

Trimble County CT Fuel Oil Analysis

Problem Definition

What is the impact on the TGT system during low-pressure events of reducing gas demand at either the Trimble County or Mill Creek stations?

Existing Transport Services

Service	Months	Primary Delivery Point	Daily Volume (MMBtu)	Hourly Rights (MMBtu)
Summer No Notice (SNS)	Apr-Oct	Trimble County	100,000	*1/16
Enhanced Short Term Firm (ESTF)	Apr-Oct	Trimble County	50,000	*1/16
Winter No Notice (WNS) (Dec-Feb)	Dec-Feb	Trimble County	229,000	*1/16
WNS (Mar & Nov)	Mar & Nov	Trimble County	114,500	*1/16
SNS	Apr-Oct	Cane Run	72,000	*1/16
Short Term Firm (STF)	Apr-Oct	Cane Run	44,000	*1/24
WNS	Nov-Mar	Cane Run	107,000	*1/16

Key features of Transport Services

SNS – Gas can be taken from imbalance even if gas has not been scheduled; No min scheduled volume; Hourly Rights 1/16th of Daily Rights. Hourly Rights to secondary delivery points are 1/24th of Daily Rights.

WNS – Negative imbalance prohibited; Gas can be taken from imbalance even if gas has not been scheduled; Full Daily Rights achieved by scheduling at least half of contract volume; Overrun charges apply if Daily Rights exceeded; Hourly Rights are 1/16th of Daily Rights; Imbalance can be up to 3x Daily Rights; Hourly Rights to secondary delivery points are 1/24th of Daily Rights.

STF – Hourly rights are 1/24th of Daily Rights; Gas must be scheduled; No imbalance rights, but gas not burned may be rolled to SNS contract.

ESTF – STF service with enhanced Hourly Rights that are 1/16th of Daily Rights.

Gas Pressure on TGT System at TGT Takeoff Needed to Operate LKE Units

	CR7 ¹	PR13	MC5 ²	TC CTs ³
During Startup	463 psig	420 psig	390 psig	440 psig
Min Load	463 psig	375 psig	390 psig	335 psig
Max Load	510 psig	375 psig	390 psig	480 psig

	MC3	MC4	TC1	TC2
During Startup	25 psig	25 psig	100 psig	100 psig
Coal Mill Swap	8.5 – 10 psig	13.5 psig	100 psig	100 psig

Hourly Gas Consumption by LKE Units

	CR7	PR13	MC5	One TC CT
Min Load	2,520 MCFH	1,005 MCFH	1,679 MCFH	1,168 MCFH
Max Load	4,800 MCFH	1,720 MCFH	4,085 MCFH	1,800 MCFH

	MC3	MC4	TC1	TC2
During Startup	204 – 243 MCFH	236 – 273 MCFH	900 MCFH	825 MCFH ⁴
Coal Mill Swap	130 – 140 MCFH	130 – 140 MCFH	300 MCFH	275 MCFH

¹ Assumes gas compression is “on.” The minimum operating pressure listed by the manufacturer for the CR7 compressor is 460 psig. However, CR7 was capable of full-load operation during Winter Storm Elliott at 426 psig.
² Assumes base and incremental gas compression is “on.” Unit requires 390 psig minimum to operate, so starting unit at that pressure may be infeasible depending on the resulting pressure drop on pipeline.
³ Reflects addition of new software. Assumes gas compression is “on.” Startup assumes the other five TC CTs are operating at max load with -20 F ambient temperatures. Min / Max assumes all six TC CTs at the same load point (min or max) with -20 F ambient temperatures. Pressures at min and max load are based on manufacturer’s estimates and may be conservative.
⁴ If TC1 is offline an additional 0.100 MMcuft/hr is needed to operate the Aux Boiler for TC2 startup.

TGT Pipeline Analysis

Generation Scenarios

1. All LKE gas units operating at full load
2. All units except 1 TC CT operating at full load
3. All units except 2 TC CTs operating at full load
4. All units except 3 TC CTs operating at full load
5. All units except 4 TC CTs operating at full load
6. All units except MC5 operating at full load

System Pressure Scenarios

1. Normal operations
2. WS Elliott pressure conditions
3. Other TX Gas planning scenario for limited operations?

Other questions

- What should we assume re: duration of low-pressure event?
- Confirm we should assume Bluegrass CTs will be off/interrupted during low pressure event?
- Will the Texas Gas analysis recognize when pressures are sufficient for maintaining partial load operation (but not max load operation) and adjust gas demand accordingly (e.g., from full load to min load)?