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CC-5801-EG1-AF

July 20, 1993

Mr. Clair Fancy
Florida Department of Environmental Protection
2600 Blirstone Road
Tallahassee, Florida 32399

Subject: Impact Assessment for High Speed Diesels

Dear Mr. Fancy

R. W. Beck and Associates (Beck) has prepared a PSD application for the relocation of the gas turbine from the Key West power plant to Stock Island. During the preparation of the application, Beck modeled the Stock Island high speed diesels (HSD) which are used minimally for peak load demand. By including the effects of building downwash attributed to the recently-constructed building for the medium-speed diesels (MSD), it was determined that certain meteorological conditions could result in high ground-level concentrations from the HSDs.

In a letter dated May 6, 1993, Mr. Carl R. Jansen, Jr. of City Electric System (CES) notified you of this situation. The purpose of this letter is to clarify the situation, to demonstrate that the MSDs had minor impacts prior to the installation of the MSD building, and to present the alternatives available to CES to reduce the predicted ground-level concentrations to the prior levels. It should be noted that CES is currently operating the HSDs only between the hours of 9:00 a.m. and 5:00 p.m., which, as demonstrated below, is predicted to result in acceptable ambient air quality impacts.

The attached figure shows the location of the HSDs with respect to the MSD building. Dispersion modeling has been performed to predict the ground-level concentrations of sulfur dioxide from the facility without the MSD building. The receptor grid, meteorological data, and modeling methods are consistent with the analysis presented in the PSD application and the FDEP-approved modeling protocol used for the PSD application. The results are as follows:

Table 1		
Facility Impacts Without MSD Building Ground-Level Sulfur Dioxide Concentrations		
<u>Averaging Interval</u>	<u>Highest High</u>	<u>Highest Second-High</u>
3-hour	48	2
24-hour	8	0.3

We have considered three options for CES to operate the HSDs consistent with the impacts in Table 1. Those options are:

- (1) Operation of HSDs only between 9:00 a.m. and 5:00 p.m.;
- (2) Construction of a taller stack for the HSDs
- (3) Moving the HSDs out of the wake of the MSD building.

Note that our modeling evaluation of these options has not considered feasibility issues such as operating flexibility or site limitations. The dispersion modeling results are presented in tables 2 through 4.

Table 2		
High-Speed Diesels With MSD Building Ground-Level Sulfur Dioxide Concentrations Operation Restricted to 9:00 a.m. to 5:00 p.m.		
<u>Averaging Interval</u>	<u>Highest High</u>	<u>Highest Second-High</u>
3-hour	0	0
24-hour	0	0

Table 3		
High-Speed Diesels With MSD Building Ground-Level Sulfur Dioxide Concentrations New Stack - 50 Feet High		
<u>Averaging Interval</u>	<u>Highest High</u>	<u>Highest Second-High</u>
3-hour	24	17
24-hour	3	2

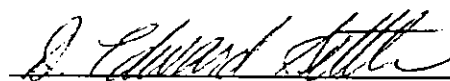
<u>Averaging Interval</u>	<u>Highest High</u>	<u>Highest Second-High</u>
3-hour	40	2
24-hour	7	0.3

As the results show, either of the three scenarios results in impacts approximately equivalent to those prior to the installation of the MSD building. Until such time that a feasible option is selected, CES will be operating the HSDs only during the hours from 9:00 a.m. to 5:00 p.m. If necessary, permit modification will be sought at that time.

If you have any questions or comments related to the impacts of the HSDs, please call me at 303/299-5280.

Sincerely,

R. W. BECK AND ASSOCIATES



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Senior Engineer/Scientist

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