



Chemical Demilitarization Citizens' Advisory Commission
Chemical Destruction Community Advisory Board
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Doug Hindman
Chair

Reagan Taylor
Craig Williams
Co-Chairs

**Kentucky Chemical Demilitarization Citizens' Advisory Commission (CAC) and
Chemical Destruction Community Advisory Board (CDCAB) Meeting
Summary of Action Items and Discussions
Dec. 9, 2015
Eastern Kentucky University (EKU)
Richmond, Kentucky**

Attendees

CAC: Tonita Goodwin, Doug Hindman, Mark Klaas, Harry Moberly and Craig Williams

CDCAB: David Benge, Robert Blythe, Jeff Brubaker, Michael Bryant, Tonita Goodwin, Jeanne Hibberd, Doug Hindman, Ron Hink, Mike Hogg, Leslie Kaylor, Mark Klaas, Howard Logue, Bryan Makinen, Harry Moberly, George Shuplinkov (for Col. Lee Hudson), Regina Stivers (for U.S. Sen. Mitch McConnell, R-Ky.), Reagan Taylor, April Webb, Craig Williams and Ethan Witt (for U.S. Rep. Andy Barr, R-Ky.)

Media Attendees:

The Richmond Register: Bill Robinson

Meeting Synopsis

The meeting provided information on the following:

- Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) Year in Review and Update
- Supercritical Water Oxidation (SCWO) Path Forward and National Academies of Sciences, Engineering, Medicine (formerly National Research Council) Hydrolysate Report Update
- Secondary Waste Working Group (SWWG) Waste Codes Update

Meeting Summary Structure

This meeting summary is not intended to be a verbatim record of conversations, but instead will provide an overview of the discussions and action items of government

representatives and various members of the CAC and CDCAB. Key action items identified in the meeting and a synopsis of the major questions and comments discussed during the various updates are noted below. Copies of slides and handouts presented during the meeting can be obtained from the Blue Grass Chemical Stockpile Outreach Office (ORO) at (859) 626-8944 or bgoutreach@iem.com.

Action Items

Action Item: Report updates on the SCWO weld issue.

Responsible Entity: Ron Hink, Project Manager, Bechtel Parsons Blue Grass (BPBG).

Timeline: By March 9, 2016.

Action Item: Address group concerns regarding National Academies’ language on SCWO functionality formally through the committee. Clarify language in the National Academies’ Recommendation 7-10.

Responsible Entities: Jeff Brubaker, Site Project Manager (SPM), BGCAPP, and Craig Williams, Co-Chair, CDCAB.

Timeline: By March 9, 2016.

Outline of Key Issues and Discussions

Welcome and Introductions – Sarah Parke, Manager, ORO

Parke welcomed the attendees, reviewed the meeting agenda and noted the following action items from the Sept. 9, 2015, CAC/CDCAB meeting:

Action Item	Steps Taken	Date/Status
Reschedule the previously scheduled CAC/CDCAB tour.	The tour was held Dec. 1.	Complete
Supply list of proposed rocket motor testing sites.	The ORO provided this information via email Oct. 16.	Complete
Provide project employment diversity metrics.	The ORO provided this information via email Nov. 9.	Complete
Provide waste-code change recommendation to Conrad Whyne, program executive officer, Assembled Chemical Weapons Alternatives.	Williams will update the group in his briefing.	Complete

Opening Remarks – Doug Hindman, Chair, CAC, and Reagan Taylor and Craig Williams, Co-Chairs, CDCAB

Hindman welcomed attendees and said the recent plant tour was very impressive and he thought it was nice to see it officially finished. Taylor said he was impressed as well, and introduced Howard Logue, the new Madison County Emergency Management Agency director. Williams said Diane Kerby and Tara Long were unable to attend the meeting.

Key Updates

BGCAPP year in Review and Project Update – Jeff Brubaker, SPM, BGCAPP, and Ron Hink, Project Manager, BPBG

Slides of this presentation may be obtained by contacting the ORO at (859) 626-8944 or bgoutreach@iem.com.

