



Department of Veterans Affairs – Office of Construction & Facilities Management

## **CONSULTING SUPPORT SERVICE (003C5)**

### **Technical Topics**

#### **Boiler Heat Recovery – Economizers**

April 5, 2013

The major efficiency loss of a boiler is caused by the hot stack gases discharging to the atmosphere. One of the most cost-effective ways of improving the efficiency of a high pressure steam boiler is to install an economizer on the boiler. An economizer is a heat exchanger, which transfers heat from the stack gases to the incoming feedwater.

Typically, on a high pressure water tube boiler, the efficiency improvement with an economizer is 2 to 4%, depending on firing rate. On a high pressure fire tube boiler, the improvement is 2 to 3.5%, depending on boiler size and firing rate.

The economizers are located in the boiler stack close to the stack gas outlet of the boiler. They may be supported from overhead or from the floor. A feedwater line, which serves the boiler, is piped to the unit. No additional feedwater control valves or stack gas dampers are required.

Generally, economizers are manufactured by companies specializing in this type of equipment. They are often cataloged by boiler manufacturers as accessory equipment.

Technical assistance on the application of boiler economizers is available from the Consulting Support Service (003C5), please call Doug Ryan at 202-632-5519.