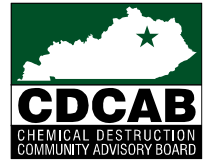




Chemical Demilitarization Citizens' Advisory Commission
Chemical Destruction Community Advisory Board
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Richmond, KY 40476
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Doug Hindman
Chair

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
March 4, 2020
Eastern Kentucky University (EKU)
Richmond, Kentucky**

Attendees

CAC: Doug Hindman, Diane Kerby, Harry Moberly, George Ridings, April Webb (for Jon Maybriar) and Craig Williams

CDCAB: Robert Blythe, Chuck Cash, Dr. Candace Coyle, Jim Davis, Judy Greene-Baker, Jamie Hall (for Lt. Col. Rodney McCutcheon), Diane Hatchett, Dustin Heiser, Jeanne Hibberd, Doug Hindman, Ron Hink, Leslie Kaylor, Diane Kerby, Mark Klaas (for Michael Dossett), Col. Joseph Kurz, Tara Long, Harry Moberly, Stephanie Nelson (for U.S. Sen. Mitch McConnell), George Ridings, Mica Sims (for U.S. Sen. Rand Paul), Tyler Staker (for U.S. Rep. Andy Barr), April Webb (for Jon Maybriar) and Craig Williams

Media Attendees:

The Richmond Register: Taylor Six
WKYT-TV: Darnell Crenshaw

Meeting Synopsis

The meeting provided information on the following:

- Remarks from the Program Executive Office, Assembled Chemical Weapons Alternatives (PEO ACWA)
- Blue Grass Chemical Agent-Destruction Pilot Plant (BGCAPP) Project Update
- Supercritical Water Oxidation (SCWO) Update
- Kentucky Department for Environmental Protection (KDEP) Permitting Updates

Meeting Summary Structure

This meeting summary is not intended to be a verbatim record of conversations; instead, it 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: Provide number of workforce affected if the decision is made to not use SCWO.

Responsible Entity: Ron Hink, Bechtel Parsons Blue Grass (BPBG) project manager.

Timeline: By June 10, 2020.

Sarah Marko, manager, ORO, also noted she has vetting forms with her for anyone who might need one to enter the BGCAPP mall office for the March 31 Economic Impact Working Group meeting.

Outline of Key Issues and Discussions

Welcome and Introductions – Sarah Marko, Manager, ORO

Marko welcomed the attendees, reviewed the meeting agenda and noted the following action items from the Dec. 11, 2019, CAC/CDCAB meeting:

Action Item	Steps Taken	Date/Status
Consider advertising open project positions in local newspapers	BPBG placed three advertisements on radio and in newspapers including <i>The Richmond Register</i> front page overfold in the Feb. 29-March 1, 2020, weekend edition.	Complete.
Provide waste transportation presentation to Robert Blythe's organization	ORO staff is working with Blythe to secure a date for a presentation.	Complete.

Opening Remarks – Doug Hindman, Chair, CAC; Craig Williams, Co-Chair, CDCAB; and Dustin Heiser, Director, Madison County Emergency Management Agency (EMA)/Chemical Stockpile Emergency Preparedness Program (CSEPP)

Doug Hindman wished attendees a good afternoon. He said CAC and CDCAB member Sheila Pressley had passed away and that it was a big loss for the group and for ECU. He noted he will need to recommend a new member to the governor and if anyone has someone to suggest, please let him know.

Craig Williams welcomed everyone and thanked Michael Abaie, program executive officer, PEO ACWA; Nick Stamatakis, deputy program executive officer, PEO ACWA; and Col. Joseph Kurz, commander, Blue Grass Army Depot (BGAD) for their attendance. He said he appreciated their continued engagement and regular visits to the meeting.

Dustin Heiser welcomed everyone and said Reagan Taylor, co-chair, CDCAB, and Colleen Chaney, deputy judge-executive, Madison County, gave their regrets for not being able to attend. He said Taylor and Chaney appreciate Kurz's work with them on the future of the county post-CSEPP. Heiser noted it was Severe Weather Awareness Week.

Rev. Robert Blythe, mayor, City of Richmond, provided information on his experiences with the recent tornado in Nashville, Tennessee.

Key Updates

Remarks from the Program Executive Office, ACWA – Michael Abaie, PEO, ACWA

Abaie said he was thankful to attend and that a lot has happened since the last meeting, with the main plant now operational and the Explosive Destruction Technology (EDT) processing mustard munitions. He said the team is working with Kurz and BGAD, the Blue Grass Chemical Activity, KDEP and other stakeholders. The collaboration is allowing the plant to process chemical weapons as it is designed to do and, most importantly, reducing the risk to the community from the aging chemical weapons. He recognized the work of the systems contractor in destroying chemical weapons.

