Project: FY20-XC-222
Title: Mitigation of Alkali Promoted Ash Deposition and Emissions from Coal Combustion
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Purpose: Barr Engineering Co. is proposing to lead a multi-faceted team to study and demonstrate technology that will reduce the formation and presence of aerosols in the combustion zone of a lignite-fired utility boiler. The technology is for a low-cost retrofit feature to reduce fouling and overall boiler and furnace temperatures when using high alkali coals, and to help plants explore ways to reduce aerosols which is needed for the consideration in Carbon Capture technology.

The team recognizes that addressing this operational problem represents an opportunity to improve generation efficiency and carbon capture readiness. The proposed project includes bench-scale sorbent testing, field demonstration of sorbent injection at a full-scale power plant for fouling mitigation, developing a sorbent screening tool, performing a Techno-Economic Assessment, and advancing the technology to full-scale demonstration readiness.

Duration: 36 months

Participants & Cost Share:
- DOE $4,000,000
- Minnkota Power Cooperative (in-kind) $ 200,000
- Otter Tail Power Company $ 100,000
- North American Coal (NAC) $ 100,000
- University of ND (UND) (in-kind) $ 199,412
- NDIC $ 400,000
- Total $4,999,412

Project Deliverables: Status Reports
Q4 2019 report-complete, Q1 2020 report-complete, Q2 2020 report-complete, Q3 2020 report-complete.