

Steam line repair work under way at Hawthorn Station

The following information appeared in the Kansas City Power & Light publication 'Light Lines' dated September 8, 1998.

Steam line ruptures aren't supposed to happen. The occurrence is a rarity in the electrical industry. But it does happen, and it happened at Hawthorn, a little before midnight on Aug. 19.

There is only one main steam line on this unit, and it provides high-pressure steam to the turbine. What ruptured at Hawthorn was one of two links from the superheat outlet header to the main steam line.

There was no fire, and there were no injuries.

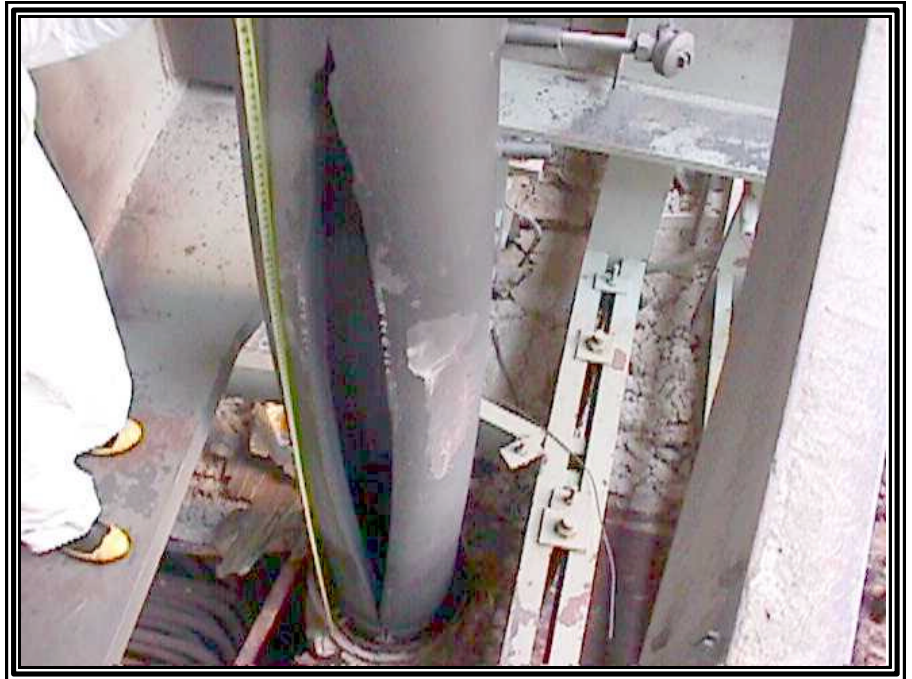
"We're extremely fortunate there were no injuries," says Jim Teaney, Hawthorn manager. "That area of the boiler is not one employees would frequently be in. However, all areas of the unit are routinely checked by operations and maintenance personnel, and we are highly thankful no one was in the area at the time."

Assessment of the damage is still under way. It was delayed by more than a week because the asbestos had to be removed first.

A Recovery Plan outlines the maintenance work to be done. Employees from the Production Division, as well as other areas, formulated the plan. "Until we know the full extent of the damage and can evaluate the various repair options, we can't finalize that plan," Teaney says. "Based on our preliminary assessment, our goal is to have the unit back on line by the end of October.

"Most of the work will be done by contractors," he says, "because it will require more certified welders than we have throughout the entire system. It will also require very sophisticated rigging and other work that we just don't do.

"When the line blew open, the 2,400 pounds of high-pressure steam caused other auxiliary piping in the area to be moved as much as 5'," he explains. "Small 'I' beams were bent; grating, roofing and siding were blown off the boiler; and pipe



Hawthorn's pipe is 18" in circumference and 2-1/2" thick. The rupture caused a tear 9' 11" long, with the widest gap being 7-1/2".

hangers were bent. And one of the critical parts needed to bring this unit back on line – the secondary superheater header, which is at the highest temperature and pressure section of the boiler – was forced off its supports and is about a foot from where it was."

While contractors repair the damage, Hawthorn employees won't be standing still. "They have been extremely flexible in their work assignments," Teaney says, "and when a unit is out of service for a lengthy period, it gives them an opportunity to do additional maintenance in the remainder of the plant to ensure improved reliability once it is returned to service."

Richard Spring, vice president of Production, said two questions have come up since the rupture: Are we running our equipment too hard, and are our units getting old?

"We run all of our equipment well within the design guidelines," he says. "Yes, our units are getting older, but since the first long seam-welded pipe failure at the Mohave Plant, we went out and conducted an extensive review of the long seam-

welded pipes in our power plants and have set up monitoring under our Life Assessment and Management Program."

All the manufacturer's records for the pipe at Hawthorn indicate it was supposed to be seamless, but obviously it wasn't. "There have been other documented incidents of ruptures and other failed seams on steam lines, but it is not a common occurrence," Spring adds.

What is the financial impact? "Employees are already asking how this is going to affect RESULTS and EVA," Spring says. "An important thing to note is that we have insurance. However, we all must remain focused on meeting our year-end objectives."

Marcus Jackson, executive vice president and chief operating officer, says, "Our employees did a great job. They remained very conscious of safety at all times, and they were able to mitigate the environmental concerns quickly and in accordance with all regulatory agencies."