





HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 1 of 7

ISSUED BY:  Safety Manager Coosa Pines Mill DATE <u>3-3-21</u>	APPROVED BY:  General Manager Coosa Pines Mill DATE <u>3-3-21</u>
INTERPRETATION AND PERIODIC REVIEW OF THIS PROCEDURE IS THE RESPONSIBILITY OF: SAFETY MANAGER	
DISTRIBUTION ALL MANAGERS ALL TEAM LEADERS	

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 2 of 7

1.0 PURPOSE

The purpose of this policy is to provide minimum requirements for appropriate protection for personnel while performing work near a **hazardous chemical pressurized system and non-pressurized systems such as pump repairs, cleaning parts/equipment, during teardowns, rigging and cleanup of work areas.**

2.0 SCOPE

This policy applies to all Coosa Pines employees, visitors, vendors and contractors who enter and/or work in the designated hot zone.

This policy does not apply to tasks performed on steam, condensate and hot stock material except when retrieving samples. Refer to SAF-1.01, Personal Protective Equipment, for specific PPE requirements for these hazards.

3.0 RESPONSIBILITIES

- 3.1 The Safety Manager is responsible for oversight of this policy, ensuring its accuracy and compliance with regulatory and corporate requirements.
- 3.2 The General Manager is responsible for implementation of this policy.
- 3.3 All supervisors and managers are responsible for ensuring that employees, contractors, vendors or visitors under their charge comply with this policy. Supervisors have the primary responsibility for enforcement of this policy in their area.
- 3.4 Every employee is responsible for wearing the proper PPE when required by this policy and must use, clean and maintain the specific PPE in the manner in which he or she was trained.

4.0 DEFINITIONS

- 4.1 **Chemical Protective Suit Level 0** - Minimum required personal protective equipment for retrieving samples of 1 gallon MAX for hot stock, hot condensate, caustic, acid, or other hazardous chemical samples at ambient temperature. This equipment includes: long CarbonX coat, appropriate long chemical cut-resistant gloves worn under sleeves for the substance being handled, hard hat, face shield with clear chin guard, chemical splash goggles, safety boots (min 8") or chemical resistant boots.
- 4.2 **Chemical Protective Suit Level 1** - Equipment required when there is a potential of exposure to **Hazardous Chemical Pressurized System** and that requires:
 - 4.2.1 Chemical resistant hooded jacket and pants or one piece suit with the ability to be cinched to the face, wrists and ankles (rated for light chemical splash and immediate escape);
 - 4.2.2 Chemical resistant cut-resistant gloves to be used in the proper application;

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 3 of 7

4.2.3 Chemical resistant boots or safety boots (min 8");

4.2.4 Chemical splash goggles;

4.2.5 Hard hat with a chemical face shield and clear chin guard;

4.2.6 All extremities shall be sealed with chemical resistant tape or other safe means of sealing (ex: Velcro) prior to entry into the **Hot Zone area**.

4.3 **Chemical Protective Suit Level 1.5 for Line Breaking Protective Suit** – Equipment required when there is a high probability of exposure to **Hazardous Chemical Pressurized System** when opening the components of a hazardous chemical/substance system. This requires the following equipment:

4.3.1 Chemical resistant hooded jacket and pants or one piece suit with the ability to be cinched to the face, wrists and ankles (rated for moderate to heavy splash and immediate escape);

4.3.2 Chemical resistant gloves to be used in the proper application;

4.3.3 Chemical resistant boots or included in one piece suit;

4.3.4 Chemical splash goggles;

4.3.5 Hard hat with a chemical face shield and chin guard;

4.3.6 All extremities shall be sealed with chemical resistant tape or other safe means of sealing (ex: Velcro) prior to entry into the **Hot Zone area**.

4.4 **Chemical Protective Suit Level 2** – Equipment required for abating an excursion of a chemical process that requires a HAZMAT suit to be utilized by the competently trained employee for abating the situation. The process must be shut down and isolated to minimize the release of stored energy from the process.

4.5 **Chemical Abatement Level 3** – Specific HAZMAT Contractor for the abatement of a process chemical release to safely manage potential exposure to process not isolated.

