SRS Citizen's Advisory Board

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Waste Management Committee

Aiken Federal Building, Aiken, SC
May 22, 2003

The SRS Citizens Advisory Board (CAB) Waste Management Committee (WMC) met on Thursday, May 22, 2003, 5:00, at the Federal Building, Aiken, SC. The purposes of the meeting were to provide a forum to share information and educate stakeholders on the Tailored Salt Processing Program and to address questions and concerns of stakeholders on the program.

Attendance was as follows:

CAB Members
-Bill Willoughby
-Harold Rahn

Stakeholders
Bill McDonell
Rich Smalley
Ernie Chaput
Todd Crawford

Rick McLeod*

Regulators
Keith Collinsworth, DHEC
David Wilson, DHEC

Vincent VanBrunt, NAC
Mike Schoener, facilitator

*CAB Technical Advisor
-WM committee members

DOE/Contractors
Joe Carter. WSRC
Ginger Dickert, WSRC
Sonny Goldston, BNFL-SW
Elmer Wilhite, BNFL-SW
Lyddie Broussard, WSRC
Kelly Way, WSRC
Jim Tisaranni, WSRC
Soni Blanco, DOE
Bill Clark, DOE
Terry Spears, DOE
Jerry Houghton, DOE
Bill Spader, DOE
Jim Cook. WSRC
Dennis Hayes, WSRC
Collin Austin, BNFL
Guy Griswold, BNFL
Ron Campbell, WSRC
David Hoel, DOE
Larry Ling, DOE
Susan Cathey, WSRC
deLisa Bratcher, DOE
Bob Hinds, WSRC
Jeff Newman, WSRC
Charlie Anderson, DOE

Bill Willoughby called the meeting to order at 5:00. He welcomed those in attendance and asked for introductions. Mr. Willoughby then explained that this meeting was designed for the CAB

and stakeholders to gain knowledge. He stated that he was glad that Dr. VanBrunt of the SC Nuclear Advisory Council (NAC) and Keith Collinsworth of South Carolina Department of Health and Environmental Control (DHEC) could attend.

He stated that he planned to talk to the group about the WIR lawsuit, but no formal presentation would be forthcoming. Mr. Willoughby stated that this meeting might provide the CAB WM Committee a basis for writing a CAB recommendation, if any is required. He encouraged the group to participate.

He then introduced Mr. Schoener, the facilitator, and turned the meeting over to him. Mr. Schoener explained the meeting process and facilitator roles. He made some minor adjustments to the agenda, then turned the meeting over to Susan Cathey.

Cost Benefit Analysis -Susan Cathey, Closure Business Unit

Ms. Cathey explained the low curie and actinide processing tank selection basis. She explained the technical basis of the selection and how the overall economic benefit is calculated. She illustrated how the overall high level waste program is planned then explained the High Level Waste (HLW) System Plan Development.

The System Plan is published each year. Various conceptual cases are developed based on constraints and assumptions. Each case is evaluated using technical models. These results are then fed into financial models, since these two models must be tied together.

Ms. Cathey detailed two of the models that WSRC uses in the technical planning process. These are the Glass Maker Model and the Spaceman II Model. Glass Maker confirms the sludge batch qualifications, confirms glass qualification specifications, and determines the number of canisters per batch. Spaceman II rigorously models each week of work and confirms the chemistry and space for the tanks.

Ms. Cathey then walked the group through the actual model. She explained how it models actual waste tank usage. She showed the group how to look at specific gravity of tanks. She demonstrated how the calculations are done and how the user can see where he is at any point in time.

She explained that the model is useful for both short term and long term planning. It has been used for 3-4 years now and is rechecked to make sure it is a good reality based model. The data isn't run every day, but is closely monitored with a mixture of sample data and SR's best process knowledge-which gives WSRC a very accurate picture.