Brubaker introduced Hink as the new BPBG project manager. Brubaker and Hink then updated the group on main plant and Explosive Destruction Technology (EDT) progress. Brubaker showed the 2015 Year-in-Review video. He said the BGCAPP construction-complete status was a team effort and the plant is now focused on testing. He and Hink reviewed project highlights from 2015 and noted truckloads of test munitions have arrived for testing purposes. They are projectiles to support Static Detonation Chamber (SDC) testing in mid-2016 and rockets for the main plant in later 2016. Hink provided project safety statistics and said the numbers were very good. Brubaker noted the Dec. 14 environmental permitting public meeting for treaty sampling; to address recent design changes for cyanide removal and the removal of munitions wash-out; and Revision 6 of the facility's Research, Development and Demonstration permit.

Craig Williams recapped that on all three of the above topics, the CAC/CDCAB has provided recommendations to the Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA), but noted the group does not have comments in to the Kentucky Department for Environmental Protection (KDEP) on the permit modifications.

Brubaker noted the Utility Building boilers and the Standby Diesel Generators are the final utility systems to be brought on line, and that will be upcoming in 2016. He said the munitions washout design modification is complete and the related construction of hardware is almost complete. Brubaker said the Laboratory will support mustard-agent operations in 2017 and nerve agent operations when the main plant comes on line. Brubaker then discussed the rocket motor testing. He gave some background on the subject and said when the site or sites are chosen for the testing they will conduct a pressure test to determine how the steel casing around the propellant will fail under destruction conditions, then a rapid heat-up test to verify the rocket motors will burn as

designed and not explode. Four motors have been shipped to the U.S. Army Aviation and Missile Research, Development and Engineering Center at Redstone Arsenal in Anniston, Alabama. Additional motors will be tested at the Anniston Army Depot's SDC and the Blue Grass Army Depot's D-100 Controlled Detonation Chamber. Brubaker then said there are proposed legislative language changes to the project's N-listed waste codes shortly to be introduced to the legislature and Williams will speak to that in his presentation. Hink updated the group on the EDT project and said the underground work was largely complete, site construction was progressing and they are on plan for a mid-2016 site acceptance test. They then discussed a look forward for the EDT project.

David Bengé asked if projected salaries were for local personnel, and the definition of "local." Brubaker said the projected salaries are for personnel working on the project in Richmond, and that "local" is everyone working on the plant site in Richmond, no matter where they come from.

Robert Blythe noted that the manifestation of the move from construction to systemization is being seen in the community, with some people moving on to follow other construction jobs. Brubaker said construction workers were demobilized when the construction phase ended, but the project has started hiring EDT operators and hiring will increase for the main plant in 2016.

Williams asked whose approval was needed for the treaty sampling site plan. Brubaker said the Department of Defense Explosive Safety Board's, but that document is reviewed by multiple organizations before it gets to them. He said it is a standard document and the process should be complete around mid-2016. Williams asked if it was similar to the Organisation for the Prohibition of Chemical Weapons (OPCW) process. Brubaker said it is similar but focuses on siting to avoid explosive hazards, and the OPCW has already approved the concept of the process that will be utilized.

SCWO Path Forward and National Academies Hydrolysate Update Report – Dr. George Lucier, Deputy Chief Scientist, BPBG

Lucier provided an update on the National Academies' hydrolysate committee report and recommendations and the identification and addressing of SCWO risks. He gave background on the hydrolysate report and clarified the situation for the group. He said the plant will generate hydrolysate as a byproduct of the nerve-agent destruction process and there is only so much room in the storage tanks to hold it before it is processed through SCWO. PEO ACWA requested the National Academies look at this process and make sure the system can support the plant. The National Academies believes there is a good risk mitigation system, but if there is a problem with the SCWO system, that could stop the neutralization process. The National Academies recommended a back-up process in this event. He discussed specific recommendations of the report. He said BGCAPP's response is that BPBG and PEO ACWA both agree with the National Academies' evaluation and will support engagement with stakeholders, but that Plan A continues to be to process hydrolysate through SCWO. He noted the forming of an internal SCWO

working group that regularly meets to identify, evaluate and address risks related to the SCWO process. They came up with recommendations addressing potential gaps, published reports and created a schedule for the plan to address the identified recommendations. He said one newly identified issue was the quality of the welds on the SCWO equipment, including the high-pressure air system and the blend tanks, that a number of the off-site subcontractor's welds do not meet project specifications, plus some radiography of the welds has become unreadable and has to be redone. A subcontractor is on site to assist with this effort.

