

Governor's Nuclear Advisory Council

Meeting Summary

Thursday, March 12, 2009

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

Council Members in Attendance:

Mr. Ben Rusche
Mr. Steve Byrne
Dr. Carolyn Hudson
Ms. Karen Patterson
Dr. David Peterson
Senator Greg Ryberg
Dr. Vincent Van Brunt
Rep. Tom Young

Attendees:

Jeff Allison, DOE-SR	Leslie Miner, Sierra Club
Scott Cannon, NNSA	Chuck Munns, SRNS
Ken Chacey, NNSA-SR	Jennifer Nelson, DOE-SRS
Tom Clements, Friends of the Earth	Peter Newby, MOX
Ginger Dickert, WSRC	Dave Olson, WSRC
Sam Glenn, NNSA-SR	Joe Ortaldo, SRS-CAB
Chuck Goerken, SRNS	Walter Sependa, SRNS
Allen Gunter, DOE-SR	Sheron Smith, DOE-SR
Doug Hintze, DOE-SR	Zack Smith, DOE-SRS
David Jones, Duke Energy	T.J. Spears, DOE
Sue King, MOX	Catherine Vanden Houten, S.C. Energy Office
Larry Ling, SRNS	Shelly Wilson, DHEC
Patrick McGuire, DOE-SR	

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 announced the resignation of Bill Mottel from the Nuclear Advisory Council. He praised Mr. Mottel and pointed out the significant contributions he has made to the work of the Nuclear Advisory Council.

Mr. Rusche then called for the approval of minutes from the December 11, 2008 meeting. The minutes of the December 11, 2008 meeting of the Nuclear Advisory Council were unanimously approved.

Senator Greg Ryberg then requested the opportunity to make a few comments. He explained that as a citizen of Aiken County and the state of South Carolina, he was unhappy with the decision to curtail the development of Yucca Mountain. He explained that South Carolina was willing in the 1940s and 1950s to temporarily host the disposal of these wastes as part of the effort to promote world peace. However, this was done with the assumption that it would be a temporary waste disposal site. He

argued that the closing of Yucca Mountain without an alternative solution is unacceptable for South Carolina and the nation. It was pointed out that a permanent solution is necessary to ensure the long-term energy independence of the United States.

Discussion ensued about this topic and several members of the Council expressed similar views. It was pointed out that the Secretary of the U.S. Department of Energy (DOE), Secretary Chu, will assemble a blue ribbon panel to recommend a permanent disposal option. Consensus emerged that stakeholders, including South Carolina, should be provided the opportunity to participate in the panels deliberations. After some discussion, it was agreed that a letter would be sent on behalf of the Nuclear Advisory Council to Governor Sanford encouraging him to request that South Carolina be represented in the stakeholders' group.

Remarks from Senior SRS Management

Mr. Jeff Allison, DOE-SR

Mr. Jeff Allison, DOE-SR, began his comments by explaining that he would convey the concerns raised about Yucca Mountain in the previous discussion to DOE-HQ. He also pointed out that his remarks would focus primarily on the American Recovery and Reinvestment Act (ARRA). He explained that the funding made available through this program will allow them to step up their progress to achieve greater success in the environmental cleanup and deactivation and decommissioning program. He pointed out that they will be able to begin implementation as soon as funds are received. Their projects will focus on decommissioning surplus nuclear reactor facilities, accelerate transuranic waste disposition, remediate soil and groundwater and complete area closures. He pointed out that the additional funding will enable them to accelerate the environmental clean-up of the Cold War legacy at the Savannah River Site. By cleaning up the environmental footprint they will be able to focus on long-term missions of energy independence, innovative technology, national security and sustained employment at the site. He also emphasized that safety and security at the site would remain top priorities.

Mr. Allison was asked if S.C. Department of Health and Environmental Control (DHEC) and U.S. Environmental Protection Agency (EPA) have sufficient staff to oversee additional clean-up efforts at the site. He responded by explaining that in planning these additional activities they have included the consideration of impacts on regulators.

