

GOVERNOR'S NUCLEAR ADVISORY COUNCIL
Meeting Summary
Thursday, December 11, 2008
Blatt Building, Room 426, 1105 Pendleton Street
Columbia, South Carolina

Council Members in Attendance:

Mr. Ben Rusche
Dr. Carolyn Hudson
Ms. Karen Patterson
Dr. David Peterson
Dr. Vincent Van Brunt
Rep. Tom Young

Council Members Absent:

Mr. Steve Byrne
Mr. Bill Mottel
Senator Greg Ryberg

Attendees:

Ken Chacey, NNSA-SR
Allen Gunter, DOE-SR
Dhiaa Jamil, Duke Energy
Sandy Johnson, DOE-SR
Derek Jokisch, Francis Marion University
David Jones, Duke Energy
Amy Lawrence, S.C. Energy Office
Larry Ling, SRNS
Patrick McGuire, DOE-SR
Rick McLeod, SRS CRO
Terry Montgomery, NNSA
Chuck Munns, SRNS
Steve Piccolo, WSRC
Clay Ramsey, NNSA
Sherry R. Ross, DOE-SR
Terry Sejour, NNSA
Sheron Smith, DOE-SR
T.J. Spears, DOE
Steve Thomas, SRNS
Catherine Vanden Houten, S.C. Energy Office
Shelly Wilson, DHEC
Clint Wolfe, CNTA

Call to Order – Approval of Minutes

Mr. Ben Rusche, Chairman of the Nuclear Advisory Council, called the meeting to order at 1:00 p.m. After a welcome and brief comments, Mr. Rusche called for the approval of minutes from the September 11, 2008 meeting. The minutes of the September 11, 2008 meeting of the Nuclear Advisory Council were unanimously approved.

Remarks from Senior SRS Management

Ms. Sandy Johnson, DOE-SR

Ms. Sandy Johnson, Department of Energy – Savannah River, began her remarks by explaining that Jeff Allison was currently in Washington and sent his regrets. She said Mr. Allison had just

met with the Undersecretary this week and had received approval for construction of the Salt Waste Processing Facility – a huge milestone for the site.

Ms. Johnson went on to provide additional updates on progress made at the Site. She reported that the new liquid waste contract had been awarded and that the transition will begin shortly. This transition is anticipated to be a smooth one.

Also, she reported that the Savannah River Nuclear Solutions (SRNS) announced a voluntary separation program. Depending on how this initiative proceeds, it will determine whether or not an involuntary separation program will be necessary.

Ms. Johnson also provided an overview of progress on various projects at the site.

- She pointed out that great progress in liquid and solid waste has been made. They have been operating DWPF and have completed more than 2,600 canisters.
- They have broken ground on construction of Saltstone Vault 2.
- DOE authorized Westinghouse Savannah River Company (WSRC) to proceed with the implementation of a new mechanical cleaning technology for the emptied liquid waste tanks known as the sand mantis. This has been operating well.
- In the category of transuranic waste, SRS has shipped approximately 28,000 drums to WIPP and progress continues to be made.
- Regarding the consolidation of non-pit plutonium at the SRS, they have received 74% of the 13 metric tons scheduled to be stored at SRS. SRS expects to complete consolidation by September of 2009.
- Since initiation of the blend-down program of highly enriched uranium to low-enriched uranium, they have blended down and shipped 280 trailers containing 254 metric tons of low-enriched uranium solution off-site for conversion into commercial reactor fuels. Ms. Johnson pointed out that this material is sufficient to provide electricity for all the homes in South Carolina for 11 years. This is equivalent to eliminating 415 nuclear weapons. She also reported that this saves taxpayers \$750 million in storage and disposal costs and saves the Tennessee Valley Authority \$150 million in uranium costs. (TVA uses the fuel in their nuclear power reactors.)

Representative Tom Young

Prior to introducing the next speaker, Mr. Rusche welcomed a new member of the Nuclear Advisory Council: Representative Tom Young. Mr. Rusche pointed out that Representative Young is taking Representative Skipper Perry's vacancy on the Nuclear Advisory Council. Mr. Rusche then asked Representative Young to briefly introduce himself to the group.