4.6 **Hazardous Chemical Pressurized System** - Any system involving materials that are either:

4.6.1 Corrosive/Acid;

4.6.2 Pressurized above 180 psi;

4.6.3 Above 140°F or below -22°F;

4.6.4 Acutely toxic by skin/eye exposure;

4.6.5 Below 2.5 or above 12.5 pH;

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 4 of 7

4.6.6 3 or above on the HMIS Health scale.

4.6.7 Hot Stock Slurry

4.7 **Hot Zone**– An approach boundary limit at a minimum distance from 12 feet (when feasible) of a **Hazardous Chemical Pressurized System** where additional chemical PPE is required as defined in this policy.

4.8 **Line Breaking** - Refers to any job requiring opening of process piping or equipment. This includes but is not limited to: permanent and/or temporary bypass, connecting fittings, opening/closing valves, pumps, vessels and tanks.

5.0 HAZARD ASSESSMENT

5.1 A risk assessment shall be performed to determine permanent boundaries that are to be established around each **Hazardous Chemical Pressurized System**. The risk assessment will be based on the potential exposure to, and the tasks being performed near the hazardous chemical pressurized system. The hot zone will be clearly marked and specific minimum PPE requirements will be posted.

5.2 A risk assessment must be conducted whenever there is a physical change to a **Hazardous Chemical Pressurized System**.

5.3 During temporary work, such as maintenance activities, temporary barriers such as caution tape should be utilized to establish a conservative safe boundary for close proximity exposure, after having completed a 360° Risk Analysis and a Line Break Permit (hazard assessments) to meet designated safety requirements approved by management.

5.4 **Handling or Potential Exposure:** PPE must be worn during maintenance task, operational task and cleanup of areas, when handling or potential exposure to chemicals on parts, pumps, tools and when moving/handling parts/equipment, disassembly and rigging. Employee and contractor must verify that all hazardous chemicals/process materials are cleaned/removed from area, parts, tools, etc. before PPE is removed/doffed. This must be noted on the 360° Risk Analysis if this type hazard exist or has the potential to cause burn injury or first aid. **Per SAC-2018-02_Calhoun_FA_2018-05-03.**

6.0 GENERAL REQUIREMENTS

6.1 All tasks around hazardous systems where spray or leak potential exists will require the use of the additional PPE required by this policy within the **Hot Zone** approach boundary.

6.2 Specifically, but not limited to, this policy covers any change in energy state for **Hazardous Chemical Pressurized System** such as acid, alkaline, oxidizing chemical systems such as black liquor, green liquor, white liquor, caustic, acid, and bleaching agents such as chlorine dioxide, peroxide, and sodium hydrosulfite.

6.3 Tasks such as retrieving pressurized samples less than 1 gallon from hot stock, hot condensate process, from caustic, acid, or other hazardous chemical process at ambient temperature are

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 5 of 7

examples of tasks where the minimal **Chemical Protective Suit Level 0** or greater must be used.

- 6.4 Tasks such as operating valves, equipment startup, equipment shutdown, isolating processes, and pressurized sample collection greater than 1gallon are examples of tasks where the **Chemical Protective Suit Level 1** must be used.
- 6.5 Tasks such as line breaking, draining/flushing/venting processes, and connecting/disconnecting hoses from process or tank trucks on **Hazardous Chemical Pressurized System** are examples of tasks where the **Chemical Protective Suit Level 1.5** must be used.
- 6.6 Pump and valve clusters shall have a safe zone established as a **Hot Zone** and marked where entry within the boundary requires the above mentioned PPE. The purpose of the designated **Hot Zones** around hazardous chemical areas is to communicate the requirement for the type of personal protective equipment to be worn while in the **Hot Zone** area.

