



# HAZARD ALERT

## Four Paper Workers Burned Chemically and Thermally Due to a Pinch Valve Internal Rubber Liner Failure

The four workers were burned by white liquor escaping from a 12-inch pinch valve (enclosed body) manufactured by “Larox” with an internal “EPDM/B ethylene propylene” liner. The valve, located on the suction side of the white liquor pressure filter supply pumps, unexpectedly released hot (approximately 195 F) white liquor out through the threaded valve stem and bushing after the internal rubber liner failed. White liquor contains sodium hydroxide, a chemical used for cooking wood chips to break the fibers down for pulping operations. It has a PH of approximately 13.2 and is a caustic slurry and muddy liquid that is very abrasive. The crew members were in the process of isolating the white liquor pressure filter supply pumps due to poor flow issues within the system.



### **Recommendations to Prevent Recurrence:**

- Properly assess all valves’ age and exposures to temperature, chemicals, abrasion and other factors in accordance with a safe operating procedure. Remove valves/internal liners from service as warranted because the enclosed valve body is not rated for system pressure.
- Contact the manufacturer and other end-users regarding a maintenance and inspection program that establishes a work order for liner replacement.
- Implement a comprehensive valve inspection procedure that includes prompt corrective actions to control the hazards identified.
- Develop standard operating procedures that includes signs of valve failure to ensure effective training for operators, maintenance and contractor personnel.
- Ensure all system valves and piping are in proper alignment.
- All valve bushings are properly seated, have good threads and not leaking.
- Valve stems are straight and not bent.
- Develop a valve assembly procedure with manufacturer.
- Insure best practices are followed in valve liner storage.



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The information provided in this alert is based on preliminary data only and does not represent final determinations pertaining to the nature of the incident or conclusions regarding the cause of this event.