Representative Young explained that he is a native of Aiken who moved back seven years ago and was just elected to the General Assembly and sworn in a few weeks ago. He had asked the Speaker of the House to appoint him to the Nuclear Advisory Council due to his interest in these matters and the importance of these issues to his constituents. He also pointed out his willingness to discuss issues pertinent to this committee and looks forward to serving on the Nuclear Advisory Council.

Mr. Ken Chacey, NNSA-SRSO

Mr. Ken Chacey, NNSA-Savannah River Site Operations (SRSO), was then introduced to provide further updates on activities at the Site. He began his remarks by pointing out that there are two major responsibilities at the Site: Environmental Management (EM), responsible for cleaning up the legacy wastes and the National Nuclear Security Administration (NNSA), responsible for defense programs. He explained that he works on the NNSA side of the Site. He pointed out that the MOX Fuel Fabrication Facility is one of the two major facilities on SRS administered by the NNSA (the other is the Tritium Extraction Facility). He explained that Mr. Clay Ramsey, Project Director of MOX, would brief the Council on MOX construction. But he did point out that great progress has been made at the MOX facility. Mr. Chacey reported that they had had a goal of placing 40,000 cubic yards of concrete during one fiscal year. And that this was accomplished on schedule.

Mr. Chacey also pointed out that the MOX facility is an Nuclear Regulatory Commission (NRC)-licensed facility and that NNSA continues to work well with NRC. The NRC has identified some activities that require improvement and plan to hold a meeting to discuss the results of the NRC review of the MOX facility on December 15th. Mr. Chacey pointed out the significance of this project, as it is one of the first major nuclear facilities the country has undertaken in decades.

Mr. Chacey went on to report on the status of various other aspects of NNSA work. He reported on a great team effort among all the entities on the Waste Solidification Building. The Waste Solidification Building is critical to the plutonium disposition program and must be on line to support the MOX services.

He also went on to reiterate what a success it is to have received approval for construction of the Salt Waste Processing Facility (an EM facility).

Mr. Chacey pointed out that DOE is currently under a continuing budget resolution. They are expecting a budget bill in February or March of 2009. He also provided an update on matters relating to the transition to the new Obama Administration.

Ms. Karen Patterson asked if in addition to constructing the Waste Solidification Building SRNS would be running it. Mr. Chacey answered yes. Ms. Patterson then asked if the Pit Disassembly and Conversion Facility (PDCF) would actually be coming to the Savannah River Site. Mr. Chacey responded that it is the position of the Department of Energy that the PDCF is the project of record for plutonium disposition and will be coming to the Site.

Mr. Chuck Munns, SRNS President

Mr. Chuck Munns, SRNS President, was then briefly introduced as the next speaker. Mr. Munns explained that he would present information on three guideposts, three activities and three issues. The three guideposts are (1) operational excellence, (2) transformation (modernizing and increasing efficiency), and (3) relationships with stakeholders. He explained that great progress has been made on all of these fronts. Next, Mr. Munns outlined the three activities: (1) growing the Laboratory (2) human capital on site (including a human capital plan and reinvigorating workers), (3) big projects.

Mr. Munns then outlined three issues at the site that are pertinent to the Nuclear Advisory Council in greater detail:

- (1) Workforce – There has been a voluntary workforce separation program, aimed at those employees willing to leave the Site, with retirement available to those eligible and with a severance package based on length of service.
- (2) Operations – There has been a great safety record at the site. In the construction field, there have been 10 years without an accident. Also, electric power to A-Area is provided by a new biomass facility that uses wood chips, making operations 98% more efficient and less polluting than those of the old A-Area coal powerhouse.
- (3) Savannah River National Laboratory – Working with Dr. Samit Bhattacharya to improve and become one of the nation’s premier national laboratories. The laboratory was selected to lead a hydrogen storage Engineering Center of Excellence – a virtual center consisting of ten partners (involving universities, industry, federal laboratories). Also, Crawdad Test and Evaluation Program is a Homeland Security initiative using the 300 square miles of the Site to test radiation detectors. Finally, Mr. Munns reported on three prestigious awards that staff at the Laboratory have received. Two employees received awards from the American Institute of Chemical Engineering and one received an award from the American Cancer Society.

In response to a question, Mr. Munns explained that it was anticipated that approximately 250 employees would take advantage of the voluntary workforce separation program. This would be the first step in an overall workforce plan.