Next, Ms. Cathey explained the financial modeling process. She showed how the financial model uses the data from the technical model, then the site's costs are estimated based on discrete scopes of work. The financial model looks at such things as tank schedule, cost estimates, operating times, and tank waste inventory to determine costs. She talked about the Performance Management Plan (PMP) and how HLW documented the changes in an Addendum called the *PMP Supplement to HLW System Plan Rev. 13 (U).*

She took the group on a short tour through the financial model and gave examples of how the model estimates the work defined from the technical model. She illustrated how the model used information from the technical model such as, "How much salt solution is to be processed through SaltStone (SS) in any given year", to determine how many SaltStone cells would need to be constructed, and how much material would be needed. These fincancial model computer-spread sheets are all crosstied. The model can show lead-time and the cost to fill each vault. Data can be escalated forward and placed in the correct fiscal year. There are other costs besides vault costs, such as material costs and operating staff.

Ms. Cathey demonstrated how the group works with the HLW tanks. The models help determine when HLW personnel need to get a tank ready to remove waste; the time frame, the prices, the isolations, etc. The model can actually show when grout is poured in tanks. Then it prices that out at any given point in time. In addition, the model gives a summary of the cost for various scopes of work.

Ms. Cathey next moved into a comparison of Life Cycle costs among the various cases.

She pulled two cases and looked at the savings. She pointed out the number of things that drive cost savings. She illustrated the portion of savings that is associated with pouring faster, sooner, and putting more glass in the canisters. She showed how long term surveillance plays in the analysis, as well.

She moved on to the Salt Tank processing order and how this was derived. She uses multiple criteria to determine the order. She must look at the entire HLW system, the tank availability, the processing capability, and the risk involved due to the tank age.

Next Ms. Cathey showed a summary of data, tank by tank. She illustrated how the program is sorted by waste removed, versus curies disposed, versus cost savings, versus cost savings per curie disposed. She continued by showing a series of charts comparing percent of curies disposed versus percent of volume removed from the tanks. She explained how the idea is to get the salt out of the way so the HLW program can continue to process sludge.

Ms. Cathey showed the group charts comparing various risks. She illustrated the old baseline as compared to the accelerated clean up. The primary benefit of the salt processing program is to allow the HLW to be stabilized much sooner into a waste form that presents much less risk to the environment.

She ended her presentation with the Long-term stewardship commitment.

Current Salt Disposition-Ginger Dickert, Salt processing program manager

Ms. Dickert explained the salt processing program elements to the group. They include the Low Curie Salt (LCS) program, the Actinide Removal Process (ARP), the SS facility, and the Salt Waste Processing Facility (SWPF). She explained the disposition path for each stream of salt.

She began with the Low Curie Salt program and followed with an explanation of the Actinide Eemoval Process. She took the streams through either SS or Defense Waste Procsessing Facility (DWPF).

Ms. Dickert stated that Tank 41 has been designated as the initial tank. The interstitial liquid removal has begun, but not without some issues along the way. She talked about how very slow this process is; draining only .3 gallons per minute. This interstitial liquid transfer takes a month.

Ms. Dickert explained that in January, the group had to revamp, and consequently now have established the Salt works fabrication shop. She talked about how this shop is a bottoms-up worker involvement approach in which the engineers work side by side with operators.

Next, she explained the low curie salt challenges. Ms. Dickert talked about the problems with draining, equipment failures, the length of transfers, and the high water usage. She stated that because they could not tie up a transfer line for 4 months, the workers had to stop and start the transfer numerous times. These actions resulted in the high water usage. The group didn't want to add water to the process, so they employed lessons learned, SRTC data, and various technology exchanges to revise and improve the process.

Ms. Dickert explained in detail how they were able to simplify the pumping system, decouple from other transfers, dedicate a transfer line, and improve the flushing techniques. She talked about the Tank 41 caisson and pump. She outlined and explained each of the essential features. She illustrated how the group built a new pump. They were able to rebuild in only two months pumps that are much more effective-both in cost and in use.