Blythe noted the use of the term "off-site" and said it took him back some years to previous "off-site" discussions. He wanted to know if "off-site" meant going from the BGCAPP site to the Blue Grass Army Depot, or off the depot entirely. Lucier said he understands there is no facility on the depot that can address this issue.

Benge asked if the issue had to do with the waste that accumulates from the SCWO process and if it is known where it will go. Lucier said the plan is to process hydrolysate through the SCWO system and explained how the quench process will introduce water into the SCWO process, which will increase the amount of water that exits the process. The reverse osmosis (RO) system will reduce that amount, but the RO reject numbers (water that will not be recycled back into the quench process) will be larger than the original hydrolysate numbers. RO reject will include metals and titanium dioxide. The titanium will come from the reactor itself, as its titanium liner and thermowells (wells in which thermocouples are placed) are corroded by the solution. A specific plan is not yet in place for disposal of the RO reject water.

Taylor asked if it were safe to say 30 percent of the product of the SCWO system gets shipped off. Lucier said yes.

Jeanne Hibberd said as a member of the public with no additional knowledge she would be alarmed by this, that the project is now saying a back-up plan needs to be in place to make SCWO work. Brubaker gave a detailed explanation about the fabrication, testing and risk identification process, noting the 33 critical and 33 recommended-to-complete system recommendations, and said there is a planned, time-phased approach for addressing those risk items. He discussed Conrad Whyne's focus on the post-treatment systems at each of the two sites and why he decided to have the National Academies look into both of them. Brubaker emphasized the National Academies speaks very highly of the SCWO process and project leadership feels the same, but they need to be able to keep the main plant running once it is in operations and have to look at possible failure points that might keep it from doing that. Brubaker said the weld situation is an example of something BPBG/BGCAPP never expected to become a problem; however it has become one. Lucier emphasized SCWO is a post-treatment system and agent or anything with an agent characteristic will not be processed through it.

George Shuplinkov asked if other Hydrolysate Storage Area tanks could be used to increase hydrolysate storage. John McArthur said the tanks will be used for storage during other campaigns, so there will not be a lot of tank space available.

Harry Moberly asked if the same subcontractor who performed the unacceptable welds had done other work at the plant. Brubaker said yes, they had discovered the weld-quality situation on the Energetics Batch Hydrolyzers (EBH) and made the connection with their work on the SCWO system. He gave specifics about the number of welds originally done, those reviewed and those that need redoing, and the fact that some radiographs of the welds were unreadable. He said they are reshooting some welds and will have an expert evaluation of all of the radiographs. The EBH work is done and the focus is on the SCWO system. They have put a top-level expert welding subcontractor on the issue. Moberly asked if the weld issue had been reported to the CAC/CDCAB. Brubaker said yes. Moberly then asked Williams the same question. Williams said yes. Moberly then expressed his opinion that the data provided appeared to be contradictory and smacked of incompetence. David Bengé asked if the process has been completed. Brubaker said it was still in process and will probably take several more months. Hink said they are using their success with the EBH weld-issue mitigation to drive the SCWO-issue mitigation. He feels it will be completely successful, but it will just take time and they are putting together timelines for that recovery.

Moberly asked how the weld issue was discovered and if it was through a scheduled inspection. Brubaker said it was a visual inspection, where they could see material in the weld was not present, and it was not a scheduled inspection. Workers were getting ready to do other welding and discovered it as part of their preparation. Moberly opined it would not have been discovered if that had not happened. Brubaker said it would have been, as all of the SCWO equipment covers are off now construction is over and in some places the insufficient welds can be seen with just a look.

Taylor asked if testing had been done on the affected equipment. Brubaker said yes, it was done preceding the 2012 factory acceptance test. He said in addition, it was all designed to meet requirements of pressure piping known in industry, and there are regulations that govern that.