Steve Piccolo, WSRC President/CEO

Steve Piccolo, WSRC President/CEO, began his presentation by thanking both DOE and Chuck Munns of SRNS for being so good to work with. He then went on to provide updates on various items:

He provided an update on liquid waste processing efforts. He reported that the liquid waste contract award has been announced and the transition is anticipated to be complete before the end of the first quarter of CY09.

Mr. Piccolo also provided a summary of operational accomplishments. He explained that the Defense Waste Processing Facility (DWPF) has begun preparing a new liquid waste sludge batch to process into the liquid waste canisters destined for Yucca Mountain. Overall performance at DWPF has been good, with a great safety record. He reported that DWPF has produced more than 10 million pounds of borosilicate glass – the final waste form of the liquid waste. Also, Mr. Piccolo explained that they maintain a standby melter in case the operating melter need replacing and that outage times are minimized to enhance their processing capabilities. Regarding tank closure, SRS has successfully completed their readiness reviews for Tanks 18 and 19 waste removal and have successfully deployed the sand mantis for mechanical cleaning. They have also been working with SCDHEC to determine if the chemical cleaning of Tanks 5 & 6 is adequate.

Mr. Piccolo also spoke briefly about budget and workforce matters. He explained that WSRC has worked closely with SRNS on the workforce restructuring issue, pointing out that WSRC has a lower target of a voluntary separation of 50-75 positions. In conclusion, he reiterated how well WSRC has been working with SRNS under Chuck Munn's leadership.

Dr. Vincent Van Brunt inquired about the status of Tank 48, which needs to have benzene removed from its components before it can be returned to service as part of the liquid waste vitrification process.. Mr. Piccolo responded by explaining that some progress on determining a method to treat the benzene has been made. They are anticipating that by the end of the 2nd calendar quarter, the Department of Energy will have sufficient data to make their final determination on a removal process.

Duke Energy Operations

Dr. Dhiaa Jamil, Executive and Chief Nuclear Officer, Duke Energy, provided an overview of Duke Energy's nuclear operations. He showed slides that outline Duke Energy Carolinas' service territory and pointed out that it includes 7 nuclear units with 6,996 megawatts of generating capacity. He also reported that more than 50% of Duke Energy Carolinas' generation in 2007 came from nuclear power. Dr. Jamil provided more detail on each of the nuclear power plants run by Duke Energy.

- Oconee Nuclear Station: 3 units, station capacity: 2,538 megawatts.
- McGuire Nuclear Station: 2 units, station capacity of 2,220 megawatts
- Catawba Nuclear Stations: 2 units, station capacity of 2,258 megawatts (co-owned with NC Municipal Power Agency Number One, NC Electric Memberships Corporation, and Piedmont Municipal Power Agency)

Dr. Jamil explained Duke Energy's plans to expand their nuclear fleet. He provided an overview of the proposed William S. Lee III Nuclear Station in Gaffney, South Carolina. This would be comprised of 2 units with a station capacity of 2, 234 megawatts.

After providing additional details about the proposed facility, Dr. Jamil provided information about spent fuel management. He explained the Nuclear Waste Policy Act of 1982 and subsequent amendments and related activities, along with the status of Yucca Mountain. He then outlined the spent fuel management options at utility sites: reracking spent fuel pools, rod consolidation, transshipment and dry storage. He provided specific details on the dry storage implemented at the Oconee Nuclear Station and the McGuire Nuclear Station.

Dr. Jamil concluded his remarks with comments regarding U.S. spent fuel policy, specifically as it pertains to direct disposal versus recycling.

Ms. Karen Patterson pointed out that Duke Energy and Exelon are perhaps the only utilities in the country intending to construct new nuclear plants on greenfield sites. She inquired about what kind of public outreach Duke Energy has done regarding the new plants. He responded that Duke Energy Carolinas is fortunate to be operating in such a nuclear-friendly area. They have received great public support. He explained that at public meetings those in attendance who live in proximity to the site were most supportive of the facility.

Ms. Patterson followed up with a question about what the industry is doing to prepare the workforce. Dr. Jamil pointed out that the current workforce trends do not support the workforce needs that will accompany a nuclear renaissance. He explained that the jobs in the nuclear field require highly specialized skills. He explained that efforts are underway to create nuclear clusters. Duke has teamed up with local colleges and the Nuclear Energy Institute (NEI) to better address these growing workforce needs.

Dr. Jamil's presentation is posted on the Nuclear Advisory Council webpage.