Next, she explained how the group looked at fabrication of an above grade transfer line--a hose in a hose. She illustrated how innovative the group was to come up with "out of the box" ideas to solve their challenges. The shielding is provided with Jersey barricades, DuraBlocks, water-filled B-25 waste boxes, and lead blankets. She mentioned how they put additional lead blankets where the barricades meet. In some areas, they put lead blankets on tank tops, or big legos (as she calls the DuraBlocks) to be filled with shielding of choice.

She told the story of another challenge with the DuraBlocks. On the Saturday that the dura blocks were installed, 25 of them leaked. The group took the Standard B-25's used on site and filled them with water to use as temporary shielding. This has worked well, with no issues. She added that the lines, if they leak, would go directly into the tank. She pointed out that obviously SR is finding ways to move the program forward safely, aggressively and cost effectively. She showed the committee the chart that illustrates the improved performance since using the revised approach.

Then Ms. Dickert illustrated how much more effective the revised installation of the Tank 50 slurry pump is now versus the traditional installation. She explained all of the Saltstone modifications next. She has established a two step project strategy. She plans to (Step one) provide mods for 0.1 Ci/gal processing and increased facility reliability and (Step two) provide mods for 0.4 Ci/gal processing and to initiate design for new vaults. The Waste Water permit was received today (5-22-03), and the group is working toward an 8/28/03 completion date.

Ms. Dickert talked about the actinide removal program status. She explained the 512-S restoration and modification project, the feed prep from Tank 3 (F-area), and Tank 49(H-area), the Tank 48 disposition and the 241-96 H modifications. Tank 3 is the first feed. The group is targeting feed readiness.

She mentioned that Tank 49 has high curie in it right now, and that the group has to be able to operate the evaporator to move the material. The salt heel allows Ms. Dickert the challenge of trying various salt heel removal technologies. She told the group that Tank 48 would be the feed tank to be used for the next stage of actinide removal. She has to get that material dispositioned in order to identify the right technology. She has set 10/1/05 as the goal to have that tank "freed up" and ready.

Ms. Dickert summarized by saying that her group is achieving results safely with the safe mission essential project application. She emphasized that with very simple equipment, they are getting predicted models. She added that this is a developmental program----managing risks and applying lessons learned. She stated that they are moving quickly, safely, aggressively, and on multiple tanks.

Open Discussion

When asked for comments, Mr. Collinsworth replied that these are the tools one would need when a decision point is reached. He believes all the support elements in place are good. He reiterated the DHEC stance from a permitting view; until the litigation is resolved, DHEC can not make a decision. However, the things that are going on illustrate that SR is ready to go. Whatever direction the lawsuit takes, DOE has made provisions. DHEC is still at an impasse with things they can do. Mr. Collinsworth then introduced David Wilson, who is the point person with policy issues and deals with the legislative contingent. He is very involved with the WIR decision.

Next, Dr. Van Brunt thanked the committee for including the NAC in these salt meetings. He stated that we all need to do things in the best interest of the state of South Carolina. The litigation issue must be resolved. It is his thought that looking at issues tank by tank and partitioning waste into the three streams seems to be consistent with a chemistry-based approach rather than a historical approach or an arbitrary definition of waste. His interest lies in the health and welfare of citizens of South Carolina.

Dr. VanBrunt added that he did not want harmful wastes to remain in the state. He also said that he did not want us to convince ourselves that we have all the answers. He used the Columbia space shuttle disaster as a good example. In order to reduce costs, NASA removed the knowledgeable engineers from operations and hired a new, young, and inexperienced crew. Their calculations clearly showed that there were no problems. They convinced themselves that there were no issues and, of course, there were issues.