BGCAPP Project Update – Dr. Candace Coyle, 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.

Marko played the BGCAPP Start of Main Plant Operations video (<https://www.youtube.com/watch?v=IVFa256zHV0>) for the group. Coyle said the video

tells the story of where the plant is right now. She provided the current destruction numbers of 19.2 U.S. tons or 3.66% of chemical agent destroyed. She said that of the 3.66%, 3.43% is mustard agent and 0.23% is GB nerve agent. Coyle noted a great deal of teamwork across project stakeholders and expressed her appreciation. She said this is the first time in more than a decade that nerve agent has been processed in the U.S. and BGCAPP is making history by being the only demilitarization plant to process two agents at the same time. Coyle provided a main plant overview and said the first projectile was safely punched and drained on Jan. 17. She said the amount of liquid nerve agent to be drained from each projectile had been underestimated; instead of the 14.5 pounds predicted, the drain is capturing 16 pounds. Coyle then discussed the EDT facility and said EDT emissions testing concluded in mid-January. The testing demonstrated 99.999999% (eight-nines) Destruction and Removal Efficiency, which was two more decimal places better than they expected (six-nines). She said the destruction target during testing was six projectiles per hour, but the actual ended up being 5.8. Coyle said she appreciates KDEP's partnership on the testing and said the plant was able to move from 50% to a 75% processing rate due to the first draft of the results being released. She said the 100% processing rate should be possible when the complete results are released. Coyle noted the Levenstein mustard has been a problem as it was degrading the original seals, so they have replaced the seals with different ones and have gone six days now with the new ones but still have issues. She then provided information on the Static Detonation Chamber (SDC) 2000 site and said the ground has been broken and earth is now moving. She said 60% of the design is complete and the review of it went very well. She said the delivery, installation and systemization of the system should be complete by the end of 2021. Coyle then said the SDC 2000 will incorporate a new design for sealing the main detonation chamber using hydraulic clamps, which should alleviate a lot of challenges they have been having with the existing SDC, and a whole overpacked rocket can be fed into it. She said the SDC 2000 will also be helpful as the technology to destroy the punched and drained rocket warheads from the new rocket processing system. She then provided a permitting update and thanked KDEP for their efforts. Coyle then explained the decision to have the main plant start in January to support the arrival and staging of rocket processing equipment before operations was the right choice. She provided information on rocket warhead fuze removal activities and said ACWA requested them for testing at the Anniston, Alabama, SDC facility in support of rocket processing changes, to ensure the SDC can safely destroy a containerized rocket warhead with equivalent energetics loading. Hink provided information on safety and said there have been some challenges due to the start of the main plant, as the plant has moved from test conditions into agent conditions. He noted personnel made 75 toxic area entries in the first 30 days. Hink provided the safety numbers and said they were very good for hazardous work but the project always strives to do better. He noted staffing remains around 1,300 and will stay around that number for the next few years. Hink then said there was not a lot of movement in the diversity numbers and provided the minority breakdown. He said the project is looking more heavily toward military recruiting as military members have good discipline and training. He said AECOM has changed its name to Amentum but there is no change to personnel or the team and provided a list of open positions within the joint-venture companies.

Williams said he provided a project update to the Berea City Council the previous evening and some citizens crunched the numbers and approached him about the end date of the project, which they thought would be later than the Dec. 31, 2023, deadline. He said he explained things go more slowly during ramp-up periods and the plants are having less throughput rate and destruction capability than they will have at a later stage.

Williams asked the main cause of the toxic area entries and if there was a pattern to them. Hink said he thinks the numbers (two to three per shift) are to be expected. Williams said it has been said before that the plant will run into things that have not been anticipated, just as in any industrial operations.

Williams asked Coyle if the current configuration of EDT seals is showing improvement. Coyle said they are showing less degradation and seem to be holding pretty well but have a challenge with sticking together. They have found lubricant to help them function and the EDT processed 50 munitions in one day recently, probably the highest amount per day so far. Abaie passed around a sample of solid seal material. Coyle said they are hoping for success over the next 20 days with the solid seals holding up but do have alternatives in case the solid seals do not work as expected. Abaie said based on Anniston experience, they plan for 28 days of operations and four days of maintenance to replace the seals. Williams said they were making significant progress.

Heiser asked if there were additional challenges due to the extra agent being drained from the GB projectiles. Abaie said it is actually better for the project as there is less heel in the projectile body to go through the Metal Parts Treater. Coyle said it was a welcome surprise that showed the previously deleted projectile washout was not necessary. Hink said it did give the control system a negative number, which had to be corrected.

