

LOSS PREVENTION AUDIT

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Process Hazard Analysis

Process Hazard Analysis (PHA) is required by the OSHA PSM Standard 1910.119, Paragraph e). This section of the Loss Prevention Audit along with the Reactive Chemicals Review, Chemical Exposure Index Review, Fire and Explosion Index, Hazardous Materials Transportation Review and others, constitutes Process Hazard Analysis for existing Dow facilities. This section of your PS&LP Audit will be retained for the life of the plant.

FLAMMABLE MIXTURES/COMBUSTIBLE DUSTS

C 1. Yes ☒ No ☐ Are flammable/combustible materials stored in your plant? Only in Flammable Storage Cabinet, H2, Acetylene

C 2. Yes ☒ No ☐ Are flammables loaded/unloaded in your plant? Vehicular Fuel only

A 3. Yes ☒ No ☐ Partly ☐ Are flammable materials processed in open, freely ventilated structures? (LPP 2.1.2.)

Plans: No Plans

B 4. How do you prevent flammable mixtures in the vapor space of process tanks, storage tanks, rail cars, tank trucks, etc.? (LPP 10.2)
Cells and tail gas are monitored for H2/Cl2 explosive mixtures. Air and/or nitrogen are used to control concentrations in safe ranges.
Plans: Fuel gas system purged with N2 on startup and shutdown. Sump I vent stack, iron cells gone, GT lube oil and seal oil has auto N2 purge on shutdown.

C 5. Yes ☒ No ☐ In process equipment operating under vacuum conditions, has the hazard of air introduction been evaluated?

(Example: Packing leaks on vacuum pumps, vacuum conditions resulting from temperature change associated with shutdowns, normal low pressure operations, etc.)

Plans: See Number 4 - H2 recovery does not operate under a vacuum.

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- B 6. Yes ☒ No ☐ Do you monitor system pressure and/or oxygen content in low positive pressure applications?

Plans: Oxygen analyzers are present in our hydrogen processing train.

- C 7. Yes ☐ No ☒ a. Do you have a flare system?
Yes ☐ No ☒ b. Do you have a TOX, THROX?

If yes to either of the above, how do you prevent backflashes in the system? N/A

Yes ☐ No ☒

Are temperature sensors utilized in conjunction with flame/detonation arrestors?

Plans: N/A

How do you avoid flammable mixture within the header? (LPP 14.2.7) N/A

Plans: N/A

Yes ☐ No ☐ NA ☒ Is your flare tip on a maintenance schedule?

How do you insure that you have a flame? N/A

- C 8. Yes ☒ No ☐ Does the plant/process have potential combustible dust flammability concerns? (LPP 11.1) Chlorates and bone char brought up in Reactive Chemical Audit

If yes, answer the following questions:

Yes ☐ No ☒ Have reactive chemical tests been run on the possible dust mixtures?

Plans: As per Reactive Chemical corrective items we will pursue these.

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Yes ☒ No ☐ Does the plant have static electricity guidelines and programs? (LPP 3.6)

Plans: Procedure for grounding trailers (H2) we do ground oil drums, etc., but there is not a procedure, per LPP 3.6.

Yes ☐ No ☒ Are regular electrical continuity checks made for solids handling systems? (LPP 11.1.3)

Plans: We do not handle solids.

Yes ☐ No ☒ Are there plant procedures and action taken to prevent an accumulation of dust to build on structural beams, surface of equipment, etc.?

Plans: N/A

Yes ☐ No ☒ Where dusts exist, have alternate methods of handling or isolation been considered?

Plans: N/A

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