1.1.3 Ring Dryer Operating Conditions

The ring dryer has been designed to continuously operate at the following maximum capacities and temperatures:

Component	Wet Distiller's Grain and Soluble		
	Design Basis	50% Modified Wet Cake	Units
Wet Grain to Dryer	67,109	n/a	lb/hr
Wet Grain Moisture	65	n/a	%
Syrup Feed from Evaporator	45,752	n/a	lb/hr
Syrup Moisture	60	n/a	%
Dry Recycle Requirement	440,000	n/a	lb/hr
Gross Feed to Dryer	552,861	n/a	lb/hr
Conditioned Feed Moisture to Dryer	24	n/a	%
Product Rate Out of Dryer	46,398	n/a	lb/hr
Product Moisture Out of Dryer	11	n/a	%
Evaporation	66,463	n/a	lb/hr
Burner Outlet Air Temperature	785	n/a	°F
Dryer Outlet Temperature	240	n/a	°F
Total Heat Requirement (32°F ambient)	83.1	n/a	MM Btu/hr
Total Bleed-Off Volume to RTO	63,000	n/a	ACFM
Residual Wet Grain to 50% Product	-	n/a	lb/hr
Residual Syrup to 50% Product	-	n/a	lb/hr
Dry Recycle Rate to 50% Product	-	n/a	lb/hr
50% Product Rate	-	n/a	lb/hr
50% Product Moisture	-	n/a	%

1.1.4 Fluid Bed Cooler Operating Conditions

The Fluid Bed Cooler has been designed to continuously operate at the following maximum capacities and temperatures:

Components	Design Basis	50% Modified Wet Cake	Units
Feed Rate	46,398	n/a	lb/hr
Feed Moisture	11	n/a	%
Product Rate	45,884	n/a	lb/hr
Product Moisture	10	n/a	%
Evaporation	516	n/a	lb/hr
Inlet Air Temperature	75	n/a	°F
Exhaust Volume	19,700	n/a	ACFM
Exhaust Temperature	123	n/a	°F
Product Temperature (Based on under bed temperature of 75F)	115	n/a	°F

To achieve stated product temperature, evaporative cooling is a necessary part of the fluid bed cooler's operation. Consequently, the moisture content of the incoming product must be above the desired 10% final moisture content.