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September 20, 2001

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BUREAU OF AIR REGULATION

Mr. Hamilton S. Oven, Jr.
Siting Coordination Office
Florida Department of Environmental Protection
2600 Blair Stone Road, MS 48
Tallahassee, Florida 32399

Re: Osprey Energy Center – PPSA No. PA00-41
Changes in Near-Field Air Quality Impacts
Replacement Tables

Dear Mr. Oven:

Attached are replacement tables for the letter sent to you on August 21, 2001. The replacement tables (Tables 6-2R and F-1R) provide the maximum predicted concentrations by operating load and ambient temperature that were shown as 0.0 $\mu g/m^3$ in the previous submittal. These replacement tables do not affect the tables that show the summary air quality impacts sent in the previous submittal. The replacement tables were faxed to Mr. Cleve Holladay, Florida DEP on September 19, 2001.

If you have any questions or require other information regarding this analysis, please contact me at (352) 336-5600. Thank you for your assistance and attention to this matter.

Sincerely,

Robert C. McCann Jr.

Robert C. McCann, Jr.
Manager, Air Resources; Principal

RCM/jkw

Attachments

cc: Steve Palmer, FDEP
Scott Goorland, FDEP
Al Linero, FDEP, Air Bureau
Ted Baldwin, Calpine
Ben Borsch, Calpine
Tim Eves, Calpine
Joe Regnery, Calpine
David Dee, Landers and Parsons
K.F. Kosky, Golder
S.R. Marks, Golder
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Table 6-2R. Maximum Pollutant Concentrations Predicted for Two Combined-Cycle Combustion Turbines and Cooling Tower by Operating Load and Air Inlet Temperature (Revised 7/25/01 Stack Height, Diameter, Location)

| | | Maximum Predicted Concentrations (ug/m$^3$) by Operating Load and Air Inlet Temperature (1) | | | | | | | | | EPA Class II Significant Impact Levels |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Averaging | Base Load | | | 75% Load | | | 60% Load | | | |
| Pollutant | Time | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F | (ug/m$^3$) |
| WITHOUT DUCT FIRING | | | | | | | | | | | |
| Combustion Turbines Only | | | | | | | | | | | |
| $SO_2$ | Annual | 0.0324 | 0.0322 | 0.0320 | 0.0294 | 0.0291 | 0.0290 | 0.0399 | 0.0438 | 0.0425 | 1 |
| | 24-Hour | 0.89 | 0.89 | 0.96 | 0.88 | 0.88 | 0.89 | 1.08 | 1.13 | 1.12 | 5 |
| | 3-Hour | 5.94 | 5.95 | 6.03 | 5.54 | 5.49 | 5.41 | 5.88 | 5.88 | 5.67 | 25 |
| $PM_{10}$ | Annual | 0.0656 | 0.0655 | 0.0646 | 0.065 | 0.065 | 0.065 | 0.086 | 0.094 | 0.094 | 1 |
| | 24-Hour | 1.80 | 1.80 | 1.93 | 1.94 | 1.97 | 1.99 | 2.32 | 2.44 | 2.47 | 5 |
| $NO_2$ | Annual | 0.087 | 0.086 | 0.086 | 0.079 | 0.078 | 0.077 | 0.107 | 0.117 | 0.114 | 1 |
| CO | 8-Hour | 12.1 | 12.3 | 14.1 | 12.7 | 12.5 | 12.6 | 68 | 68 | 64 | 500 |
| | 1-Hour | 70 | 71 | 72 | 65 | 64 | 64 | 343 | 342 | 330 | 2,000 |
| Combustion Turbines and Cooling Tower | | | | | | | | | | | |
| $PM_{10}$ | Annual | NM | NM | NM | NM | NM | NM | NM | NM | 0.162 | 1 |
| | 24-Hour | NM | NM | NM | NM | NM | NM | NM | NM | 3.38 | 5 |
| WITH POWER AUGMENTATION & DUCT FIRING (2) | | | | | | | | | | | |
| Combustion Turbines Only | | | | | | | | | | | |
| $SO_2$ | Annual | NA | NA | 0.0371 | NA | NA | NA | NA | NA | NA | 1 |
| | 24-Hour | NA | NA | 1.02 | NA | NA | NA | NA | NA | NA | 5 |
| | 3-Hour | NA | NA | 6.87 | NA | NA | NA | NA | NA | NA | 25 |
| $PM_{10}$ | Annual | NA | NA | 0.071 | NA | NA | NA | NA | NA | NA | 1 |
| | 24-Hour | NA | NA | 1.95 | NA | NA | NA | NA | NA | NA | 5 |
| $NO_2$ | Annual | NA | NA | 0.098 | NA | NA | NA | NA | NA | NA | 1 |
| CO | 8-Hour | NA | NA | 39.9 | NA | NA | NA | NA | NA | NA | 500 |
| | 1-Hour | NA | NA | 230 | NA | NA | NA | NA | NA | NA | 2,000 |
| Combustion Turbines and Cooling Tower | | | | | | | | | | | |
| $PM_{10}$ | Annual | NA | NA | 0.122 | NA | NA | NA | NA | NA | NA | 1 |
| | 24-Hour | NA | NA | 2.98 | NA | NA | NA | NA | NA | NA | 5 |