7.0 PPE UTILIZATION GUIDELINES

- 7.1 **Chemical Protective Suit Level 1** - This level of personal protection can only be used if there are no leaks coming from the system being serviced and is to be used as a deterrent for splash. If leak is observed, the employee must leave the area immediately and notify their supervision of the situation.
- 7.2 **Chemical Protective Suit Level 1.5-Line Breaking Protective Suit** – this equipment shall be worn when performing tasks that involve the necessity of opening components of **Hazardous Chemical Pressurized Systems** as identified in the Line Breaking Policy. This personal protective equipment is to be used as a deterrent for potential heavy splash from hazardous substances and is not intended for working in the hazardous substance.
- 7.3 **Chemical Protective Suit Level 2 & Level 3** – Use of this option is required for abating an excursion of a hazardous chemical escaping from its process containment (piping, pump, tank, dike, etc.) only. The process must be shut down and isolated to minimize the release of stored energy from the process as possible.
- 7.4 Respirator Protection – Respirator use is required when there is a possible exposure to certain chemicals such as opening the components of a system to perform a Line Break or when draining, flushing, venting, or disconnecting hoses. See the Line Break Policy for appropriate respirator use.

8.0 ESTABLISHING HOT ZONES

- 8.1 The purpose of designated “Hot Zones” around hazardous chemical areas is to communicate the requirement for the type of personal protective equipment to be worn while working in the “Hot Zone” area. This area includes the following equipment:
 - 8.1.1 Feed tank isolation valve and drain valve;
 - 8.1.2 Pump suction and discharge valves with their drain valves;

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 6 of 7

- 8.1.3 System components of the pumps containing hazardous chemicals;
- 8.1.4 Any valves associated with the transferring of this chemical product from this immediate area (example: cross-tie valving).
- 8.2 Hot Zone Markings / Protections
 - 8.2.1 Permanent Hot Zones - The area must be identified / protected by the following:
 - 8.2.1.1 Orange chain hung at least 12 feet from hazard or
 - 8.2.1.2 Orange chain hung less than 12 feet from hazard must also have solid barriers or double hung curtains
 - 8.2.1.3 Identification signs listing as Hot Zone, Hazard Present and required PPE
 - 8.2.1.4 Orange paint identifying area when feasible
 - 8.2.2 Temporary Hot Zones - The area must be identified by the use of barricade tape with tags or barriers from all approach directions that signify a temporary Hot Zone has been established.
 - 8.2.3 Care must be taken in assessing the potential hazard in identifying the potential for spray and splash when marking the Hot Zone areas. Walkways, stairwells, process piping flange, process pump and other pedestrian passage ways located within the **Hot Zone of a Hazardous Chemical Pressurized System** are to be protected with proper mitigation barriers to prevent incidental hazardous chemical or substance contact with personnel.

9.0 WAIVING HOT ZONE REQUIREMENTS

- 9.1 Coosa Pines uses the Management of Change process to determine if Hot Zone requirements will be revised (temporarily or permanently) and what actions will be taken to make any risks associated with a hot zone are controlled.

10.0 TRAINING

- 10.1 All employees shall be adequately trained in the selection, care and use of all PPE required in the workplace. Training shall include:
 - 10.1.1 When specific PPE is necessary;
 - 10.1.2 What PPE is required;
 - 10.1.3 How to properly wear, adjust, clean and inspect PPE and;
 - 10.1.4 PPE limitations.

HAZARDOUS CHEMICAL PERSONAL PROTECTIVE EQUIPMENT	Procedure Number SAF-1.16
	Issue Date October 06 , 2014
SAFETY	Revision Date March 3, 2021
	Page 7 of 7

10.2 New hires will receive this training prior to commencement of work, and refresher training will be provided to all employees annually or anytime a physical change to a **Hazardous Chemical Pressurized System** is performed.

10.3 All training shall be documented.

11.0 ATTACHMENTS

11.1 Record of Revisions

ATTACHMENT 1 RECORD OF REVISIONS

Section	Revision Number	Effective Date	Description Of Changes
	0	10-06-2014	New document
		3-17-15	Revisions
Title Page Sec. 3.0 Sec. 4.6	2	03-11-16	Updated Management Titles, Management Responsibilities, Definition of Hazardous Chemical Pressurized System.
Title Page	3	06-24-16	Changed title page for current management signatures.
Sec. 1.0, Sec. 4.1, Sec. 5.4	4	08/29/18	Updated 1.0 Purpose to include non-pressurized systems; updated 4.1 to update from vinyl or rubber coat to long CarbonX coat; addition of 5.4 Handling or Potential Exposure.
All	5	03/03/21	Periodic review; Update for SWP conversion to 360° Risk Analysis.