SCWO Update – Dr. Candace Coyle, SPM, BGCAPP

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

Coyle provided a timeline of SCWO progress and anticipated testing and operational activities and said the first step was to process water and isopropyl alcohol. The project then performed a safety verification and verified safeguards in place for identified Tier 1 (loss of life or plant) and Tier 2 (injury to person or plant) safety risks. The next step was to perform a GB simulant and surrogate shakedown, which should last approximately one month, with this being the first time surrogate and simulant have been introduced to the system collectively. After that, there will be a four-month surrogate and simulant pre-operational assessment. She noted the main plant must run for months to build up enough hydrolysate to process through SCWO, so this assessment will provide more data, and will line the schedule up closely with the time SCWO will need to start processing hydrolysate. A six-month operational assessment will then follow. Coyle then provided information on three studies, 1) an operational metrics study, which questioned system reliability and safety, 2) a corrosion study, which found an increased chance of

embrittlement in certain areas and found the quality of the SCWO welds was good, and 3) a safety study, which showed heavy reliance on automation to handle critical situations and human-automation interface issues. She said the project has identified four metrics for SCWO operations: safety, availability, reliability and maintainability, which reflect the government's emphasis areas. Coyle said they took two things from this: 1) the project will only operate one train at a time until satisfied with the results, and 2) the #2 reactor will not be used during operations and will be used as an additional safety barrier between #1 and #3 reactors. She emphasized progress with the SCWO will be crawl, step, walk and not crawl, walk, run as the SCWO is not on the critical path and will be done very safely. She discussed the four metrics:

- 1) Safety – Coyle said they are monitoring the data and will share it with the Processing Working Group (PWG) and CAC/CDCAB when completed. She explained there were many possible risks, but said it was due to analyzing every aspect of the performance of an activity. They ended up with 21 Tier 1 and 24 Tier 2 scenarios. Coyle noted if anything related to a Tier 1 or Tier 2 event occurs, operations will be paused, which is a policy at the site. Abaie said they will not wait for something to happen but will review all indicators each week and will stop if necessary, as he wants to make sure it is really understood before going forward. Coyle then said they had identified about 200 critical safeguards that were verified to address all the issues.
- 2) Availability – Coyle said the study showed availability needs to be at a minimum 55% for each reactor with all three reactors operating, or at least 60% each for two operating reactors to reduce availability risks, to meet the overall availability rate of 76%. She provided and explained a timeline for thermowell and liner change-outs and said each thermowell is good for 75 hours and liners for 330 hours.
- 3) Reliability – Coyle said the goal for the average time between failures is more than 12 days between liners and five days for thermowells and the project will track downtime between planned and unplanned outages. She noted episodic behavior from this system affects the site, which shares one common resource for maintenance, and the reliability factor is important since it impacts the workforce as it can be disruptive. She said if reliability issues occur that will lead to a more-than-90-day outage, they will have to look at alternate methods for hydrolysate processing but will communicate with the PWG and CAC/CDCAB well before that time.
- 4) Maintainability – Coyle expressed the need to minimize exposure to personnel for preventive and corrective maintenance to the SCWO system and said corrective maintenance should occur during replacement outages to minimize down time. Like reliability, if issues with maintainability will lead to a more-than-90-day outage, they will look at alternate processing methods.

Coyle said the system demonstration went well.

Hindman asked what a thermowell was. Hink said it is a metal probe that is inserted in piping to create a well for temperature recording.

Williams said for clarity, when talking about SCWO as a first-of-a-kind technology, it means the number of reactors, size and use of the technology, not that it has never been used before. Previous SCWO units have been smaller and not used in continuous operation with this many reactors. He said Coyle also said SCWO is "not on the critical path," and that means not having this operation does not necessarily disrupt the processing of agent within the plant. If SCWO does not pass, hydrolysate will have to be shipped off site. Williams said he has toured the plant and seen the bypass system in place in case hydrolysate needs to be shipped but because of the previous commitment, we are working hard to make sure SCWO works. If the standards are not met, the alternative system is already in place. He noted the extraordinary level of review of the SCWO system and said he has never seen so many people with this much expertise look at just one process ever and the exchange between management and the PWG has been extraordinary. Due to this rapport, Williams said an extra four-month testing period will be added to provide further evaluation before the decision is made to ship hydrolysate off site. Coyle added the additional test period would be added between the existing four-month pre-operational assessment and the six-month operational assessment and would be conducted with surrogate and simulant. Abaie said if there are availability, reliability or maintainability issues that they feel can be fixed, they will conduct the additional four-month testing period, but if they feel the issues are not fixable, it is probable the extra test period will not happen. He said once hydrolysate is in the system there is no going back, and if the system does not work with simulant, it will not work with hydrolysate. Williams said the significant point about introducing hydrolysate versus simulant has to do with closure and post-closure availability, as it would be shifting from a non-contaminated to a contaminated process.