Note: NA= not applicable; NM= not modeled

(1) Concentrations are based on highest predicted concentrations using five years of meteorological for 1987 to 1991 of surface and upper air data from the National Weather Service stations at Tampa International Airport and Ruskin, respectively.

(2) Duct firing based on natural gas-fired duct burner with maximum heat input rate of = 250 mmBtu/hr (LHV).

Table F-1R. Maximum Pollutant Concentrations Predicted for One Combustion Turbine Firing Natural Gas In Combined-Cycle Operation (Revised 7/25/01 Stack Height, Diameter, Location)

| | Maximum Emission Rates (lb/hr) by Operating Load and Air Inlet Temperature | | | | | | | | | | Maximum Predicted Concentrations (ug/m$^3$) by Operating Load and Air Inlet Temperature (1) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Base Load | | | 75% Load | | | 60% Load | | | | Base Load | | | 75% Load | | | 60% Load | | |
| Pollutant | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F | Averaging Time | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F | 32°F | 59°F | 95°F |
| WITHOUT DUCT FIRING | | | | | | | | | | | | | | | | | | | |
| Generic (10 g/s) | 79.37 | 79.37 | 79.37 | 79.37 | 79.37 | 79.37 | 79.37 | 79.37 | 79.37 | Annual | 0.117 | 0.123 | 0.135 | 0.136 | 0.142 | 0.152 | 0.212 | 0.242 | 0.259 |
| | | | | | | | | | | 24-Hour | 3.204 | 3.391 | 4.023 | 4.053 | 4.301 | 4.679 | 5.734 | 6.267 | 6.844 |
| | | | | | | | | | | 8-Hour | 10.682 | 11.377 | 14.323 | 14.429 | 15.086 | 16.157 | 17.817 | 18.368 | 19.232 |
| | | | | | | | | | | 3-Hour | 21.400 | 22.791 | 25.416 | 25.605 | 26.772 | 28.417 | 31.330 | 32.569 | 34.629 |
| | | | | | | | | | | 1-Hour | 61.427 | 65.527 | 73.000 | 73.529 | 76.788 | 81.374 | 89.465 | 92.933 | 98.592 |
| $SO_2$ | 11.0 | 10.4 | 9.4 | 8.6 | 8.1 | 7.6 | 7.4 | 7.2 | 6.5 | Annual | 0.0162 | 0.0161 | 0.0160 | 0.0147 | 0.0146 | 0.0145 | 0.0199 | 0.0219 | 0.0212 |
| | | | | | | | | | | 24-Hour | 0.444 | 0.443 | 0.478 | 0.438 | 0.441 | 0.445 | 0.538 | 0.565 | 0.561 |
| | | | | | | | | | | 3-Hour | 2.968 | 2.977 | 3.017 | 2.768 | 2.744 | 2.705 | 2.940 | 2.938 | 2.837 |
| $PM_{10}$ | 22.3 | 21.1 | 19.0 | 19.0 | 18.2 | 16.9 | 16.0 | 15.4 | 14.3 | Annual | 0.0328 | 0.0328 | 0.0323 | 0.0326 | 0.0325 | 0.0324 | 0.0429 | 0.0471 | 0.0469 |
| | | | | | | | | | | 24-Hour | 0.90 | 0.90 | 0.96 | 0.97 | 0.99 | 1.00 | 1.16 | 1.22 | 1.24 |
