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cc: Gretchen LeBlanc, 3601
Ed Pittman, 3601

CAUSTIC 1/CHLOR-ALKALI 2 REACTIVE CHEMICALS PRE-REVIEW FOR CONSOLIDATED AUDIT & NEW SUPERINTENDENT REVIEW - OCTOBER 6, 1994

Project representative: Edie Myer

Committee members present: John Monroe, Buck Bailey, Joe Schell, Beatriz Cisneros, Seb Corbino, Brian Witt, Dean Grigsby for John Gross, Mark Mitchell, Gerald Wagener

Recommendations:

1. Develop a single up-to-date chemical compatibility chart that can be shared by both plants. Consider obtaining compatibility charts from sister plants within Dow and modify accordingly.

2. Review E-205/D-227 reactive chemical issues to insure that effective safeguards are in place for avoiding a worst case chlorination of chloroform. Review John Monroe's Aspen simulation for the carbon tet elimination project. Obtain updated complete taffy analysis and document the worst case scenario and lines of defense.

3. A follow-up response letter is needed for the concerns raised with the chlorine expansion pot project of 1992.

4. Concerning the new Booster Compressor:

   a. Were the materials of construction checked with the X-ray alloy instrument?

   b. Was the equipment blacklighted for the presence of organic residues.

5. Review the storage policy for titanium parts to insure that the potential for installing the wrong material of construction in the process is nil. Test all titanium parts when they arrive from other areas and do not depend on the color of the part for positive ID.

6. Joe Schell will send reactive chemical review letters and responses pertaining to the CFC Replacement project to Gretchen LeBlanc.

7. Review the current positive ID test for incoming deliveries of sulfuric acid to insure that the test is specific for sulfuric acid and not any other acid.

8. Review the electrical heating system used for heat tracing chlorine lines and vessels and make sure the system is self-limiting with respect to temperature. If the controller fails and full power is applied to the heating elements will the maximum possible temperature rise initiate an iron chlorine fire?

9. Brine analysis: Are nitrogen containing compounds being analyzed on a routine basis?

10. Brine reactions: Add the bicarb reaction to the chemistry section of the reactive chemicals packet as an unwanted reaction and list the lines of defense.

11. MDEA in Brine:

    a. Add the MDEA + chlorine reaction to the chemistry section of the Reactive Chemicals packet and list lines of defense.

    b. Review the procedures in place at Brine Production for avoiding getting MDEA in the mining water.

12. Define the levels of Reactive Chemicals training that are needed for different personnel in the block.

13. Concerning the taffy pots:

    a. Define the appropriate frequency for performing the analysis of NCl3 in taffy.

    b. Document the scenario of getting sulfuric acid in the taffy and list the lines of defense.

14. Add a comment to the Reactive Chemical Packet that the EBV's on the chlorine pumps also serve as a line of defense for minimizing chlorine losses if a pump leaks.

15. Cell Area: Add the reactions of sodium bisulfite + acid and sodium thiosulfate + acid (which release SO2) to the chemistry section. Also include this as a worst case scenario and list lines of defense.

16. Cell Area: Determine the best line of defense for a hydrogen fire in a cell effluent trap. Should the rectifier be tripped? The practice of having someone put a water hose in the trap may be unsafe due to hydrogen re-igniting.

17. Power Area: Review potential for hot oil leaking onto porous insulations, especially calcium silicate. This can result in spontaneous ignition.

18. Hydrogen Collection Area:

    a. Calculate total backflow in the event the ABV does not close to determine venting capacity of T-206. Consider installing a check valve downstream of C-601 discharge valve (AO-114). Need clarification of CATC guideline 4.1.5.3.

    b. Review the potential for carbonate buildup and determine if this is a reactive chemicals concern.

    c. There is a reactive chemicals concern with T-603 bone char exposure to air during disposal. Develop disposal procedures to avoid spontaneous ignition problems.

19. Determine if reactive chemicals testing data exists for absorbents being used. Compatibility testing should be performed if data does not exist.

20. Concerning leak repair sealants: Update CA2's and Caustic's list of approved leak repair sealants.

21. Concerning lubricants/cleaning agents: Review procedures to insure that improper materials are not used for chlorine service items.

22. Review maintenance procedures in the Power area to insure that Chlorothene and copper containing anti-seize compounds are not used together when assembling equipment. Reactive chemicals incidents have resulted in the past with this combination.

23. Review operating discipline for starting up T-201 with strong acid during times when weak acid is not available. Develop procedures that address the heat of dilution of the strong acid.

24. Determine if adequate safeguards are in place at the caustic user plants to prevent organics from backing up into the caustic header.

25. Review maintenance procedures to insure that chlorinated organics cleaning agents are not used in caustic service.

26. All pertinent reactive chemical hazard evaluation data which were generated for Caustic/Chlor Alkali 2 should be assembled and placed in a centralized location so that it is available to plant personnel.

Please respond in writing within one month as to action taken or planned in regards to these concerns.

Gerald Wagener (GW)

Gerald Wagener, Chairman
Reactive Chemicals Committee

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