program this September.

Mr. Byrne presented a slide on the various other types of employees that will be needed, including a breakdown of engineers by discipline. He then discussed how the new units will affect SCANA's generation mix, with the two new reactors scheduled to increase the percentage that nuclear contributes to SCANA's fuel mix from 11% to 27%. In terms of generation mix by dispatch, nuclear will be increased from 18% to 55%, bringing the total non-emitting portion of the generation mix from 23.4% to 59.4%.

SCANA is closely following the construction of a nuclear unit at the Sanmen site in China to identify items which could assist in the construction of their own planned new reactors.

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>.

Mr. Rusche stated that he was pleased with the way SCANA was planning to meet its staffing needs and that they appeared to have a great mix of new talent.

Dr. Van Brunt asked how far ahead the Sanmen facility in China was ahead of SCANA's proposed schedule. Mr. Byrne replied that it was approximately 2.5 years ahead.

Dr. Peterson asked if SCANA had seen any recent changes in the insurance or financing climate. Mr. Byrne replied that as far as financing goes they were still pursuing the loan guarantee program, but that thus far they have been able to issue debt and secure financing on the open market without it.

Duke Energy Program Update **Mr. Steve Nesbitt, Duke Energy Office**

Mr. Nesbitt provided a brief overview of Duke Energy's overall nuclear fleet, consisting of seven pressurized water reactors at 6,996 megawatts of capacity. In 2009, Duke Energy ranked #1 in the nuclear fleet industry rankings, as measured by key performance measures such as safety,

reliability and efficiency. Thus far in 2010 Duke has had two refueling outages, a 37 day outage at McGuire Unit 1 and a 35 day outage at Oconee Unit 2. There were also unplanned outages at Oconee 3 and Oconee 2, but the fleet still maintained a capacity factor of 95.6% through April 30, 2010.

He then gave a brief overview of proposed new nuclear construction in South Carolina, a facility of two AP1000 units in Cherokee County. The projected commercial operation date of this facility would be in the 2021-2022 time frame. Duke is also exploring the option of new nuclear construction near Piketon, Ohio.

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>.

Dr. Hudson asked Mr. Nesbitt to elaborate on the cause of the unplanned outages. Mr. Nesbitt explained that the first outage at Oconee was due to a leak in the feed water heater on the non-nuclear side. The second outage occurred right after startup, when a valve on the primary system water pressurizer was found to be leaking. At the time of the meeting, they had just finished fixing this problem.

Dr. Van Brunt asked if they had been looking at anything in terms of wind in Ohio or any other part of their service territory. Mr. Nesbitt replied that Duke's Ohio service territory was not near Lake Erie, so they had not been looking at wind there, but that they had been looking at the potential for offshore wind in North Carolina.

Mr. Byrne asked Mr. Nesbitt to comment on the recently announced upgrades at Oconee. Mr. Nesbitt replied that they had been working on refurbishing their facilities for ten years or so, as due to the vintage of the plant regulations when it was constructed were not as mature as they are today.

South Carolina Department of Health and Environmental Control Update

Ms. Shelly Wilson, SCDHEC

Ms. Wilson with the South Carolina Department of Environmental Control (DHEC) provided an update on DHEC developments since the previous meeting of the Nuclear Advisory Council. The budget reductions facing the department remain a hurdle to overcome with a pending veto affecting their funding significantly, but these largely do not impact SRS related programs as those are federally funded. DHEC has also closely followed events in the Gulf relating to the oil spill, and is providing material on their website to educate the community. The chance of an impact in South Carolina related to the spill is slim.

A bill pertaining to surface water permitting is pending, and would help SC manage our use and develop plans with other states. Plans for new water usage for nuclear sites would be part of the NRC approval process, with older units grandfathered in.

Ms. Wilson also stated that the plan for the closure of the F tank farm would be out for comment this summer.

Mr. Rusche thanked DHEC for their efforts to keep the Council informed.

Remarks from Senior SRS Management

Mr. Terry Spears, DOE-SR Acting Manager

Mr. Spears thanked the Nuclear Advisory Council for their letter of May 20, 2010 regarding the actions taken to improve safety at the site. He believes that the actions were both efficient and effective. Mr. Craig was in Chicago for a meeting and regretfully was not able to attend, so Mr. Spears is giving the update in his place.

On June 3, 2010 the site celebrated a ribbon cutting for the FBI's expanded Radiological Evidence Examination facility. This facility will train personnel in the forensic examination of radiological or radiologically contaminated materials.

On April 15, a public meeting was held on the concept of developing an energy park at the Savannah River Site, using the existing resource at the Savannah River Site for additional DOE missions. The first energy park workshop was held in August of 2009 and they have been ongoing.

