

Next Generation Ultrasupercritical Power Plants and Carbon Capture and Storage (CCS)

New Technology Development for CO₂ Control

● Higher Temperature and Pressure for Higher Efficiency

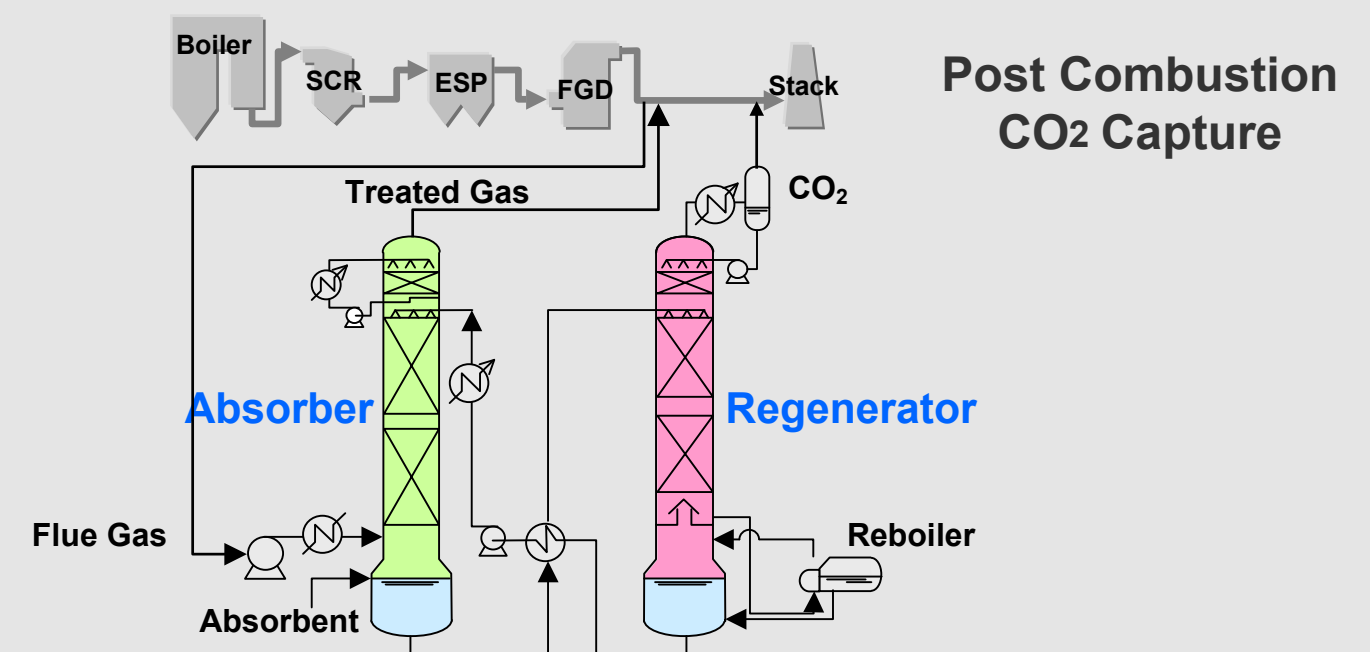
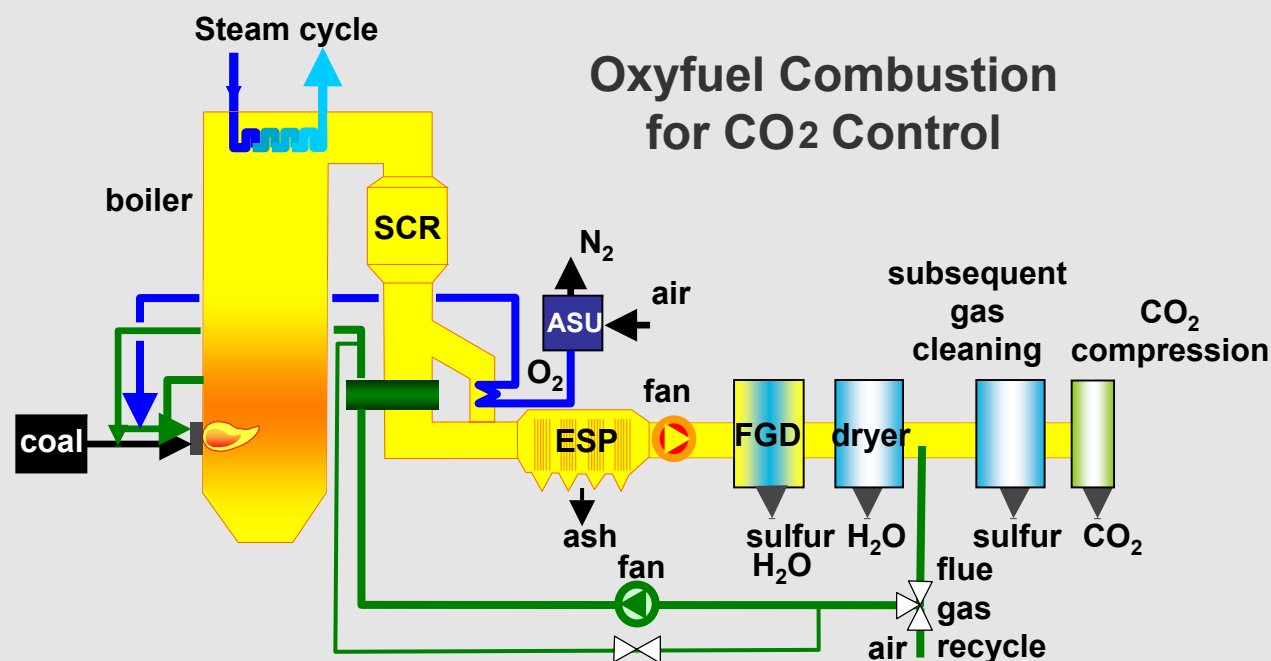
- Ultra super critical steam pressure of 5000 psi and temperature of 1300° F
- CO₂ and all other emissions are reduced by about 26% over existing US installed fleet

