Response to KDEP comments on RWCS Mod- NOD 1

April 14, 2020

1. Part A. Kentucky Addendum, Legal and Operating status codes: Please check and confirm all legal and operating status. For example, the Container Storage Facility is listed as TA (Temporary Authorization) but is a permitted unit. The Rocket Motor Igloos F1001 and F1002 are listed as Proposed but are permitted units.

   Response: Legal and Operating status codes reviewed and revised.

2. Part A. See Section 2.2 of the Permit Modification Request. The description of changes to the waste streams and codes are difficult to follow and match with the changes to the Part A. Please revise to indicate changes made by specific line items in Section 7 of the Part A.

   Response: Revised as indicated.

3. Part A. General, waste streams 27 and 28 appear to be the same process stream and should be combined into one

   Response: Revised to combine waste stream 28 into stream 27.

4. Part A. The Unit of Measure "T" is used throughout the Part A, however this is not an allowed unit of measure, per the instructions – please correct

   Response: Per an email on April 29, 2020 between Bill Buchanan (JV) and Dale Burton (KDEP) "T" is an acceptable unit of measure for this application.

5. Part A. Waste Stream No. 142, Energetics Hydrolysate, remains on the Part A. Please delete or explain why it is needed.

   Response: Hydrolysate waste stream is deleted and N401 code removed from associated waste streams.

6. Part 1.0, page 3, line 19. It is stated that transportation of the skids to storage units is included in this permit modification request. ACWA's storage permit modification request indicates that transportation is included in that request. Please clarify/correct.

   Response: Reference to transport of containerized warheads to BGCA has been removed. Language revised to allow movement of containerized warheads to flatbed trucks from MDB.

7. Part 1.0, page 3, line 35. Why is the term “Effluent” used when identifying Room 07-140? This had previously just been the Off-Gas Treatment System Room. The revised draft permit, A.III.I.(9).(u), uses “OTE” for Off-Gas Treatment Effluent which is problematic because OTE has had a different meaning. Please clarify.

   Response: References to OTE in the permit modification request and proposed revised permit have been updated to Off-Gas Treatment System – Energetics (OTE), which is located in Room 07-140. Note that although the OTE system is no longer being used, Room 07-140 retains the OTE name.

8. Part 2.1.1, page 5, line 12. For DRE calculation, assumption of 100% agent drain is proposed. This section discusses agent heels in rocket warheads (page 4, line 34). The next section states that warheads may be undrained (page 5, line 28). Please clarify why 100% agent drain is proposed.

   Response: The referenced language is deleted and replace with “A revised DRE calculation information will be provided as a compliance schedule item.”

9. Part 2.1.1, page 5, line 15. Please include a DRE calculation. If warheads will not always be 100% percent drained, determination of DRE parameters for all conditions must be discussed.

   Response: As indicated in the responses to item 8, revised DRE calculations containing this information will be provided at a later date as a Compliance Schedule Item.

10. Part 2.1.2, page 5, line 26. Please describe what would make the wrapping necessary and how a determination would be made.

    Response: The wrapper might be used is if there is a problem draining a warhead or excessive liquid contamination is discovered. The project does expect to use it routinely, it will be there for contingency to prevent spread of contamination based on judgement of the control room operators, supervisors, and plant management. Contamination that could be addressed by wrapping might include drips to the ECR floors around the warhead transfer and canister loading robots, drips to the outside of warhead canisters that would need to be removed, and elevated ECR vapor readings. However, since the ECRs are designed to contain agent liquid and vapor (floor coatings and MDB HVAC system), wrapping is not necessary to contain contamination.

11. Part 2.1.2, page 5, line 28. Please clarify in what cases a rocket warhead would not be drained.

    Response: Sentence revised to clarify that all warheads entering the ECR will be punched and drained to the extent possible. If a determination is made that select warheads cannot

be drained due to gelling or other reason, approval from KDEP will be requested to directly package these in canisters without punch and drain.

12. Part 2.1.2, page 5, line 32. Please clarify whether the warhead will be weighed before and after draining and, if not, how remaining agent will be determined, for example, for DRE calculations.

    Response: The language in the referenced section is revised as follows: “This loaded canister passes from the ECR to the EBH room through an airlock where the canister is weighed, and the amount of remaining agent is calculated based on the canister weight (and wrap weight, if applied) and a nominal undrained warhead weight.”

13. Part 2.1.2, page 5, line 35. Please explain what information will be included on the label for each canister and if the labeling will include RCRA required information such as accumulation date and the words “hazardous waste”. Also, explain what labeling will be done on each skid of containers.

    Response: The following language has been added in the referenced section of the modification - "Cannister labels include a QR code for barcode scanners, as well as processing information such as line serial number, cannister serial number, date, timestamp, and net weight. Hazardous waste markings will be applied to the pallet in the facility."

14. Part 2.1.2, page 6, line 12.

a. The proposed RM monitoring strategy conflicts with the current permit language (Condition A.III.A.(4), fourth bullet), and possibly with KRS 224.1-400(4). A separate document was submitted that shows a proposed change to that condition as a redline change; please provide a clearer justification for the proposed change.