Mr. Spears then provided a brief overview of activities at the site. The DWPF continues to operate smoothly and pour canisters. 140 canisters have been poured in FY 2010, 2,900 canisters have been poured since 1996. The current concentration of isotopes in the canisters is 897 g/m³, the concentration originally set for acceptance at Yucca Mountain, and it will be maintained at that level for the foreseeable future. The site is looking at all options for plutonium disposition. 720,000 gallons of waste have been processed by the saltstone facility. The objective is to get liquid waste from the tank farms safely dispositioned. SWPF construction continues. Of the 22 old style tanks, 15 are in the waste removal process. Consolidation of nuclear materials across the complex is 95% complete. HB line and H Canyon processing continues. It is estimated that materials in the current project will be dissolved by 2010 and shipped by 2011.

In the area of infrastructure, Ameresco has been awarded a contract to build a new biomass cogeneration facility to replace the D area coal fired plant. Construction began in December of 2009, with most of the work in the December-March period focusing on site preparation.

The footprint reduction program is also progressing, with the demolition of the K reactor cooling tower on May 25 being the highlight for this quarter. 500,000 gallons of water in P area have been evaporated. Grouting is ongoing in R area. The contract for sealing the reactor roof

has been awarded. Work also continues on HWCTR decommissioning. The M area project is expected to be completed this fall.

ARRA programs involving the disposition of liquid waste are ongoing and on schedule.

Mr. Chuck Goergen, Deputy Manager for Nuclear Materials Operations, SRNS

Mr. Goergen again thanked the council for their recent letter regarding safety improvements. The emphasis at the site is on safety first, and they have recently completed 94 million safe work hours. A few staffing changes will occur shortly. Roger Eshelman is retiring on August 31. Upon his retirement Fred Dohse will become the executive vice president and chief operating officer.

A video was then shown of the implosion of the K cooling tower, and Mr. Goergen described the process of setting up for the implosion.

Chairman Rusche asked why it was necessary to bring the tower down, as it was one of the younger large structures on the site. Mr. Goergen replied that ARRA made it possible and that there were ongoing costs associated with maintenance. Also, the tower presented an aircraft hazard. With K reactor converted to plutonium storage, a cooling tower was no longer needed.

Mr. Kevin Hall, NNSA-SRSO

Mr. Hall began with an update on two items relating to the National Environmental Policy Act. The environmental assessment regarding the disposition of GAAP materials came back with a report of no impact. This is material that could be identified from overseas sources. Mr. Hall stated that he appreciated the comments made by the Council on this matter. There is also an upcoming notice of intent to modify a supplemental environmental impact statement associated with plutonium disposition. The notice of intent is expected to come in late June or early July for alternative disposition for an increased quantity of surplus plutonium. The environmental impact will look at both using TVA reactors and the MOX facility for the disposition of this surplus plutonium.

Mr. Hall then provided an update on activities associated with the MOX facility. Construction began in August 2007 and is now 40% complete, with 4 million safe man hours on the construction project. 800 people are employed on that one project, and they expect the number employed on construction to reach 2000 this fall. The project is well funded, moving from base construction phase to installing equipment. Construction is ahead of schedule. The Waste Solidification Building (WSB) is a support building for the MOX facility, began in 2008 and it is expected to be completed by June 2012. The feed facility for MOX will be the pit disassembly conversion process, and they are looking at combining this with another project planned in K area.

The demand for tritium is steady, as the strategic reserve continues to be robust. Most tritium currently is recycled from old devices. Tritium extraction is planned for TVA and the Watts Barr

facility. There are also two new technical facilities associated with the tritium program: the production of a tritium battery and production of the H³ isotope.

Mr. Rusche asked what the intended use was for the H³. Mr. Hall replied that it was used in portal detectors for physics experiments, as it was an excellent medium for detecting neutrons.

Mr. Byrne asked if they had any customers yet from the MOX assemblies. Mr. Hall replied that they were currently shopping around the industry and had interest from TVA, Palo Verde and a few others. They are also contracting to use the MOX fuel to develop design for reactors which would allow for broader use.

Mr. Jim French, SRR

Mr. French provided an update on liquid waste activities. They are celebrating 3 million safe work hours, with 23 million safe work hours for construction. There are 15 tanks in the closure process. Mr. French thanked the council and DHEC for their comments regarding the importance of tank closure last year as ARRA funding was being considered. The sand mantis robot has been useful for the last tanks, but the next few tanks will be more complicated. A new version of the robot is being developed that will be able to move over pipes and other equipment that exist in the bottom of the tanks. Tanks 18 and 19 have had final sampling and are ready to move forward in the closure process. Tanks 5 and 6 are following closely behind them, with final work scheduled this summer. Two more tanks are slated to move forward in the closure process this fall.

The mission to close the salt tanks was initially 2030, but DOE is looking at ways to accelerate the time frame for that mission. The limiting factor is salt waste processing. They are looking at ways to increase the decontamination factor to speed up the process. They are also looking at small column ion exchange technology (SCIX), which would increase the capacity by 2 million gallons per year. This could bring the life cycle of the project back to 2024.

