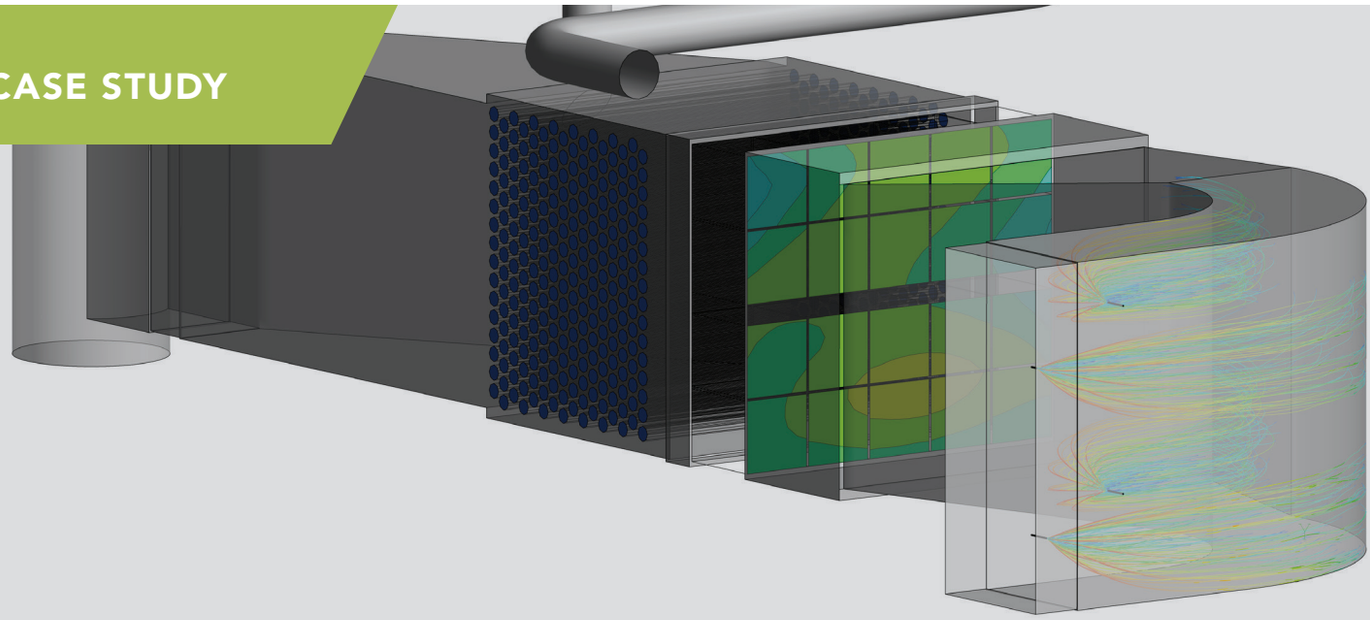
CASE STUDY



Direct Injection-SCR and CO Reduction on 440 KPPH NG Boiler

CECO ENVIRONMENTAL

OWNER/OPERATOR: Ingredion Inc. — Argo Facility

LOCATION: Bedford Park, IL

PROJECT COMPLETED: 2018

THE CHALLENGE: The Ingredion Argo facility needed to expand their steam capacity by 440 KPPH while meeting the air permit requirement of NOx <10 ppm and CO <50 ppm from 10%-110% Load. On a boiler of this size, this required the use of both SCR and CO Catalyst to meet the air permit requirements. CCA was awarded the emissions control system. The end user preferred a direct injection system over a conventional vaporizer/decomposition system to save on operating and utility costs. All while meeting their stringent emissions requirements.

SYSTEM PARAMETERS:

- One 440KPPH Natural Gas Fired Package
- Flue Gas Flow; 565,000 lb/hr
- Exhaust Temp at Catalyst; 635 F
- Emissions Performance; NOx <9 PPM, CO <10ppm, NH3 Slip <5 PPM

THE SOLUTION: An aqueous ammonia, direct injection SCR system, coupled with a multi-pollutant reduction catalyst efficiently reduced the NOx and CO emissions below the permitted level.

THE RESULTS:

- 440KPPH Natural Gas Fired Package
- Flue Gas Flow; 565,000 lb/hr
- Emissions Performance; NOx <9 PPM, CO <10ppm, NH3 Slip <5 PPM

Performance:

- 10% – 110% Load
- NOx <10 ppm
    - >90% Reduction
- CO <10 ppm
- NH3 Slip <10 PPM

CCA