

Boiler Fire

In mid-2009, there was a boiler fire at a processing facility on Maui. The incident involved a watertube type boiler that had been purchased in 1998, and in operation for the past ten years. The boiler was located under a shed roof next to four horizontal holding tanks. During non-operation hours, the boiler was left unattended in the idle mode (low-fire). It was determined that over the years, landfill debris, paper and plastic had collected in the areas surrounding the boiler and holding tanks; this accumulation was the contributing factor to the cause of the fire. No injuries were reported, but the estimated damage caused by the fire was in excess of \$50,000.



The boiler's burner assembly and safety controls were destroyed by the fire. The boiler tubes were left intact with no signs of fatigue, but the external skin and insulation were scorched. In addition, one holding tank was caved in, while the others sustained heat-induced rippling on their exterior shells. While the boiler shell and two adjacent tanks received only residual damage, the entire boiler system was rendered inoperable and in need of total replacement.

The processing facility is a subcontractor of a company who holds the landfill operation contract with the County. The processing facility has operated as an industrial processor for thirteen years. They receive grease and used oil from commercial businesses and government agencies and recycle it into diesel oil for profit.

The investigation concluded that a piece of landfill debris came into contact with the burner assembly and produced enough heat to ignite some rubbish nearby and cause the failure of three pumps, the boiler controls and burner assembly, and one empty holding tank. It was also concluded that the boiler itself was not faulty, nor was the company negligent in overall boiler maintenance and operations. However, it was found that the boiler was in operation without a valid permit.

Citations were issued totaling \$1000.

Recommendations:

1. Ensure all boilers in operation have the appropriate operation permit.
2. Adopt fire prevention measures near any heat producing equipment and ensure all employees know the procedures and policies regarding fire prevention.
3. Ensure all employees involved are properly trained on safe boiler operation.