Mr. French then discussed the problem of a qualified future workforce. They are working on a pipeline program, concentrating on summer hires in math, science and engineering. There is also a pipeline program for superfund jobs training. There are 32 new hires for the site coming through that program that will begin work on site in the next month.

Mr. Rusche thanked Mr. French for his hard work to keep up the momentum on this program.

Dr. Van Brunt asked about evaporators, tank space, and the status of Tank 48. Mr. French stated that while they still monitor, they now have more evaporator capacity than they need. Since 1996 they evaporated as fast as they could, but with the SWPF needing the water to sluice the salt the recycled water is being used to prepare feeds for SWPF. Tank 48 is still on the books and has full funding. Design review is ongoing, and the first long lead procurements will be issued in the fall. Dr. Van Brunt then asked about the status of the second generation of the BobCalix solvent. Mr. French responded that originally the SWPF had been intended to

start up with BobCalix. The second generation, BabeCalix, gets a much better decontamination fraction allowing work to proceed faster. It is currently under testing at Oak Ridge, and the testing is expected to be complete in 2011.

Mr. Rusche asked about collaboration between the various sites across the DOE complex on tank farm issues. Mr. French replied that Secretary Triay had been getting all the people working on this together to find ways to collaborate and share technology. Mr. French also highlighted the fact that they have already been communicating with DHEC during the process about the things they want to see in tank closure, so that when the paperwork is submitted the process is streamlined.

Mr. Byrne asked if the same technology was being deployed to clean the tank farms at Hanford that we were using here. Mr. French replied that to the degree the composition of the tanks was similar it was. Hanford has more sulfur and potassium, and state regulation requires all waste to go for vitrification rather than the split vitrification and grouting process that is used here. The sand mantis and robot technology have both been exported to Hanford.

Mr. Byrne asked about the midyear review regarding fuel received from Chile. This was a NNSA program, and an NNSA representative came forward to answer the question. The fuel came from a research reactor, and was part of a program to replace research reactor HEU fuel with LEU fuel.

Dr. Van Brunt stated that the issues at Hanford are significantly more complex because they have 153 single shell tanks and 24 double shell tanks, while all tanks at SRS are considered double shell tanks or the equivalent. Hanford waste also has four different chemistries which add to the complexity, and anything that we can do to accelerate that is needed. Mr. French credited DuPont with keeping good records of what is in the tanks, and what was put into the tanks when. The same detail is not available in the earlier data from the Hanford tanks.

Mr. Rusche complimented Mr. French and the rest of the group on working together in an effective way on such a complex project, despite the initial reservations he had about having several different groups in charge of projects at SRS.

Dr. Van Brunt seconded Mr. Rusche's statement. He too had some trepidation about having multiple contractors without a record of interaction, but the results have been impressive with everyone working together.

Transuranic Waste Project Update

Mr. Terry Spears, DOE-SR

Mr. Spears thanked the council for their compliments, and introduced Bert Crapse to give an update on the TRU waste project.

Mr. Bert Crapse, DOE-SR

Mr. Crapse thanked the council for the opportunity to present. TRU waste is a solid waste that meets certain criteria and includes isotopes heavier than uranium. For SRS that is mainly Pu238 and Pu239 which is construction debris or Department of Defense waste from its activities. 2009 saw the end of Phase I of the legacy waste program. They concentrated on the drum waste inventory, with over 30,000 drums shipped to the Waste Isolation Pilot Project for disposition. This reduced pad space by 30%.

The balance of the waste is 5200 m³. It is mainly boxed waste, and the WIPP criteria do not allow the concentrations of this waste. The material in the boxes in many cases is contaminated and they will need to develop a process and facilities to disposition both this waste and some other remote handled containers. They are working on licensing for a new type of shipping container, TRUpack III, which will allow 5x5x8 containers to be shipped. These are currently being constructed, and should be available for shipments sometime next year.

The TRU waste program brought on 150 new workers, so they spent significant time training these workers. In addition to classroom time, they spent weeks in mock-ups with senior supervisors, who then came with them to provide hands on technical assistance processing the waste. There have been no contamination events, and they are proud of the record so far. A new facility to help handle the larger boxes will be coming online this fall.

Mr. Rusche complimented Mr. Crapse on the progress made, but cautioned that more work was still required.

Mr. Byrne asked about dose rates for shipping and the 200 millirem breakpoint. Mr. Crapse stated that was the dose rate on the outside of the drum. Mr. Byrne asked why the culverts were buried. Mr. Crapse stated that it was a decision made back in the 1970s, when WIPP was planned but very far off, that temporary burial in an easily retrievable way was the safest way to store the waste until it was ready for final disposition.

Dr. Van Brunt asked if they knew the location of the most difficult containers. Mr. Crapse replied that they did, and gave credit to DuPont for their record keeping.

Public Comments

Mr. Rusche then opened the meeting to public comments. There were no public comments.

Closing Remarks

Mr. Rusche thanked the speakers and adjourned the meeting.