Status of MOX and WSB Projects

Mr. Clay Ramsey, NNSA-SRSO, began by providing a presentation on the progress of the MOX Fuel Fabrication Facility. He reported that the project is 32% complete overall, with facility construction 10% complete. He also pointed out that project safety continues to be excellent, with nearly 1,800,000 continuous safe work hours. Mr. Ramsey also explained that process building construction continues on schedule.

He then went on to explain that in November 2008, the NRC issued their Assessment of Applicant Performance, covering the period of October 2006 through September 2008. This assessment concluded that construction activities were conducted safely and in accordance with certificate requirements. He pointed out that while no areas were identified requiring improvement, there were five notices of violation (NOVs) against MOX services, all categorized as Level IV, the lowest severity level. Mr. Ramsey pointed out that no response was required to address these violations. However, he went on to provide an overview of each of the incidents to the Nuclear Advisory Council.

Mr. Ramsey then provided a schematic showing the status of the MOX facility, including which sections were complete, which were under construction and which were still in the planning phase. He then showed numerous photographs of various aspects of the construction projects.

Mr. Ramsey's presentation is posted on the Nuclear Advisory Council webpage.

Tank Closure Program at SRS

Ms. Sherri Ross, DOE-SR, provided an overview of the liquid waste tank closure program underway at the Site. She began her presentation by outlining the objective of this program: to empty, clean, and stabilize residual contaminants in the tanks to meet commitments for tank closure while minimizing human health and environmental impacts. She also explained that the scope of this project included two tank farms, comprised of 51 tanks and various equipment and underground transfer lines.

Ms. Ross then provided explanatory details on the bulk waste removal process. She showed a schematic that displayed salt supernate, saltcake and sludge and their respective curies and processing options. She also explained heel removal and cleaning methods used, including WOW (Waste on Wheels), mechanical cleaning and chemical cleaning. Ms. Ross reported that there are four different types of tanks at the site. Ms. Ross outlined the various phases of activities required to complete tank closure, including the following:

- Phase I: Bulk Waste Removal (7 tanks completed)
- Phase II – Heel Removal and Tank Cleaning (2 tanks completed, 4 tanks actively underway, continue until DOE, DHEC and EPA agree to cease)
- Phase III – Characterize Residual (prepare closure documentation)
- Phase IV – Grout (2 tanks completed, 22 non-compliant by 2022, 49 total 2028)

She then outlined the process for decision making in the tank closure process, showing a flow-chart listing both area-specific and tank-specific actions. Ms. Ross then discussed the path forward in the tank closure process, including the continuation of bulk waste removal and treatment. She also pointed out that the focus will be on the closure of F Tank Farm for the near term. She also showed a slide with a photograph of the Sand Mantis mechanical cleaning device.

Ms. Ross' presentation is posted on the Nuclear Advisory Council webpage.

General Accounting Office's Review of Processing Nuclear Materials

Mr. Allen Gunter, DOE-SR, gave a presentation on the results of the General Accounting Office's (GAO) review of the Savannah River Site's processing of nuclear materials. He began by explaining that the purpose of his presentation was to present an overview of the methodology, results and recommendations from the GAO's review of nuclear material process, H Canyon/HB-Line, at the Savannah River Site.

Mr. Gunter provided some background on H Canyon, explaining that it began operations in 1955, processing nuclear materials for nuclear weapons and nuclear energy. He explained that DOE had originally planned to shut down operations in 2007, but the Deputy Secretary in August 2006 approved extending H Canyon/HB Line operations until 2019.

He explained that this GAO review was performed in response to a request from the Subcommittee on Energy and Water Development. This review was to include the following information:

- The types of material to be processed and associated costs.
- Waste generation and whether SRS facilities can process and disposition this waste.
- Compliance with safety and environmental requirements.

Mr. Gunter outlined the methodology employed, including reviews of plans, documents, cost estimates, along with interviews of key personnel.

The results from this GAO review included the following conclusions:

- No safety concerns with operating H Canyon/HB line through 2019, provided that DOE invests in the planned infrastructure upgrades.
- DOE's plan for processing these materials has several benefits, including environment benefits and cost savings.
- GAO identified several concerns, some of which were addressed in the form of recommendations.

