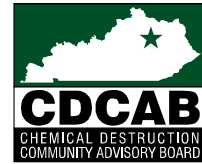




Doug Hindman
Chair

Chemical Demilitarization Citizens' Advisory
Commission
Chemical Destruction Community Advisory
Board
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Reagan Taylor
Craig Williams
Co-Chairs

To: Mr. Michael Abaie, ACWA Program Executive Officer
Fr: KY CAC/CDCAB
Date: 9 July 2020
Re: SCWO Restart @BGCAPP

Dear Mr. Abaie,

As always, we appreciate your consistent communication with the Kentucky CAC/CDCAB and look forward to continuing the positive relationship between us and ACWA under your leadership.

At issue is the decision regarding the Restart of SCWO at BGCAPP. The following is the position of the CAC/CDCAB and the basis for that position.

POSITION: The CAC/CDCAB strongly supports the use of the SCWO technology for the treatment of materials intended to be processed via SCWO prior to the issues of concern occurring during Shakedown. We continue to oppose off-site shipment of agent hydrolysate and other materials slated for SCWO treatment prior to the stated event. Our position is based on the following:

PUMP FAILURE

- 1) The event impacted a piece of equipment not associated with the actual treatment of the waste materials, but was rather a piece of equipment supporting SCWO hydrolysate treatment.
- 2) The piece of equipment (i.e. the pump) is one of three present at the BGCAPP treatment facility, along with similar pumps at the PCAPP facility and are commercially available and can be replaced readily.
- 3) Based on available information the event occurred with no damage to other SCWO equipment, was contained by the Lexan Panels, resulted in little damage and no injuries. We do not concur with your proposed action requiring an "end-to-end safety assessment of the entire SCWO system" as stated in your May 2020 memorandum. This is based on several factors including, but not limited to:
 - a) 70% availability of SCWO during the GB Simulant & Surrogate Shakedown;

- b) All operational conditions achieving stated goals during this period
- c) Corrosion issues associated with operations surpassing the anticipated 300 hours by twofold;
- d) Preliminary investigations indicating the failure being due to incorrect torque of the anchor bolts on the pump along with possible excessive wear of internal components. The fact that this pump was used years ago during the factory acceptance tests and has sat idle since then likely contributed to the wear issue.
- e) Requiring review of operability, maintainability and reliability of the entire SCWO system due to a pump failure seems excessive and unprecedented, particularly when historical failures of equipment and processing approaches associated with Chemical Weapons Demilitarization have not required such a lengthy and burdensome operational analysis (i.e. modification of Mustard processing approach; abandonment of neutralization of rocket explosives; elimination of the wash out system; modification to the rocket processing line; installation of piping for possible off-site shipment of hydrolysate; SDC seal failure; etc.) At ANCDF in 2006, afterburner separation due to improper bolts being used was dealt with in 76 days and did not require a review of each and every facet of the technology. In the prior BGCAPP failure cases focus was brought to bear on the specific issue of concern while not requiring a review of the entire BGCAPP.
- f) Deadlines for steps leading to an implementation plan as reflected in the ACWA PEO's memorandum dated May 2020 could result in SCWO stoppage of from between 1.5 and 2 years. This appears to be an unprecedented length of time to identify root-cause issues associated with any previous failure/modification. Subsequently ACWA PEO stated that a 3-5 year period would be required to allow SCWO operations to resume.
- g) The prescribed actions do not align with the "Criteria for Acceptance of Shipping Hydrolysate" dated 24 July 2018. Specifically it does not meet the following sections of that Criteria:
 - I. Tank Volumes – Not applicable
 - II. Non-Operational Days for SCWO – Timing of initiating VX agent destruction should not trigger this Criteria (unless the 1.5 - 2 year operational analysis is directed).
 - III. SCWO Process Safety Event – The pump event does not meet the definition of a Tier1 or 2 process safety event as contained in the Criteria since it was not "an unplanned release from containment"
 - IV. Schedule Delay – Repairs would not cause schedule delay but for the extensive review since agent operations have already started. As stated in Sec. (e) above, the directive contained in the May 2020 memo forces this Criteria point to be violated.
- h) The proposed analysis path forward appears to fall in conflict with the final Criteria point (c): "...that all of the above circumstances exist."
- i) Agent hydrolysate processing via SCWO should not result in elimination of use of the technology post De-mil as contact directly with agent does not occur. SDC future use potential has been already considered. Additionally, steps are being taken currently to initiate a process by which decisions regarding future use of any

infrastructure associated with BGCAPP will be made. This process will include community involvement in the decision-making.

- j) Issues associated with the principles of environmental justice will be violated if off-site shipment to Port Arthur, Texas is initiated without all alternatives measured against such principles being thoroughly considered.

PRESSURE SAFETY RELIEF DISCS:

Another basis for considering SCWO abandonment is the number of high pressure safety relief disc failures during Shakedown. However, according to the 8 May 2020 BPBG SCWO Shakedown Final Report, it appears that with the SCWO-87 software change the issue was adequately addressed. This modification all but eliminated such ruptures during the final two weeks of Shakedown. The Report goes on to state such frequent ruptures are not expected to occur during the 4 month Pre-operational Assessment.

POSITION: The primary purpose of Shakedown is to identify issues associated with operations and identify the means to rectify such problems. It is reasonable to anticipate equipment failures and other problems during this exercise. That is the purpose of this phase.

With the suggested approaches to fixes for both the pump and pressure disc, it appears the planned next phase of SCWO testing should proceed.

The CAC/CDCAB appreciates the ACWA PEO's dedication to safely disposing of the Kentucky stockpile, the safety of the workforce and the community, and continues to support the overall ACWA objective. However it appears the proposed approach to dealing with these incidents is an exercise certain to lead to the shipment of agent hydrolysate off-site. Whether resulting from the actual necessary actions and precautions or resulting from directives originating from authorities above and beyond the influence of the ACWA PEO.

RECOMMENDATION:

Based on the above, it is the position of the Kentucky CAC/CDCAB that the SCWO technology should proceed with the 4 month GB Simulant & Surrogate Pre-Operational Assessment.

As always, the CAC/CDCAB looks forward to working through this issue with due diligence, thoughtfulness and cooperation to reach a decision that is acceptable to all parties.

Doug Hindman
Douglas Hindman, Chair
Citizens Advisory Commission

Reagan Taylor
Reagan Taylor, Co-chair.
Citizens Advisory Board

Craig Williams
Craig Williams, Co-chair,
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