When they had a chance to perform an observation, they chose not to. The important analogy here is to ensure that SR continues classification and characterization of tanks as they move forward. He wants to make sure SR still monitors on a regular basis. He stated he believes the amount of money spent on verification of facts is money well spent. There will be problems, he

said, unless you keep everything up to date. He believes that SR needs to know the dependents, variance, and risks on each major component.

Dr. VanBrunt stated that this salt process appears to be fairly innocuous. It seems to display incredible conservatism in terms of technology. He does not have a concern that some catastrophe is going to occur. He is more interested in not spending dollars going down a wrong path. An example would be the In Tank Precipitation (ITP) technology. With ITP, SR was certain they had the right approach and convinced themselves that they knew what they were doing. Dr. VanBrunt does not want SR to make that same mistake again.

When asked about the schedule, Ms. Dickert replied that she does not want to leave the group with the impression WSRC knows everything. SR has an aggressive risk management program where risks are identified and mitigation strategies are in place for simple risks as well as large ones. The things SR has learned are affecting the schedule. She continued, in the case of tehcnologies, SR is pursuing various technologies and running benchmark testing. SR plans to go from benchmarking to scale testing.

When Mr. Chaput asked about the site's prediction of the amount of cesium coming out with the interstitial liquid versus the total content of the tank, Ms. Dickert explained the process. The HLW program expected to dissolve this tank based on sample results. She believed the tanks would have between 06 and 01 curie per gallon per solution. These figures are all part of marrying-up that sample with the gamma-probe data and the geological model. She emphasized that she must always validate the sample. She clarified that the prediction was accurate, but the process is taking longer than anticipated.

Dr. VanBrunt made his second point-the first was clairvoyance, which we need to avoid.

He believes the approach is excellent. He didn't want to leave the wrong impression that he does not have faith in the technology, because he does. In addition, he thinks that the approach of looking at Hanford and other labs across the country is cost effective. He told the group not to exclude what has worked at other locations.

Dr. VanBrunt said that the NAC has endorsed DHEC’s being a party to the suit. Mr. Collinsworth clarified here that concerning the lawsuit legal, DHEC believes that someone needs to make a determination about the high level waste before the issue goes forward. The 20 million curies left in the state is another issue. He believes that the decision-makers need to be informed in order to make the needed determinations.

Mr. Willoughby made comments on the WIR. He stated that there are misunderstandings relative to the litigation. There is a motion to go for a hearing June 20 in Boise, Idaho. This hearing is limited to hearing by both parties for summary judgement. If the judge isn't ready to make a summary judgement, the case goes to trial. The first thing coming up is the judge’s appeal to see if he has enough information to give a judgement.

Secondly, if the judge gives a summary judgement, the party who did not prevail can appeal, and then the case goes on "forever". He then gave the group various web sites for more information.

The court case is located at http://WWW/d.us.courts.gov. Then search under case files-nonrestrictive. At this site, there are eighty-eight documents written in legalise.

Mr. Willoughby continued. In regard to the National Waste Policy Act-the requirements over that act excluded applicability to Defense Waste. It allowed the President (Reagan at the time) to make a decision as to whether he wanted some of the defense nuclear waste disposed of in commercial waste facilities. The decision he made allowed a commercial facility to be built and defense nuclear waste could be put there. This decision required the DOE secretary to allocate funds to the commercial facility appropriate to the waste DOE stored there.

The Plaintiffs (Snake River, etc.) have taken President Reagan's decision to allow some defense waste to be put in Yucca Mountain as a requirement that all HLW be put in Yucca Mountain. However, the law is very clear that defense wastes were excluded. So it is a question of whether "Does choosing that part of the waste be put in, does this require that all waste be put in?" This is one line of thinking DOE has underway. DOE says the requirement goes back to the Atomic Energy Act that required (at that time) Atomic Energy Commission (AEC), (then Energy, Research, & Development Agency (ERDA) and now DOE to be responsible for safe disposal of all radioactive materials. It doesn't say what kind, but it says radioactive materials. The states have agreed with DOE that all waste is not HLW in the definition of the National Waste Policy Act.