Mr. Gunter briefly reviewed the recommendations resulting from this study. The recommendations included the following:

- Ensure all material requiring H Canyon/HB Line processing are identified.
- Develop a comprehensive cost estimate for operating H Canyon, including all waste storage and disposition costs.
- Direct SRS to develop a plan to ensure adequate personnel are available to complete the required safety analysis in a timely manner.

Mr. Gunter reported on how each recommendation was being addressed at the Site. He wrapped up his presentation with the following conclusions:

- H Canyon can be operated safely through 2019 to disposition Al-clad SNF, HEU, and plutonium.
- SRS has not, nor will not, process any materials without an adequate safety basis.
- SRS has made progress on upgrading H Canyon/HB-Line DSA (think this stands for Design Safety Analysis).
- EM has updated the cost estimate for dispositioning nuclear materials through H Canyon/HB-Line to include cost for waste storage and disposition.
- H Canyon has completed initiatives to minimize waste generation.
- SRS will continue work with the other sites within the DOE Complex to identify nuclear materials that will utilize H Canyon as the disposition pathway.

Mr. Gunter's presentation is posted on the Nuclear Advisory Council webpage.

South Carolina Department of Health and Environmental Control Update

Ms. Shelly Wilson, Federal Facility Liaison with the S.C. Department of Health and Environmental Control (SCDHEC), began her presentation by explaining that she would provide an update on two controversial issues, along with an overview of SCDHEC's general activities regarding the Savannah River Site.

She explained that Radiological Protective Action Guides were finalized in August 2008, after a public comment period. These guides have been put together by numerous federal agencies (Homeland Security, Federal Emergency Management Agency, U.S. Environmental Protection Agency) for the purpose of determining a plan of action in the event of a radiological emergency. These guides would be used to inform emergency responders how to deal with radiological issues.

Ms. Wilson explained that in October 2008, USEPA received a letter from various environmental organizations outlining concerns about these guides. One concern focused on the acceptable standards for exposure. She explained that the guidelines were based on a scientifically-determined risk and dose assessment, based on short-term exposure rather than long-term exposure. Ms. Wilson went on to explain that these are intended as guides for these emergency, short-term events. She also pointed out that SCDHEC is not constrained by these guides and could make more protective choices for a particular event, depending on the options available at that time. She reported that another aspect of the guides that was somewhat controversial was regarding the long-term clean-up goals. Ms. Wilson stressed that nothing in the guidance would override the state laws applicable to long-term clean up.

Ms. Wilson then addressed the issue of the recent media coverage of SCDHEC's role in the Savannah River Site. She stated that the series in *The State* newspaper contained several inaccuracies and suggested visiting the SCDHEC website for clarification of these issues: www.scdhec.gov/thefullstory/. She also explained that SCDHEC, in administering many of its environmental programs, works under the authorization and/or delegation from federal agencies and receives oversight from several federal agencies.

Ms. Wilson also provided an overview of the status of SCDHEC activities at the Savannah River Site. She explained that their activities at the site could be viewed in two categories: maintenance and improvement.

She reported that regarding ongoing environmental management, appropriate permits have been issued for management of air, water and waste. She also reported that regarding the cleanup of legacy areas:

- Over 500 potentially contaminated areas
- 36 million gallons of high level radioactive and hazardous waste (420 million curies)
- 12,000 cubic meters legacy transuranic waste
- Various legacy low level/hazardous waste streams

She also reported that over 60% of all contaminated sites at SRS have clean-up decisions in place.

Regarding legacy waste disposition, Ms. Wilson reported the following:

- Most streams have been dispositioned
- Remainder on a regulatory schedule

High Level Waste

- Only operating vitrification facility in complex, turning sludge into glass
- Other needed treatment facilities on regulatory schedule for operation
- Aging storage tanks on regulatory schedule for closure

Transuranic Waste

- Over 50% of initial volume shipped to a repository in New Mexico

Ms. Wilson concluded her presentation by outlining SCDHEC's involvement in energy independence and clean energy efforts, on regional, state and local levels.

Ms. Wilson's presentation is posted on the Nuclear Advisory Council webpage.

Closing Remarks

Chairman Rusche asked if there were any further comments or questions. After thanking all of the speakers, attendees and fellow members of the Nuclear Advisory Council, he adjourned the meeting.

Copies of meeting summary and presentations are available on the Nuclear Advisory Council webpage of the South Carolina Energy Office website: <http://www.energy.sc.gov>.