   Response: A modification is being proposed for Condition A.III.A.(4):

   “Detection of agent above the WPL in rocket motor boxes outside engineering controls shall not be considered a release as long as contents of the rocket motor boxes have been monitored by MINICAMS to less than 0.5 VSL alarm level in the Motor Packing Room Airlock prior to movement out of the airlock.”

   The RM monitoring strategy will not result in a release under KRS 224.1-400(4) since movement out of the Motor Packing Room airlock will only be performed once the RMs have met the permit criteria for release, <1 VSL (with 0.5 VSL alarm level) per the approved MINICAMS/DAAMS Monitoring Table. This is similar to the monitoring that was performed at the stack in which levels <1 VSL (with 0.5 VSL alarm level) during the projectile campaign were not considered a release even though the statute refers to “any quantity”.

   A monitoring approach at lower levels (such as using DAAMS monitoring) will only be used to ensure that the RMs can be handled at a site that uses workers that have not been

trained as chemical agent workers. The lower monitoring levels (e.g., DAAMS) is not being proposed to demonstrate compliance with “any quantity”. Instead, “any quantity” is defined in the permit’s MINICAMS/DAAMS Monitoring Table as <1 VSL (with 0.5 VSL alarm level).

b. Please verify that the proposed monitoring standard for RMs is in agreement with ACWA's storage permit application.

Response: RMs monitored to <1 VSL (with 0.5 VSL alarm level) in the Motor Packing Room will meet the monitoring criteria identified in ACWA’s storage permit application. Monitoring <1 VSL with 0.5 VSL alarm level will satisfy the ACWA storage application.

15. Part 2.1.3, page 6, line 34. Please clarify how many rejected warheads can be stored in each ECR. Also, provide a discussion of the procedures for handling rejected warheads, both those placed in canisters and those not yet placed in canisters

Response: Revised to include maximum number of rejected warheads in each ECR and handling of rejected warheads.

16. Part 2.1.3, page 7, line 8. Please provide additional detail about waste and containers in the MWS

Response: This section has been revised to include additional information.

17. Part 2.1.4, page 7, line 12. Please provide additional detail about waste and containers in the rooms identified in this section.

Response: This section has been revised to include additional information.

18. Part 2.1.6, page 8, line 20.

a. The Division prefers to reference the RCRA Operations Plan, with the stipulation that future changes to operating parameters specified within the permit may be incorporated by permit modification, and will not require an update to the RCRA Operations Plan.

Response: Language has been updated in the section to

(1) Remove reference to deleting the RCRA Operations Plan and

(2) Limit update of Appendix F RCRA Critical Operating Parameters to items associated with energetics process removal, as conversion from the RD&D permit to the Part B permit removed references to several PTDP parameters as part of the public comment process.

b. Please provide detail regarding which parameters are requested for removal and justification for each.

Response: Request to remove PTDP parameters has been removed, as this was accomplished during the conversion from the RD&D permit to the Part B permit as part of the public comment process. Details have been added for energetics critical parameters removal and RWCS parameters addition.

19. Part 2.2, page 8, line 33. Please verify that Net Explosive Weight has been considered and is not exceeded in each storage area

    Response: The Net Explosive Weight (NEW) quantities is being reviewed and will be approved by the proper authorities (DDESB and USATCES) prior to operations in those areas and the approved NEW will not be exceeded in these areas during plant operations.

20. Part 2.2, page 9, line 17-23. No. 7 states the cutting machine throughput is revised up to 2,400 gal/hr while No. 8 says the Crimp Station is 1,200 gal/hr to match. Please clarify.

    Response: The processing rate on the Part A is "J" for pounds per hour, the language in the mod is corrected to replace gallons per hour with pounds per hour. The processing rate of 2400 lbs./hr. for the rocket cutting machine reflects a pounds per hour rate that includes the entire rocket while the crimp station is only managing the warhead portion so is proportionally lower lbs./hr. rate.

21. Part 2.2, page 9, line 21. RWCS is defined here as Rocket Warhead Crimp Station, while RWCS is already in use as Rocket Warhead Containerization System. Please use an alternate acronym for the crimp station, and ensure all uses throughout the application are corrected.

    Response: Language revised.

22. Section 2.2, page 10, line 3. Item 20 refers to 'listed agent derived waste, other than activated carbon'. By the description, sequencing, and correlation with waste streams in the Kentucky Addendum, this appears to refer to lines 119-120 in Section 7 of the Federal Part A. However, the comments to Section 7 describe 119-120 as "contaminate activated carbon that may potentially characteristic for D022. [sic]" Please clarify.

    Response: Language revised to clarify.

23. Section 2.2, page 10, line 17. Item 24: Please explain why Energetics Hydrolysate is not completely removed from the Part A.

    Response: Energetics hydrolysate has been removed from the Part A.

24. Section 2.2, page 10, line 26. Item 27: The justification given for this change is to make the Part A consistent with this section. Please clarify this circular reference.