Jeanne Hibberd asked what will happen if the hydrolysate had to go off site. Abaie said ACWA is looking at various ways to destroy it and has a good relationship with the facility handling this activity for the Pueblo, Colorado, plant, but cannot make a decision as it has to go through the government process.

Harry Moberly asked if it would be less expensive to ship hydrolysate than to operate the SCWO. Abaie said at this point, yes, but cannot say how much. Moberly asked Abaie if he has the preference to not operate SCWO. Abaie said for simplicity, yes, but the commitment has been made and he will stick to it because he knows how important it is to the community. Moberly said the safety metrics are extraordinary and he applauds the program for the devotion to safety. He asked if these types of metrics were at some point applied to the other operations of the plant. Abaie said yes, they do look at emissions and throughput rates. In the plant, cost is not a metric that they evaluate or add on because at the end of the day they must complete the mission. There are metrics for within the plant and the contractor is held accountable for them, as well. Moberly asked if the plant had the extraordinary metrics all along, why did the EDT seal and other issues happen. Abaie said problems with real agent could not be anticipated, as with the Levenstein mustard, and there are metrics for these things. Moberly said his biggest

concern was that there is a predetermined decision on this, that ACWA will jump through all the hoops in the name of safety but say SCWO is not going to work and just ship hydrolysate off site. He wants to emphasize the need for transparency and to fully explain decisions. Abaie said when the safety report was received, there were 4,900 issues, and he could have used that as a reason to say the system was not safe and he did not. He emphasized he is committed to the previous program executive officer's commitment to six months of running the system. Abaie said he thinks it is worthwhile to run longer with simulant but must make a decision at some point to say if the system is viable or not. He said he asked the team to evaluate and work through the safety issues and make sure the system is safe. Williams said he is not only in agreement with all previous program executive officers on minimizing shipment, but the group is also sensitive to any receiving community that is not part of a demilitarization community. He said he has contacted communities like this before and they were receptive to the idea of receiving waste.

George Ridings asked how many personnel would be involved if SCWO does not work. Hink said tankers will still need to be loaded and the remaining personnel can easily be absorbed into the plant, as it still has a high rate of attrition. Ridings asked how many people that would be. Hink said he will find out and provide the information.

KDEP Permitting Update – Dale Burton, BGAD Section, KDEP

Burton said it has been a very busy time for his department. They have issued five hazardous waste permit modifications: the shift to Part B permit for GB operations, a container storage facility, a rocket motor storage facility, adding organic air requirements and an open burn/open detonation modification not related to demilitarization for BGAD. He said, at the request of the facility, the BGCAPP modifications became effective Jan. 21 and the Research, Development and Demonstration (RD&D) permit was terminated on the same date. Burton then said KDEP approved the Temporary Authorization Request (TAR) to allow storage of hazardous waste inside the EDT Enclosure Building and the preliminary EDT Emissions Testing report, which allows the facility to operate at 75% of the tested throughput. He said the EDT Demonstration Test was successfully completed the week of Jan. 13. He said KDEP will be making minor adjustments to the permit to reflect the operating limits that were successfully tested. Burton said KDEP has also approved an extension of the TAR for SDC 2000 site preparation and slab installation. He noted they have issued a total of five RD&D and 21 Part B EDT and main plant permit modifications since the last CAC/CDCAB meeting, including some of the final approvals to allow the main plant operations to begin in January. Burton continued that KDEP is currently reviewing a TAR for the SDC 1200 off-gas treatment system building addition horizontal work and a TAR for the rocket warhead containerization system installation and systemization, the preliminary application for the SDC 2000 and a number of minor modifications. Burton then said KDEP is still having ongoing discussions with the project team on the complex permitting path still ahead and the additional submittals expected mostly within the next one to two months. He congratulated the entire BGCAPP team on the start of main plant operations as a very notable milestone.

Closing Remarks – Doug Hindman, Chair, CAC; Dustin Heiser, Director, Madison County EMA/CSEPP; and Craig Williams, Co-Chair, CDCAB

Hindman said he recognizes some nice things are happening, that he has seen some tension in the meeting and in the PWG and that is a good thing. He appreciates all the transparency and sees it as a sign of progress.

Heiser thanked everyone for their attendance.

Williams said he has been on the project 35 years and when he saw the video of the actual rounds being destroyed it was almost surreal to him. He said he is very appreciative of where everything is now and he seconds the openness and transparency associated with the program, as he said it was not always like that. Williams feels it has been a great evolution and he is very proud to be a part of it.

Next CAC and CDCAB Meeting

The next meeting is scheduled for Wednesday, June 10, 2020, at 1:30 p.m. at the ECU Carl D. Perkins Building, Rooms A and B.

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