Mr. Rusche briefly broke from the agenda to ask Representative Tom Young if he wanted to comment on the previous discussion regarding Yucca Mountain. Representative Young concurred that the Nuclear Advisory Council should send a letter to the Governor, as was discussed earlier. Representative Young also informed the group that he would file a concurrent resolution when the House is back in session asking that the General Assembly ask that the Governor support the issues raised by Senator Ryberg.

Mr. Ken Chacey, NNSA-SRSO

Mr. Ken Chacey briefly pointed out that most of the stimulus dollars are going to the Environmental Management side, rather than the National Nuclear Security Administration (NNSA) side. He also pointed out that he had attended a meeting at which various regulatory coordination issues were being discussed among DOE, EPA and DHEC, among others.

He outlined five topics of significance:

- Omnibus Bill was signed that funded plutonium disposition projects at requested levels.
- Have had high level of interest in the Site from several members of House Energy and Water Subcommittee, with several Site visits held or scheduled.
- Several reports have been completed. One report addressed several quality assurance issues at the site. These have been addressed at previous meetings and will be addressed in more detail by speakers later in this meeting.
- The General Accounting Office testified on the adequacy of DOE to meet project management requirements. DOE was well represented in this hearing and it was reported that the MOX Project was on cost and on schedule.
- There is a new site office manager at the NNSA site: Doug Dearolph. He will likely be introduced to the Nuclear Advisory Council at a future meeting.

He then provided an overview of the topics and the speakers who would be providing updates on the MOX, WSB and other aspects of their work.

Mr. Chuck Munns, SRNS President

Mr. Chuck Munns began by explaining that he would provide an overview of four issues of significance:

- The first quarter of this fiscal year has been the safest on record. Also, DOE recently completed a security review of the site – the most robust review in a decade – and the results were positive.
- The transformation of business processes and systems has been effective, with increased efficiency and risk-based management.
- They have submitted projects and are anxious to get started on implementation of the relevant provisions of the American Reinvestment and Recovery Act.
- He pointed out that the Site hosts a national laboratory that has tremendous expertise and experience in handling nuclear materials.

Dave Olson, WSRC President/CEO

Mr. Dave Olson began by pointing out that they recently received three awards: from the S.C. Manufacturer's Association, S.C. Chamber of Commerce, and the National Safety Council. He pointed out that the high-risk work that is being done is being planned and conducted safely and effectively.

He pointed out that WSRC's parent company, URS, is doing high-level waste work at all four sites where high-level waste is stored in the United States: Hanford, Idaho, West Valley and Savannah River. This has allowed for the sharing of lessons learned and increased consistency in terms of practices, processes, business approaches, applied technologies, and the like.

Savannah River Nuclear Solutions (SRNS) Transition Update

Mr. Jack Sependa, SRNS

Mr. Jack Sependa began by introducing himself as the Executive Vice President for Business at SRNS. He made a slide presentation that provides an overview of the highlights of the first 8 months at the Site. He briefly outlined the following topics and issues:

- Mr. Sependa explained both the vision as well as the mission of the Savannah River Site, also displaying chart depicting the SRNS organizational structure.

- He also outlined the top six priorities for the site: (1) safe & effective operations, (2) efficient operations, (3) grow and mature Savannah River National Laboratory, (4) human capital program, (5) site future/missions, (6) client/stakeholder relationships
- Status
 - Implemented “Zero Incidents” program, focusing on broad scope of Environmental, Safety and Health/Quality Assurance
 - Reinforced and improved existing relationships with regulators and stakeholders
 - Assumed responsibility for new scopes – smooth transition
- Results and Achievements
 - Positive results from two DOE-HQ security assessments
 - Best Occupational Safety and Health Administration safety performance on record (first quarter FY09)
 - DOE audit of radiological laboratory produced no findings – “first time” per lead auditor
 - Mr. Sependa also outlined various achievements, including: Received Early Action Record of Decision (ROD) for P-Area Operable Unit and Completed M-Area ROD which will lead to second area completion. Also, 5,408 Depleted Uranium Oxide 55-gallon drums from building 221-21F were shipped to Energy Solutions in Clive, Utah, with the first shipment arriving October 21, 2008.
- Mr. Sependa also outlined various activities regarding transformation of the site.
- Outlook for the Future
 - SRNL growing and fiscally able to stand alone as a true National Laboratory
 - Next generation workforce on site and in training
 - “State of shelf” business and management systems
 - Center of nation’s nuclear future
 - Compete and win management and operating contract for next five years

Mr. Sependa’s presentation is posted on the Nuclear Advisory Council webpage.

