FINAL DETERMINATION
File No. 1110103-001-AC (PSD-FL-323)
CPV – CANA POWER GENERATING FACILITY
COMBINED CYCLE POWER PROJECT

The Department distributed a Public Notice package on November 21, 2001 for the project to construct a natural gas and fuel oil-fired combined cycle unit to be known as the CPV – Cana Power Generating Facility located approximately 3 miles west of the City of Port St. Lucie in St.Lucie County. The project consists of a nominal 170 MW General Electric 7FA combustion turbine-electrical generator, an unfired heat recovery steam generator, a separate steam-electrical generator; a 175-foot stack; a mechanical draft cooling tower; a 975,000 gallon fuel oil storage tank, and other ancillary equipment. The Public Notice of Intent to Issue was published on December 3, in The Tribune, St. Lucie County, Florida.

Written comments were received during the 30-day public comment period from CPV Cana. Within the comments, CPV requested minor clarifications, corrections, and modifications of conditions of the draft permit and BACT determination. These minor changes are addressed and corrected in the final permit and the final BACT determination documents.

The most significant comments and requested changes are listed below. Each is followed by the Department's response.

Draft Air Permit PSD-FL-323

<u>Comment No 1 and 6. Specific Condition 9 - Section III</u>
On page 4 of the draft permit, paragraph 9, CPV Cana requests that the permit expiration date and construction deadline each be increased by one year, to June 30, 2005 and December 31, 2005, respectively. This will enable CPV Cana to complete its construction within the projected construction timeframe, with a time margin built in to accommodate potential short-term construction delays.

The Department agrees with the permittee and modified this condition as requested.

<u>Comment Nos. 16 y 17. Specific Condition 3.d, and Specific Condition 29- Section III</u>. *The last bullet point concerning "One exhaust stack……" should be deleted since the bypass stack option is not an appropiate mode for the CPV Cana facility, and the facility will not be operated in this mode.*

In a separate letter dated January 10, 2002, CPV recommended instead to fix startup times for reaching the "DLN" modes when design details are better known. This would occur after selection of a supplier for the heat recovery steam generator.

In response to the same permit requirement on a different but similar project, El Paso submitted a letter prepared by General Electric dated September 21, 2001. The Department had suggested startup time could be minimized by installation of a separate bypass stack and damper to facilitate startup of the steam cycle while operating the combustion turbine in low emission modes 5, 5Q, and 6Q. GE commented as follows:

"Operating the damper door as a modulating valve is not recommended. We are aware of a similar application at a project at KEPCO (Hungary?). Because of the turbulent flows, damage to the damper door and its seals allowed leakage to the atmosphere after the damper was closed resulting in a significant loss in performance".

The Department reviewed GE's letter and wrote an e-mail to their representative re-framing the issue and asking how startup emissions can be minimized for a combined cycle configuration and whether modulating valves (instead of dampers) can be designed for this purpose. General Electric's further input will be useful when reviewing future projects, but will not come in time to implement it into the present project.

The Department agrees with the permittee and modified these conditions as requested:

Specific Condition 3. d. Emission Unit 004: One Exhaust Stack: The stack shall be approximately 170 feet tall and 18.5 feet in diameter. ~~A separate bypass stack and damper may be installed to facilitate startup of the steam cycle while operating the combustion turbine in Low Emissions Modes 5, 5Q, and 6Q.~~

Specific Condition 29 - Excess Emissions Defined:

~~b. Best Operational Standard (Bypass Stack Option): The unit will reach Mode 5Q (i.e. five burners plus quaternary pegs in operation) within 15 minutes following gas turbine ignition and crossfire. Ammonia injection will be initiated within x, y, and z minutes for cold, warm, and hot startups respectively to minimize NO_x emissions. (Note: Times to be determined during public comment period).~~

b ~~c~~ . Best Operational Standard ~~(No Bypass)~~: The unit will reach Mode 5Q within x, y, and z minutes for cold, warm, and hot startups respectively (to minimize CO and NO_X emissions). Ammonia injection will be initiated within x, y, and z minutes for cold, warm, and hot startups respectively to minimize NO_X emissions. The following measures shall be employed following shutdowns to reduce subsequent excess startup emissions: (Note: Times and measures to be determined for modification of this permit and incorporation of the final conditions into the required Title V Operation permit ~~during public comment period~~)

Appendix BACT- BACT Determination (comments 33 through 37)

Comments 33, 34 and 35 were revised in the final BACT document.

Comments 36 and 37 are basically the same as the Draft Permit comments 16 and 17 above. Therefore, the paragraphs in the Appendix BACT (fourth and fifth bullet of page BD19) have been revised reflecting the same changes as in the final permit. This is, to submit the information after testing to be included in the Title V permit

CONCLUSION

The final action of the Department is to issue the permit with the changes noted above.