    Response: Changed referenced section to 2.1.5.

25. Section 2.2, page 10, line 29. Item 28: This change states a change from X99 to S01, but the permit already appeared to contain S01. Please clarify if there was a previous Part A submission that used X99 erroneously

    Response: Item included in error and has been removed.

26. Section 2.2, page 10, line 30. Item 29: The CSF permit lists individual waste streams associated with the Container Storage Facility. Please provide justification for combining previous waste streams into a single item.

    Response: Revised to include the same information as submitted in the Container Storage Facility (CSF) permit modification.

27. Section 2.2, page 10, line 32. Items 30, 31: The proposed language and the revised Part A indicate the addition of N102 to F1001 and N101 to F1002. The permit application does not otherwise address the addition of storing GB-derived rocket motors in F1002 or the addition of storing VX-derived motors in F1001. Please clarify and revise the permit modification request where needed.

    Response: These are additions to the Main Plant Part A because it now includes rocket motor storage mod. It doesn't need to be discussed in this modification because it is in the rocket motor storage class 3 modification; this simply updates the Part A.

28. Part 3.0, page 15. The table indicates there are new tank systems installed or designed but there do not appear to be any new tanks designed or installed as part of this permit modification request. Please clarify.

    Response: Section update to reflect no change has occurred.

29. Volume III, Section 4, page 69. Please verify that the skid's secondary containment system is designed in accordance with 40 CFR 264.175(b)(2). The warhead containers must be elevated above the spill pan or otherwise protected from contact with the accumulated liquid or the base must be sloped or otherwise designed and operated to drain and remove liquids. It appears the current skid design allows the canisters to rest directly on the spill pan.

Response: Added to section 2.1.1**:** The skid is an open design constructed from steel with approximate dimensions of 42x42x41 inches (WxDxH). The packaged WHs are stored vertically (nose up) in the skid. The bottom of the skid is a pan sufficient to comply with Resource Conservation and Recovery Act (RCRA) secondary containment regulations.

30. Please provide Licensed Professional Engineer certified drawings in accordance with KRS 322.340

Response: Updated P&ID and PFD drawings with PE stamps will be provided showing the RCM and RHS systems and remaining parts of the RWCS system. Note that vendor provided drawings showing equipment details and arrangement are for information only and do not require PE stamps.

31. Part 2.1.3, page 7, line 3. It appears that RCA should be RCRA

Response: Revised as indicated.

32. General comment: All proposed permit modifications that are not a direct result of the RWCS process changes should be listed and described separately from the permit markup submittal

Response: To facilitate review, proposed items related to energetics equipment removal and the RWCS are highlighted in green; other proposed changes are highlighted in grey.

33. A.III.A.(6) and (10). Please provide the DRE calculations to support these proposed changes.

Response: As indicated in the responses to items 8 and 9, revised DRE calculations will be provided at a later date as a CSI.

34. A.III.I.(9)(I). Please clarify what is meant by “in-process”.

Response: Language has been updated to "Storage of munitions shall be inside of an EONC except while the munitions are in-process (staged in Unpack Area 1 or 2 awaiting feed to the MWS or RHS). Other waste with free liquids shall be stored on secondary containment pallets." Details have been added to Section 2.1.4 of the permit mod request.

35. A.III.X.(4)(c) and Appendix C-2. Please explain the increase in the Rocket Cutting Machine throughput.

Response: The previous rate limiting factor for the RHS was based on the EBH capacity. The new rate limiting step is based on the capacity of the ANS. The proposed Rocket Cutting Machine (RCM) rate supports the new process capabilities. Additionally, this lbs./hr. rate is representative of the weight of the entire rocket.

36. A.III.X.(4)(d). The Rocket Shear Machine description still includes shearing warheads into segments. Delete shearing and clarify what remains of this unit, i.e. punch and drain.

    Response: Language revised to delete shearing of warheads by the Rocket Shear Machine (RSM). The RSM will punch and drain only.

37. A.III.X.(4)(i). Will SCWO reactor throughput continue to be 1,440 lbs/hr/unit? Explain what feed rate of agent hydrolysate is expected to be per unit under the new approach where energetics hydrolysate is no longer used

    Response: The quantity of agent hydrolysate treated in the SCWO units is projected to be the same as previously planned when it would be mixed with energetics hydrolysate prior to treatment. The total combined feed rate of agent hydrolysate and energetics hydrolysate surrogate will continue to be up to a maximum of 1,440 lbs./hr. per unit to the SCWO reactors.

38. Appendix E. Please update the monitoring table to include all changes and additional monitoring provided for monitoring and clearing: containerized warheads, skids of containers, and rocket motors, and any glove box monitoring used prior to rocket cutting (i.e. RM glove box shown in Vol I., p.5).

    Response: The monitoring table containing this information will be provided at a later date as a compliance schedule item (CSI).

39. Appendix F. Add a critical parameter for the monitoring level to clear containerized warheads and skids or identify which existing parameter applies to these items.

    Response: This information will be included with the CSI provided in response to item 38.