SRS Strategic Plan Update

Mr. Doug Hintze, DOE-SR

Mr. Doug Hintze, Assistant Manager in the Office of Integration and Planning, began by explaining that his organization is fairly new and has the responsibility of integration across the scope of the various programs at the Site. He provided a slide presentation to the Council on the Site-wide strategic planning process. He outlined the strategic themes of DOE and how they link to particular missions of SRS, providing a chart that depicts these linkages.

Mr. Hintze went on to explain in more detail the DOE strategic themes of energy security, nuclear security, scientific discovery and innovation, environmental responsibility and management excellence. He then outlined the various Savannah River Site programs and their respective visions and missions:

- Environmental Management (EM) Program Vision
- National Nuclear Security Administration (NNSA) Program Vision
- SRS Environmental Management Mission
- Environmental Management: Nuclear Material Mission
- Environmental Management: Waste Disposition Mission
- Environmental Management: Area Completion Mission
- Environmental Management: Savannah River National Laboratory Mission

- NNSA: SRS Missions

Mr. Hintze concluded by pointing out that the initial draft Strategic Plan was completed on January 31, 2009. The SRS Citizens Advisory Board was briefed on the planning process in December of 2008 and provided the draft Strategic Plan in February of 2009. He reported that they expect to incorporate comments and finalize the plan by May 31, 2009.

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

SRS Liquid Waste Update -- Salt Waste Processing Facility

Mr. Terry Spears, DOE-SR

Mr. Terry Spears, Assistant Manager for Waste Disposition Project with DOE-SR, provided an overview of the liquid waste disposition efforts at the site. He provided a status report on the sludge processing, salt processing and tank closure activities. Mr. Spears began providing some background by showing a schematic explaining the process for liquid waste disposition.

He explained that the Defense Waste Processing Facility (DWPF) has been operating since 1996 and reported on the sludge processing completed to date. He also outlined the status and the future plans regarding sludge processing.

Mr. Spears then reported on initial operation results of Interim Salt Processing activities. He pointed out that all radionuclide decontamination and organic carryover goals have been met. He presented a matrix showing both expected and actual results. Mr. Spears also outlined the batch operations plan for Interim Salt Processing. He also reported on the future Interim Salt Processing activities planned.

Finally, Mr. Spears reported on the Tank Closure Program, outlining both the mechanical cleaning process (with Sand Mantis crawler) and chemical cleaning process (with oxalic acid). He also outlined planned future activities regarding the Tank Closure Program, including specific tank farm closure plans.

Mr. Spears concluded by pointing out that a liquid waste processing strategy is in place, with sludge and interim salt treatment operations underway and SWPF under construction. He also pointed out that challenges are being tackled and tank closure activities are on track to meet regulatory commitments schedule. He also explained that ongoing collaborations and investment in new technology are essential to long-term success.

Discussion ensued about various aspects of the liquid waste disposition activities, including increasing efficiencies in salt waste processing as well as the health and efficiency of evaporators.

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

Mr. Zack Smith, DOE-SR

Mr. Zack Smith, Federal Project Director with DOE-SR, provided additional details on the Salt Waste Processing Facility Project. He began his slide presentation with an overview of the SRS Liquid Waste System, including an extensive explanation of the various processes. He then explained the annual funding requirements and project level milestones. He explained that \$275 million of project costs are

to cover contingencies. Mr. Smith then showed a series of aerial photographs, depicting the construction progress.

