

Eclipse Product: Flue Fire Burners

Submitted by: John Stanley

Application: Cogeneration / Drying

Site Location: Russell, Kansas

System Description: The burner supplied on this application provides heat to a Dried Distiller's Grain (DDG) rotary dryer. The burner is designed for both fresh air firing when the turbine is not operating and TEG firing during normal turbine operation. The heated exhaust gases are transferred to a DDG rotary dryer to dry the distiller's grain, a byproduct of the ethanol making process. Due to low oxygen content in the airstream to the burner, a Low Oxygen Flue Fire with 50% primary combustion air was selected for this application.

Technical Data:

Turbine

Make Solar
Type Titan 130

Turbine Exhaust Gas

Mass Flow 300,000 lb/h
Oxygen level 15.0 % wet
Temperature in 400° F
Temperature out 720° F

Fresh Air Firing

Mass Flow 200,000 lb/h
Oxygen level 20.9 % wet
Temperature in 0° F
Temperature out 750° F

Burner

Duty 40.0 MMBTU/hr (max.) – Fresh Air Firing
25.0 MMBtu/hr (max.) – TEG Firing
4.0 MMBtu/hr (min.)

Fuel Natural Gas



Burner installed in turbine exhaust duct.



Detail of burner gas and air piping.



Burner being test fired during initial set-up.



Eclipse Combustion

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