| $NO_x$/ $NO_2$ | 29.5 | 27.7 | 25.2 | 22.9 | 21.7 | 20.2 | 19.9 | 19.1 | 17.4 | Annual | 0.043 | 0.043 | 0.043 | 0.039 | 0.039 | 0.039 | 0.053 | 0.058 | 0.057 |
| CO | 45.0 | 43.0 | 39.0 | 35.0 | 33.0 | 31.0 | 152.0 | 146.0 | 133.0 | 8-Hour | 6.06 | 6.16 | 7.04 | 6.36 | 6.27 | 6.31 | 34.12 | 33.79 | 32.23 |
| | | | | | | | | | | 1-Hour | 34.8 | 35.5 | 35.9 | 32.4 | 31.9 | 31.8 | 171.3 | 171.0 | 165.2 |
| WITH POWER AUGMENTATION & DUCT FIRING (2) | | | | | | | | | | | | | | | | | | | |
| Generic (10 g/s) | NA | NA | 79.37 | NA | NA | NA | NA | NA | NA | Annual | NA | NA | 0.123 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 24-Hour | NA | NA | 3.391 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 8-Hour | NA | NA | 11.377 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 3-Hour | NA | NA | 22.791 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 1-Hour | NA | NA | 65.527 | NA | NA | NA | NA | NA | NA |
| $SO_2$ | NA | NA | 12.0 | NA | NA | NA | NA | NA | NA | Annual | NA | NA | 0.0186 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 24-Hour | NA | NA | 0.5109 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 3-Hour | NA | NA | 3.433 | NA | NA | NA | NA | NA | NA |
| $PM_{10}$ | NA | NA | 22.8 | NA | NA | NA | NA | NA | NA | Annual | NA | NA | 0.0354 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 24-Hour | NA | NA | 0.9739 | NA | NA | NA | NA | NA | NA |
| $NO_x$/ $NO_2$ | NA | NA | 31.4 | NA | NA | NA | NA | NA | NA | Annual | NA | NA | 0.0488 | NA | NA | NA | NA | NA | NA |
| CO | NA | NA | 139.3 | NA | NA | NA | NA | NA | NA | 8-Hour | NA | NA | 19.97 | NA | NA | NA | NA | NA | NA |
| | | | | | | | | | | 1-Hour | NA | NA | 115.02 | NA | NA | NA | NA | NA | NA |

Note: NA= not applicable

(1) Concentrations are based on highest predicted concentrations using five years of meteorological for 1987 to 1991 of surface and upper air data from the National Weather Service stations at Tampa International Airport and Ruskin, respectively.

Pollutant concentrations were based on a modeled or generic concentration predicted using a modeled emission rate of 79.37 lb/hr (10 g/s). Specific pollutant concentrations were estimated by multiplying the modeled concentration (at 10 g/s) by the ratio of the specific pollutant emission rate to the modeled emission rate of 10 g/s.

(2) Duct firing based on natural gas-fired duct burner with maximum heat input rate of 250 mmBtu/hr (LHV).