Mike Hogg asked what quality control steps are being taken during the recovery process. Hink said Level 2 and 3 inspectors are overseeing the operation and reading every film and doing 100-percent imaging. He said the repairs are being done by high-end specialty welders who do this kind of work for a living, and he expects the quality to be quite high. Brubaker said the EBH was mostly carbon-steel piping, which is very common and some of the easiest material to work with. In contrast, the SCWO system uses [Inconel](#) and [Hastelloy](#), very different kinds of materials that require a great deal of expertise. Hogg asked what failed with the welds. Hink said there were voids in the weld spaces, which could have been attributed to technique or material. He approximated a 30-percent weld failure rate and noted the biggest challenge will be to source the materials. Moberly wanted to be reassured that these events did not signify a lapse in overall plant quality. Hink said the problem was a flow-down issue to sub-tier fabricators. They have asked themselves that question and are comfortable there is not any more of this issue in the plant. Brubaker said updates on this topic will be provided going forward. Taylor wanted to know if the subcontractor will be held accountable or if taxpayers will be paying for it

twice. Brubaker said it was early, but they are working the issue. He noted the subcontractor had been largely paid and their sub-tier welding contractor is already referring questions to attorneys. Hindman wanted to know if this would affect the plant schedule. Hink said they are aggressively pursuing repairs, but the biggest challenge will be sourcing the materials. Williams ventured to say recovery of cost is above the authority of the local project.

Williams made a statement to keep in mind that first and foremost in the SCWO off-site shipment issue, the material being shipped is non-agent contaminated and any connection to the historical munitions transport issue is moot. He said to recall this issue was raised a while back and emphasized it is a contingency plan, and that the CDCAB sent a recommendation to Whyne that it agreed with having that Plan B in place. He reiterated the group has been engaged in every aspect of this plan including the recommendation they forwarded to Whyne with the caveat they want to continue their engagement in this process to include conducting outreach with the off-site disposal facility. He gave an overview of the situation in his words and said although not ideal, he thinks the group is in the best position it can be at this point. He steadfastly opposes the shipment of anything unless it is absolutely necessary, but questioned opposing shipment so much that it holds up main plant processing. He said in closing that everyone (National Academies, BPBG, etc.) has been exemplary in this situation.

Moberly noted the language used in the National Academies recommendations, specifically 7-10, and said he does not get an idea of great confidence in SCWO. He said the language does not reflect what was said in the meeting and that "fishy" language like this does not inspire his confidence in the rest of the project. Williams said he would work with PEO ACWA to express the group's concern with the language. John Barton said part of the National Academies' concern is the water recovery system is an off-the-shelf system and does not have test data yet. Barton said systems like it are effectively processing sea water all over the world and this waste water will not be as difficult to process as seawater.

SWWG Waste Codes Update – Craig Williams, Co-Chair, CDCAB

Williams said the group has "reached the place they needed to reach" with this. He gave some background on the issue and said the group realized that there were types of wastes that did not need to be covered by the original acutely toxic designation. The group met on Sept. 9, 2015, and agreed to engage in the modification of the waste codes. They sent a letter to Whyne to this effect. He said they worked through the issue with BPBG, PEO ACWA, KDEP, attorneys and hazardous waste experts to modify the original regulation to a reasonable rework to address this process while preserving the highest safety standards. This rework has been pre-filed with the state Senate and the House ahead of the January legislative process, which was necessary to do now because of the upcoming EDT operations. He said language was added to designate this situation an emergency so it would clear quickly due to the EDT schedule. He said he has discussed this with several legislators and does not see a problem. He emphasized one of

the primary reasons for doing this is to keep emergency responders from having to respond in inappropriate ways if there were an issue on the roadways with waste shipments.

Closing Remarks – Doug Hindman, Chair, CAC, and Reagan Taylor and Craig Williams, Co-Chairs, CDCAB

Hindman wished everyone a merry Christmas and Williams thanked attendees for their patience.

Next CAC and CDCAB Meeting

The next meeting is scheduled for Wednesday, March 9, 2016, at 1:30 p.m. at the ECU Carl D. Perkins Building, Rooms A and B.

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