APPENDIX D: NO. 6 FUEL OIL QUALITY SPECIFICATIONS *[Revised 06/11/2013]*

QUALITY SPECIFICATIONS *(NOTE 1)*		TEST METHODS *(NOTE 4)*	DELIVERY LOCATIONS		
CHARACTERISTIC --OR-- PROPERTY	**UNITS / CONDITIONS**		**PORT MANATEE**	**MIAMI / FISHER ISLAND (TURKEY POINT)**	**PALM BEACH (MARTIN PLANT)**
SULFUR	WEIGHT %	D-4294 ***(NOTE 4.4)***	0.70 MAX	0.70 MAX	0.70 MAX
HEATING VALUE ***(NOTE 2)***	MMBTU/BBL	D-240	6.340 MIN	6.340 MIN	6.340 MIN
WATER & SEDIMENT (W&S) ***(NOTE 3)***	VOLUME %	D-95 & D-473	1.0 MAX	1.0 MAX	1.0 MAX
SEDIMENT	WEIGHT %	D-473	0.20 MAX	0.20 MAX	0.20 MAX
FLASH POINT-PENSKY	°F	D-93	150 MIN	150 MIN	150 MIN
POUR POINT	°F	D-97	60 MAX	60 MAX	60 MAX
ASH	WEIGHT %	D-482	0.10 MAX	0.10 MAX	0.05 MAX
VISCOSITY	SSF@ 122°F	D-445 ***(NOTE 4.5)***	25 MIN / 225 MAX	75 MIN / 225 MAX	25 MIN / 140 MAX
GRAVITY	API	D-287 or D-4052	8.0 MIN	6.0 MIN	6.0 MIN
VANADIUM	PPM	IP-470 or D-5863 A or B or D-5708 A or B	200 MAX	200 MAX	200 MAX
NITROGEN	WEIGHT %	D-5762 MODIFIED ***(NOTE 4.3)***	.40 MAX	.40 MAX	.30 MAX
ALUMINUM + SILICON	PPM	IP-470 or D-5184	120 MAX	120 MAX	120 MAX
CALCIUM	PPM	IP-470 or D-5863 A or B or D-5708 A or B	100 MAX	100 MAX	100 MAX
ASPHALTENES	WEIGHT %	BRITISH STANDARD BS-4676; IP-143.	8.0 MAX	8.0 MAX	8.0 MAX
DICYCLOPENTADIENE (DCPD)	PPM	***(NOTE 4.1)***	600 MAX	600 MAX	600 MAX
ZINC + MAGNESIUM + PHOPHOROUS	PPM	D-5863 A or B or D-5708 A or B	30 MAX	30 MAX	30 MAX
SEPARABILITY NUMBER	separability number	D-7061-04 MODIFIED ***(NOTE 4.2)***	4.0 MAX	4.0 MAX	4.0 MAX
DELIVERY TEMPERATURE	°F	N/A	105 MIN / 140 MAX	105 MIN / 140 MAX	105 MIN / 140 MAX

NOTES

1. **QUALITY WARRANTY:** Product shall meet the Quality Specifications described herein and, additionally, **(a)** shall not contain petrochemical wastes, residues, spent chemicals, tar bottoms, hazardous waste, nor any other extraneous materials or matter foreign to No. 6 fuel oil, (**b)** shall have a consistent, marketable odor characteristic of No. 6 fuel oil, and (**c)** shall be free from excessive amounts of solid matter likely to make cleaning of suitable strainers necessary.
2. **HEATING VALUE:** A Quality Adjustment shall be made to the unit price for cargos with Heating Value below the minimum specified above, with the reduction in unit price calculated in accordance with the following formula: $U_{BTU} = U \times (M - B) / M$
   where: U_{BTU} is the amount of the price reduction ($/BBL), **U** is the unit price calculated pursuant to the contract ($/BBL), **M** is the minimum Heating Value (MMBTU/BBL) specified above, and **B** is the actual Heating Value (MMBTU/BBL) of the cargo as determined by the Delivery Inspector.
3. **WATER & SEDIMENT (W&S):** An adjustment shall be made to the Delivery Quantity for cargos with greater than 0.30% W&S, with the reduction in volume calculated in accordance with the following formula: $Q_{W\&S} = Q \times (A - 0.30\%)$
   where: $Q_{W\&S}$ is the amount of the volume reduction (BBL), **Q** is the Delivery Quantity as determined by the Delivery Inspector (BBL), and **A** is the actual W&S as determined by the Delivery Inspector (volume %).
4. **TEST METHODS:** The latest revision of test methods shall apply.
   - **4.1 DICYCLOPENTADIENE (DCPD):** Content shall be determined by extraction with a Gas Chromatograph/Mass Spectrometer (GC/MS).
   - **4.2 SEPARABILITY NUMBER**: The D-7061 Procedure 9.1 shall be modified as follows: **(a)** dilute 10g of oil sample with toluene, in a volume ratio in accordance with Annex A1 **(b)** put bottle on a magnetic stirrer and stir for 15 minutes. Follow all other instructions per ASTM D-7061-04.
   - **4.3 NITROGEN:** All nitrogen standards must be obtained from a company acceptable to FPL. Calibration curves must include calibration points at 250 and 500 ng/μl. All FPL samples require a 1g sample to 10 ml solvent dilution ratio. Use of ASTM F60509 fuel oil round robin for secondary quality control standard during each analytical run of all FPL samples is required.
   - **4.4 SULFUR:** National Institute of Standards And Technology (NIST) No. 6 fuel oil standards shall be used for calibration of the sulfur equipment.
   - **4.5 VISCOSITY:** Run viscosity test by ASTM D-445 and convert the results to units of SSF@122°F using the table in ASTM D-2161.
5. **IFIA COMPLIANCE:** All fuel oil deliveries to FPL at any location, and associated laboratory and gauging services, must comply with the USA Application of API MPMS Chapter 11.1, Temperature and Pressure Volume Correction Factors for Generalized Crude Oils, Refined Products, and Lubrication Oils (2004 Revision) which requires the final CTL value to be rounded to 5 significant figures after the decimal point and based on one-tenth degree for API Gravity and Temperature. This requirement is in accordance with the Technical Bulletin 06-7 of the International Federation of Inspection Agencies ("IFIA") and a letter dated December 22, 2006 from the Laboratories and Scientific Services of the U.S. Customs and Border Protection Agency.