Mr. Smith then summarized the overall status of the project, with the following highlights:

- 90% design completion review completed.
- Started limited construction and early procurements September 2007.
- Deputy Secretary approved all construction work December 8, 2008.
- Current activities:
 - Basemat construction underway
 - Basemat rebar installation more than 60% complete
 - Drain pipe installation in basemat slab approximately 35% complete
 - Actinide Sorption Drain Tank basemat concrete slab and stem walls complete
 - Waste Transfer Enclosure basemat concrete slab complete

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

Status of MOX, PDCF, WSB Projects

Mr. Sam Glenn, NNSA-SRSO

Mr. Sam Glenn, NNSA-SRSO, provided a brief overview of the progress made on the construction of the waste solidification building. He explained that the project baseline and construction were approved December 10, 2008. He then outlined the overall schedule:

- Construction Start – December 2008
- Construction Complete – June 2012
- Ready for Hot Operations – May 2013

Mr. Glenn then showed a series of photographs depicting the construction progress.

Ms. Sue King, NNSA-SRSO

Ms. Sue King, NNSA-SRSO, began by providing an overview of the MOX Lead Assembly Program:

- Four Lead Test Assemblies (LTA) made from US weapons plutonium in France
- LTA to be irradiated for 2 cycles (~18 months/cycle) at Duke Energy's Catawba reactor with option for third cycle
- Visual inspections and some physical measurements to be performed after each cycle
- Hot cell destructive analyses to be performed on selected fuel rods after second and third cycle

Ms. King then reported on the current status:

- The lead assemblies completed two cycles of irradiation, with good fuel performance. The fuel rods performed well with normal growth.
- The overall assembly growth was higher than expected. Growth is normal, and the design includes allowances for growth. The growth posed no safety risk to the nuclear power plant.
- Analysis of assembly growth determined it is not specific to MOX fuel. Similar growth has been seen in other power plants with uranium fuel of a similar design.

In conclusion, Ms. King summarized the following:

- The MOX fuel rods performed well in two complete cycles.
- Assembly growth higher than expected determined not to be a factor specifically caused by the use of MOX in the fuel.

- New data will be incorporated into models and fuel assembly design.
- Additional inspections are still in process, as was originally planned.
- An additional cycle of irradiation is planned to provide more operating data in 2011.

Mr. Glenn's and Ms. King's presentations are posted on the Nuclear Advisory Council webpage.

Plutonium Consolidation and Disposition

Mr. Sam Cannon, DOE-SR

Mr. Sam Cannon, DOE-SR, provided an overview of the NNSA Plutonium Lifecycle Material Management: Nonproliferation-Plutonium Disposition. He began his presentation by outlining the plutonium disposition facilities and the relevant infrastructure. He summarized the status of the project and showed photographs of construction. Among the highlights he reported:

- "State of Art" Safety, Security, and Pu Production Capability
- Design provides a cost effective and sustainable solution
- Able to meet near term Pu disposition & other long term NNSA mission goals
- Supports NNSA responsive infrastructure goals & objectives
- Consistent with DOE Records of Decision for 2000 for Fissile Material Disposition 2008 Weapons Complex Transformation
- 65% Design Complete
- FY10 "In the Dirt" construction ready

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

Mr. Patrick McGuire, DOE-SR

Mr. Patrick McGuire, Assistant Manager for Nuclear Material Stabilization Project at DOE-SR, provided an overview of Surplus, Non-Pit Plutonium Consolidation and Disposition at the Savannah River Site. He explained that the focus of his presentation will be to report on the status of plutonium consolidation activities and to explain the plutonium disposition strategy.

Regarding the status of plutonium consolidation efforts, Mr. McGuire reported the following:

- Scope: 12.8 Metric Tons (MTs) of surplus, non-pit plutonium-239. Is in solid form (metal, oxide powder, scrap, and unirradiated fuel).
- Shipping and Storage: in DOE Standard 3013 Storage Container, except unirradiated fuel; in DOE 9975 Shipping Package (also storage); safe, secure transport trailers.
- Storage Location: in K-Area, existing reactor building, meets 2005 Design Basis Threat Guidance, under continuous surveillance to ensure safe storage.