Mr. Collinsworth acknowledged that the state has agreed with DOE that all waste is not HLW in the National Waste Policy Act definition. The plaintiff says that anything that has been in contact with HLW is in itself HLW, and he added that DHEC diverges from that thinking. DHEC recognizes that SR is not going to get every molecule in a clean up state.

Mr. Collinsworth did question if DOE has the self-determining authority to make the determination of HLW. If it's not the law, then let's look at the definition of HLW. Is all liquid waste from first and second cycle HLW? The definition comes down to sufficient concentrations of fission products. The technical base must be established. If there is a ruling, we can get moving.

Mr. Chaput amplified what he said earlier. We need to know DHEC's expectation, the public's expectation, and the Governor's position of how far the site should go to put waste in Yucca Mountain and for what Yucca was designed.

Mr. Chaput continued. He thinks the questions of what it's worth to accelerate versus what it costs to leave in the state is an important one. There is a public policy question and an ALARA question. He believes DOE is walking away from ALARA. It's good for DOE, but not for the state. He feels better about SR's ability to manage the waste for the next fifteen years instead of trying to project out and say what the additional increment is going to be two hundred years in the future. He has much more confidence in the near term versus the long term. In the past, DOE has acted to clean things up, only to have to go back and redo it. DOE needs to do the job right the first time.

Mr. Chaput has long-term residual concerns and these need to be studied. If the analysis were correct, it focused on the incremental costs and risks. That was good. But, if someone ran all the salt through the actinide process, he would take additional nuclides and put them into vitrified form or to SaltStone. Mr. Chaput doesn't know if this is a viable option or not. He asked the site reps what they could do to work on these portions in their current planning. He asked them if there were other intermediate actions they could take to clean up the waste streams. He asked what they could do to clean up waste stream with an associated cost. He struggles with the "less is better" concept.

Mr. McDonell pointed out that to determine the final disposition path of all the waste, the site did a Performance Assessment (PA). He believes the ultimate basis should be based on the P.A., and he believes this is exactly what the site is doing. He said that the whole concept of SS disposal came up under a different branch of thinking. The site is utlizing the PA to determine whether or not these judgements are acceptable. He doesn't think ALARA is a good basis to use. Mr. Willoughby added that in his memory ALARA, had to do with releases to the "outside" world.

Mr. Willoughby asked several clarification questions and Ms. Cathey and Mr. Spears explained the three salt streams and their disposition paths. Ms. Cathey added that even with the SWPF facility on line, every process that handles salt, would still send a stream to SS. She reminded the group that the SWPF won't be in place until 2010.

Ms. Cathey added that removing waste from old style tanks earlier is more important. The tailored salt program is the only thing that the site has within its reach to disposition waste in a timely manner. Mr. Spears added that SR has a suite of technologes that it can use. If HLW encounters problems, the Salt program has other technologies to fall back on.

Dr. VanBrunt added that his goals and thinking are in terms of chemistry. If he could be convinced that there were no significant risk differences, then what is the difference between 20M versus 5M or the integrity of the SS versus how long SS poses a radiation concern with the pubic. These questions are answered in the PA.

He added that the difference in the cost was not a concern to him. The schedule and time management are the major issues. His question remains; is the site reducing the total long-term risk to the public in every possible way? That's the bottom line. Operating in that fashion, the money doesn't mean anything to Dr. VanBrunt.

Mr. McLeod asked what actions were being taken in the lawsuit interim. Ms. Dickert answered that the program is doing everything it can up to introducing salt. She added that if the "OK" were given, the program would be ready to roll.

Mr. Goldston offered the group a presentation of the performance of the waste in the long term.

The committee discussed the best avenues to work on the salt program. The group decided that it would deal with these issues at the committee level.

Mr. Willoughby asked for further comment. There being none, he adjourned the meeting at 7:30.