

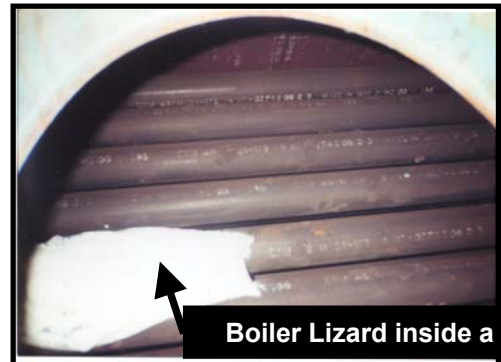


water SOLUTIONS™

CASE STUDY Boiler Lizard Midwestern College

Problem: In the past, corrosion of the boilers and deaerator was a severe problem during seasonal shutdown at a midwestern college. A new boiler and deaerator were recently installed and the chief engineer wanted to protect this new equipment from this type of corrosion. The chief engineer noted that almost all of the boiler corrosion occurred during the idle period when the equipment was drained for their annual inspections and maintenance.

Application: Boiler Lizards were applied to a 20,000 per hour water tube boiler and a 1000 HP fire tube boiler. In the past years, off-season corrosion rusting occurred in the off-line equipment. The Boiler Lizards were placed in the boilers and the deaerator. The Boiler Lizards were applied to a 20,000 per hour water tube boiler and a 1000 HP fire-tube boiler. The Boiler Lizards were placed in the boilers and deaerator at a rate of one Boiler Lizard per thousand gallons. The outer bag was removed and the lizard was slit down the center and placed strategically in the boiler. Placement was on each end of the boiler both in the steam and mud drum. In the fire tube boiler, the Boiler Lizards were placed on top of the tubes and the belly of the boiler. The placement of the Boiler Lizards allowed the Vapor Corrosion Inhibitors (VCI) to coat all internals of the boiler and protect the system from corrosion. Corrosion coupons were installed and pictures were taken. The boiler and deaerator were then closed and sealed.



Boiler Lizard inside a boiler

Results: The boilers were opened prior to being put back on line. Inspection indicated that the boilers were in the same condition as when they were laid-up months earlier. A black protective magnetite film still coated the internals of the boiler and no rusting or other corrosion was evident. This was especially impressive since some condensation of steam through a leaking valve was allowed to pool. No corrosion was evident in the area of water at the interface. The customer was extremely satisfied with the protection and the success of the Boiler Lizard. The boilers were filled as normal with deaerated water, drained, refilled and then put back on line. The polyalcohol bags and remaining VCI powder was dissolved in this process and removed from the boiler system. The iron level of the boiler water was 20 times lower than during past boiler startups.

If you would like more information regarding the Boiler Lizard, please contact U.S. Water Services/Utility Chemicals at 763-689-3636 or visit our website at www.uswaterservices.com