Mr. McGuire then listed the facilities shipping the plutonium to the site and outlined the anticipated future storage capability:

- Shipping Sites
 - Savannah River – 910 containers (completed)
 - Rocky Flats – 1889 containers (completed)
 - Hanford – 2257 containers
 - Hanford Unirradiated Fast Flux Test Reactor Fuel – 13 casks
 - Lawrence Liver National Laboratory(LLNL) – 115 containers
 - Los Alamos National Laboratory (LANL) – 96 containers

- Potential Future Surplus Material Receipts (LLNL and LANL – 500 containers)
- Future Storage Capability
 - Pre-Conceptual Design for new Vault (ECD: Sept. 2009)
 - Within existing K-Area Reactor Building
 - 500 – 900 additional storage locations (3013 containers)

He also addressed the rationale behind plutonium consolidation activities:

- Allows sites to deinventory to meet regulatory commitments
- Significant cost avoidance (billions of dollars) to consolidate surplus nuclear materials at a single location
- Allows facilities to close, thus reducing the DOE national nuclear footprint (and avoid operating costs)
- Reduces risk to public and environment by consolidating to a single location
- Improves Homeland Security (by reducing the number of facilities to protect)

Mr. McGuire then outlined the plutonium disposition strategy, as follows:

- Scope: 12.8 MTs of surplus, non-pit plutonium
- Disposition Pathway (2-Prong Approach)
 - 7.8 MTs to Mixed Oxide Fuel Fabrication Facility (MFFF)
 - 5 MTs to H-Canyon/Defense Waste Processing Facility (DWPF)
- Plutonium Preparation (PuP) Project
 - \$500M capability to prepare plutonium for MFFF and H-Canyon
 - Install within existing K-Area Reactor Building
 - Mechanical Preparation (no chemical/liquid processing)

Mr. McGuire then summarized the rationale behind the plutonium disposition activities:

- SRS has existing, proven plutonium disposition capability (H-Canyon and DWPF) and high confidence in constructing and operating new capability (MFFF).
- SRS has a highly trained, qualified workforce with more than 50 years of plutonium processing experience.
- Eliminates need to design and construct new capabilities (expensive and redundant).
- Optimizes H-Canyon capabilities by dispositioning plutonium simultaneously with Spent Nuclear Fuel.
- Complies with Public Law to maintain H-Canyon in a state of readiness, and provide a disposal pathway out of South Carolina.

Mr. McGuire concluded his remarks by reporting that plutonium consolidation is 75% complete with a completion date of FY2013. A new vault may be installed to receive all non-pit plutonium. All plutonium is safely and securely stored in K-Area. DOE has a pathway for dispositioning plutonium out of South Carolina (H-Canyon/DWPF and MFFF). They are in the process of evaluating alternatives to optimize plutonium disposition.

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

Closing Remarks

Mr. Rusche asked if there were any further comments or questions.

He then asked Ms. Shelly Wilson of DHEC to briefly address the Council. She explained that through the American Recovery and Reinvestment Act , DHEC is anticipating an acceleration of cleanup efforts at the site. She reported that DHEC is gearing up to provide the necessary oversight.

Mr. Tom Clements of Friends of the Earth briefly addressed the Council. He commented on several issues that had been raised during the meeting. He acknowledged that some progress is being made on high-level waste issues. With regard to stimulus funding, he is concerned about how the dollars spent at the Site will be tracked. He also addressed the issue of plutonium disposition and consolidation. He raised the question of how many commercial power reactors would be using MOX fuel. He explained that there are no nuclear utilities with contracts to purchase MOX fuel. Mr. Clements also raised concerns about nuclear waste reprocessing. Finally, Mr. Clements encouraged the Council to add to the proposed letter to the Governor that South Carolina should not be a spent fuel site.

After thanking all of the speakers, attendees and fellow members of the Nuclear Advisory Council, Mr. Rusche adjourned the meeting.

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