● CO₂ Capture and Sequestration

- Oxy Fuel Combustion for CO₂ Control:
 - Utilization of oxygen to enhance combustion for CO₂ control
 - Greater than 90% reduction of CO₂ emissions
- Post Combustion CO₂ Capture:
 - Cleaning of the flue gas stream utilizing a scrubber to remove CO₂
 - Greater than 90% reduction of CO₂ emissions



Latest Supercritical Plant in US:
MidAmerican Energy's Walter Scott Jr.
Energy Center Unit 4



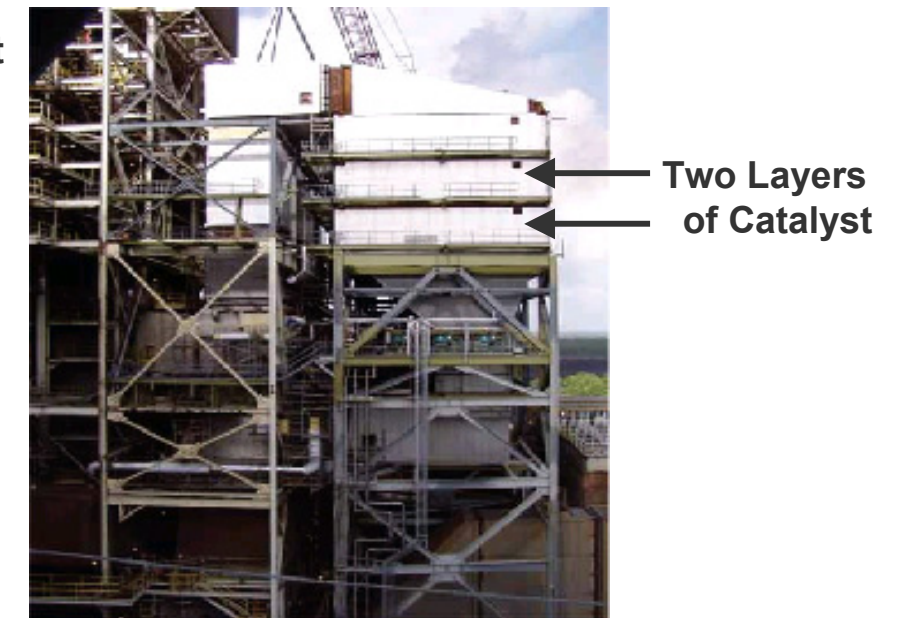
Air Quality Control System (AQCS)

Hitachi Offers Integrated Pollution Control Systems to Optimize Performance, Efficiency and Provide Maximum Emission Reductions

● Selective Catalytic Reduction Systems (SCR)

- Only supplier of both SCR Systems and Catalyst for coal-fired applications in US market
- Latest State-of-the-Art Catalyst:
 - Reduces Nitrogen Oxides (NO_x) by over 90%
 - Minimizes Sulfur Dioxide to Sulfur Trioxide (SO₂ to SO₃) conversion
 - Oxidizes Mercury to enable up to 90% reduction in Mercury emissions

SCR System Retrofit at an Existing Plant



● Flue Gas Desulfurization Systems (FGD)

- Greater than 99% removal of Sulfur Dioxide (SO₂) in a coal plant
- Multi-pollutant control co-benefits include removal of Sulfuric Acid Mist, Mercury, Hydrogen Chlorides, Hydrogen Fluorides, etc.

1050MW AQCS
at J-Power-Tachibanawan

