

C R A D A facts

DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY

FILTRATION
PROJECT

HIGH-TEMPERATURE GAS-STREAM CLEANUP TEST FACILITY

Capabilities

In support of METC's hot-gas filter development program, the high-temperature, gas-stream cleanup test facility was designed to

- investigate conventional and novel approaches to high-temperature filtration,
- conduct detailed parametric studies that characterize particulate control devices under well-controlled conditions, and
- screen new materials for other high-temperature applications, such as heat exchanger tubes.

This new facility utilizes a natural gas-fueled combustor to produce high-temperature process gas, and a screw feeder to inject ash, or other fine media, into the gas stream. The vessel that surrounds the particulate control devices has an inside diameter of roughly 0.20 meters (8 inches) and is about 3 meters (10 feet) long. Three commercial-size filter elements can be tested simultaneously, and the facility is capable of operating over a wide range of conditions. Operating temperatures can vary from 540 to 870 °C (1,000 to 1,600 °F), and the operating pressure can vary from 0 to 400 kPa (0 to 60 psig).

Opportunities

- testing and analyses of conventional high-temperature filtration devices
- testing and analyses of novel high-temperature particulate control devices
- conducting detailed parametric studies that characterize particulate control devices under well-controlled conditions
- screening materials for other high-temperature applications

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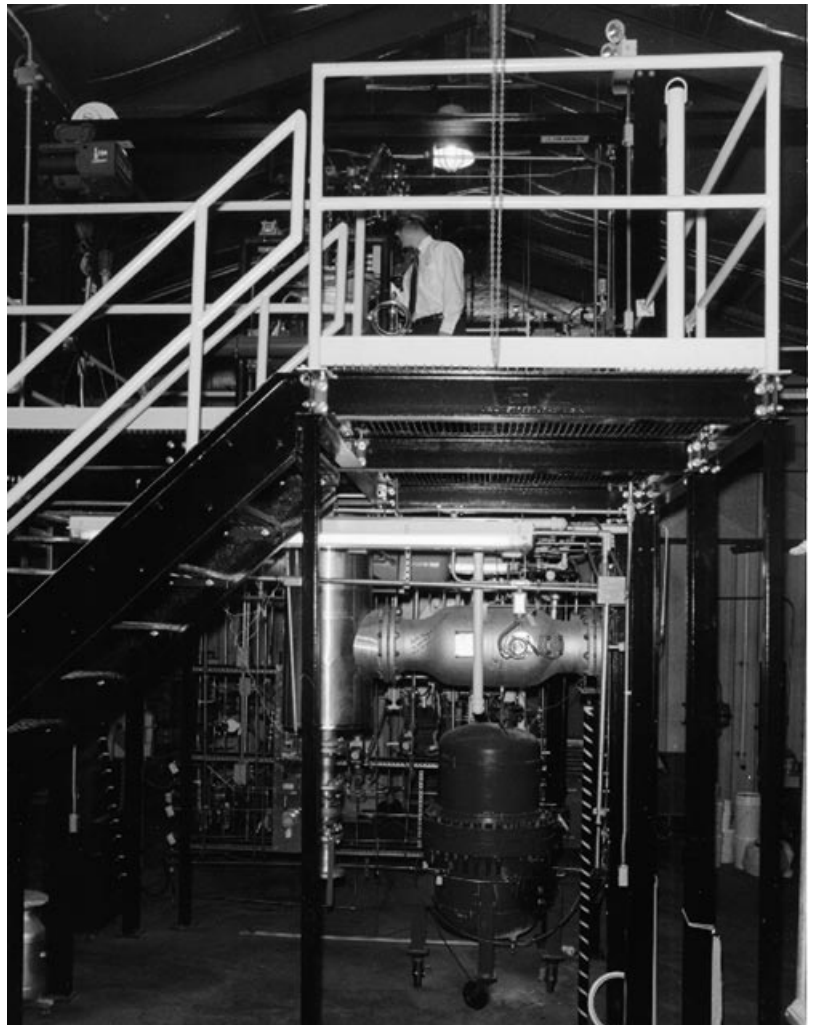
HIGH-TEMPERATURE GAS-STREAM CLEANUP TEST FACILITY



High-Temperature Gas-Stream Cleanup Test Facility Project Team



Top of filter vessel and typical filter element



Feeder vessel (front), combustor and bottom of filter vessel (back)