

Central Power Plant Feed Water System Deaerator Upgrade



Project Description

Revised to assist with the expedited removal of a generator for repair and reinstallation. All financial obligations for the project were finalized Jul-16.

The Central Power Plant (CPP) provides steam for the heating and cooling of many buildings on Central Campus, and also uses the steam produced to generate electricity. This co-generation allows for a very efficient operation and the Environmental Protection Agency has recognized our efforts in efficiency, fuel energy savings, and greenhouse gas emission reduction. The CPP's feed water system includes deaerators that remove oxygen from water as part of the steam generation process. This project replaced two 1940's deaerators with two modern deaerators meeting current industry standards. Each deaerator weighs approximately 140,000 pounds when filled, measuring 18 feet in diameter and 20 feet in length. An existing decommissioned boiler was removed, including abatement of lead and asbestos, to provide space for the new system. The new equipment will yield higher-quality water and increase boiler system efficiency, reliability, life expectancy, and redundancy. It will also result in reduced boiler corrosion, component failure, and maintenance.

Energy Efficiency Measures

- GHG emissions reduced by improving steam-generating efficiency
- New deaerators improve the quality of feedwater to keep boiler surfaces clean and free from corrosion and scaling; thereby improving heat transfer; resulting in less fossil fuels used to generate the steam
- Updated deaerator monitoring system and controls minimize potential inefficiencies or upsets, thereby minimizing use of fuels or production of GHGs

Other Sustainability Features

- Hazardous materials on or within Boiler 5 properly remediated and disposed
- Reuse of existing Boiler 5 support steel columns in new deaerator support system
- Reduced use of water treatment chemicals by improving oxygen removal from feedwater, thereby reducing the need to use oxygen scavenger and anti-scaling chemicals

Project Data

- Budget: \$5.75 M
- Schedule: Completion Scheduled for Fall 2014
- Square Feet: N/A

Substantially Complete: October 2014

- Project Status: Substantial Completion
- Design Complete: 100%
- Construction Complete: 100%