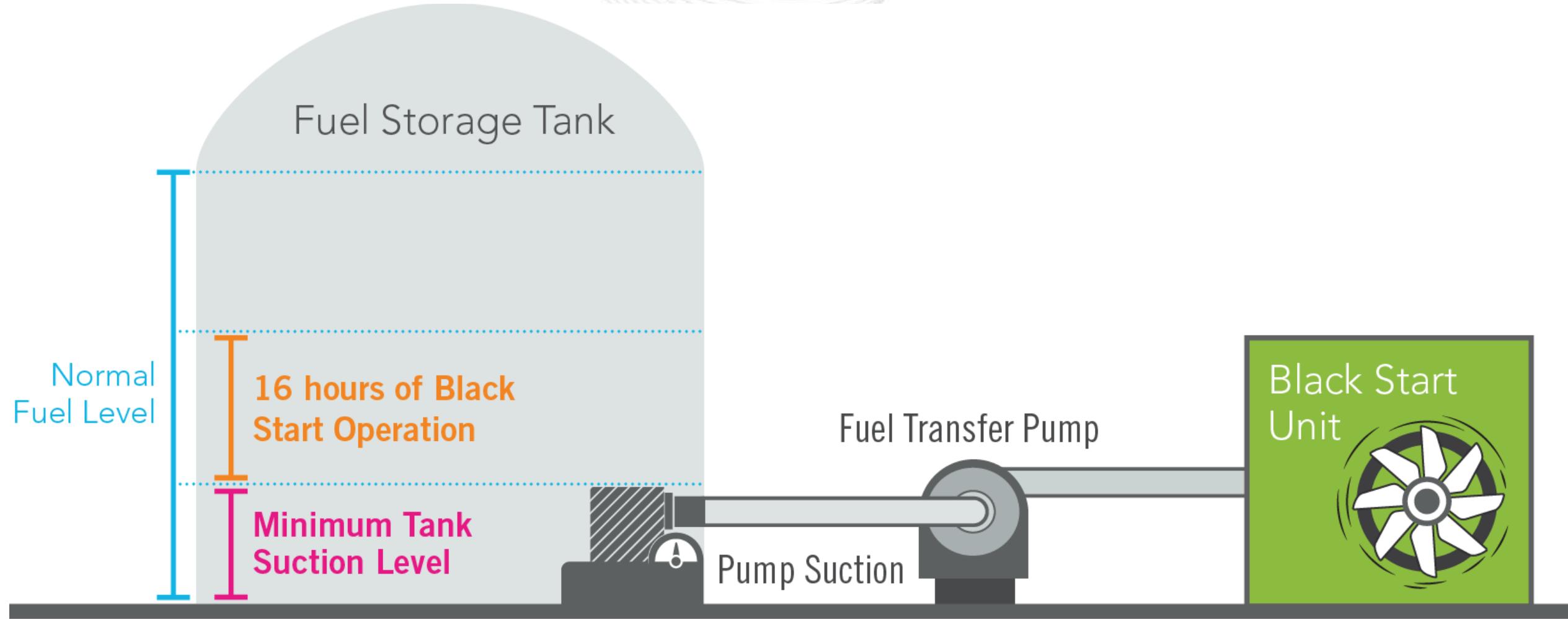




PJM/IMM Proposal for Black Start MTSL Compensation

Markets & Reliability Committee
September 28, 2017





$$\{\text{MTSL} + [(\# \text{ Run Hours}) * (\text{Fuel Burn Rate})]\} * (\text{12 Month Forward Strip} + \text{Basis}) * (\text{Bond Rate})$$

Where

- MTSL = Minimum Tank Suction Level
- # Run Hours = actual number of run hours as defined in TO Restoration Plan (lesser of 16 hours or TO Requirement)
- Fuel Burn Rate = actual fuel burn rate for unit
- 12 Month Forward Strip = average forward prices traded May 1
- Basis = transportation costs + variable taxes
- Bond Rate = Moody Utility Index Baa1 Bonds May 1

In the case where more than one Black Start Unit shares a common fuel tank, only one Black Start Unit will be eligible for the recovery of the MTSL in its fuel storage calculation. The MTSL for the other Black Start Unit(s) sharing the common fuel tank shall be zero.

$\{(\text{Black Start/Energy Tank Ratio} * \text{MTSL}) + [(\# \text{ Run Hours}) * (\text{Fuel Burn Rate})]\} * (12 \text{ Month Forward Strip} + \text{Basis}) * (\text{Bond Rate}) + \text{Dual Fuel Unit Adder}$

Where

- MTSL = Minimum Tank Suction Level
- Black Start/Energy Tank Ratio
= $(\# \text{ Run Hours} * \text{Fuel Burn Rate}) / (\text{Tank Capacity} - \text{MTSL})$
- Dual Fuel Unit Adder
= \$ 0 for non-dual fuel units
= \$ 12,000 for a dual fuel Black Start unit receiving MTSL compensation (pro-rated for multiple BS units sharing one tank)

All Black Start Units that shares a common fuel tank, will be eligible for the recovery of the Black Start/Energy Tank Ratio of its MTSL in its fuel storage calculation.

2016 Data for 17 dual fuel units that received MTSL compensation

Current MTSL Compensation - \$ 441,711

Under PJM/IMM proposal - \$ 22,190

Difference - \$ 419,521

½ Difference - \$ 209,760

17 units * \$12,000 - \$ 204,000 (Approximately ½)

- Estimated Annual Revenue in 2016 for a 20 MW Oil Fired Combustion Turbine in Net CONE Area 1

- Fixed BSSC = $20 * (\$345.20 * 365) * 0.02 = \$50,399$

- Variable BSSC (2016 average) = \$ 3,570

- Training Costs = $50 * \$75/\text{Hour} = \$ 3,750$

- Fuel Storage = $\$23,384^* + [(16 * 1950) * (1.4 + 0.1) * 4.71\%] = \$25,588$

times (1+ 10%) (Incentive Factor) = \$91,638

* Average 2016 MTSL compensation for dual fuel units - \$23,384 (before incentive factor)

- Estimated Annual Revenue in 2016 for a 20 MW Oil Fired Combustion Turbine in Net CONE Area 1
 - Fixed BSSC = $20 * (\$345.20 * 365) * 0.02$ = \$50,399
 - Variable BSSC (2016 average) = \$ 3,570
 - Training Costs = $50 * \$75/\text{Hour}$ = \$ 3,750
 - Fuel Storage = $(0.05^* * \$23,384)$
 - $+ [(16 * 1950) * (1.4 + 0.1) * 4.71\%]$ + \$12,000 = \$15,373
 - times (1 + 10%) (Incentive Factor) = \$80,401

*2016 Average Dual Fuel Black Start/Energy Ratio - 0.05

- MIC endorsement – 9/13/2017
- MRC first read – 9/28/2017
- MRC endorsement – 10/26/2017
- MC endorsement of Tariff language – 11/30/2017
- Proposed Implementation – 6/1/2018