

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition to Determine) DOCKET NO. 930196-EQ
Need for Proposed Capital) ORDER NO. PSC-93-1715-FOF-EQ
Expansion Project of the Dade) ISSUED: November 30, 1993
County Resources Recovery)
Facility, an Existing Solid)
Waste Facility, by Metropolitan)
Dade County)
_____)

The following Commissioners participated in the disposition of this matter:

J. TERRY DEASON, Chairman
SUSAN F. CLARK
JULIA L. JOHNSON

ORDER GRANTING PETITION FOR DETERMINATION OF NEED
AND CLOSING DOCKET

BY THE COMMISSION:

On February 26, 1993, Metropolitan Dade County (Dade County) petitioned the Commission for a determination of need to expand its existing solid waste facility. In an effort to meet increasing challenges to solving its growing solid waste problem, Dade County originally petitioned to add two waste-fired boilers at its existing site. Scheduled to be placed into service in 1997, the boilers would have consumed nearly 468,000 tons of solid waste per year and increased the existing facility's net output by about 65 MW. The Commission established hearing dates for May 19-20, 1993.

Pursuant to a subsequent agreement with the Okeelanta cogeneration facility in West Palm Beach, Dade County will process and transport 234,000 tons per year of solid waste to Okeelanta where it will be burned as a supplemental fuel. Thus, the amount of waste used to fuel Dade County's planned facility expansion was cut in half, resulting in a modified petition to add only one 33 MW waste-fired boiler in 1997. Consequently, the Commission set new hearing dates for August 24-25, 1993.

Dade County's existing solid waste facility has a net output of approximately 60 MW. Although located in Florida Power and Light's (FPL) service territory, the facility provides 43 MW of firm capacity and energy to Florida Power Corporation (FPC) pursuant to an existing, Commission-approved power purchase

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agreement (Order No. 24374, Docket No. 910401-EQ). The new boiler will be capable of increasing the facility's net export capability by 33 MW, to 93 MW. Dade County will install a dump condenser to limit the electrical output of the overall facility to 80 MW, thereby reducing the net output of the new boiler from 33 MW to 20 MW. The 80 megawatt limit is a requirement imposed by the Federal Energy Regulatory Commission (FERC) on small power facilities in order that they maintain their qualifying facility (QF) status.

Dade County's witnesses were Tanhum Goldshmid, from Dade County's Solid Waste Management Department; Kennard Kosky, an expert on the permitting of solid waste-fired facilities; and Charles Strong of Montenay Power Corporation. Staff's witness was Robert Dolan, Cogeneration Projects Manager at FPC. No party intervened in this proceeding, although Bonnie Barnes-Kelley of the Florida Sierra Club, and Debra Swim of the Legal Environmental Assistance Foundation offered sworn testimony as members of the public.

Dade County's petition is a Petition for Determination of Need pursuant to Section 403.519, Florida Statutes. Section 403.519, Florida Statutes requires that this Commission consider the following criteria when determining the need for an electrical power plant:

- o the need for electric system reliability and integrity;
- o the need for adequate electricity at a reasonable cost;
- o whether the proposed plant is the most cost-effective alternative available; and
- o conservation measures taken by or reasonably available to mitigate the need for the proposed plant.

In determining the need for a solid waste facility, the Commission also considers Section 377.709, Florida Statutes, which provides that: "...the combustion of refuse by solid waste facilities to supplement the electricity supply not only represents an effective conservation effort but also represents an environmentally preferred alternative to conventional solid waste disposal in this state."

Dade County submitted twenty Proposed Findings of Fact as part of its post-hearing filings. Our rulings on these Proposed Findings of Fact are included in this Order.

I. NEED FOR ENERGY

Energy generated by Dade County's expanded facility will meet two needs: displace fossil fuels and reduce the amount of garbage through combustion of solid waste. The new boiler is expected to provide an additional 140 gigawatt-hours (GWh) per year assuming an 80% capacity factor. Since the facility is located in Florida Power and Light Company's service territory, Dade County will likely sell the energy to FPL. Since there is no contract to sell firm capacity, the Dade County facility will likely sell energy on an as-available basis to FPL; this energy will displace fossil fuels in Florida. We find that the state has a need for the additional energy to be generated from Dade County's expanded solid waste facility.

II. ASSOCIATED FACILITIES

We find that the following associated facilities are required in conjunction with Dade County's expanded solid waste facility: new fuel supply facilities, a dump condenser to regulate the steam supply to the generator, and additional electrical equipment to connect the new generator to FPL's system.

The new fuel delivery conveyor system will deliver fuel from the solid waste processing area to a fuel storage pit located near the new boiler. An overhead crane system will scoop fuel out of the pit and load it into a charging hopper located at the mouth of the new boiler. The charging hopper, a kind of storage area which holds the fuel being fed into the boiler, ensures a continuous, regulated supply of fuel with no interruption. If the fuel supply were to be interrupted, the charging hopper would hold enough fuel to supply the boiler for about two hours.

The dump condenser will take excess steam diverted from the turbine, condense it, and deliver it to the cooling system to be dissipated into the environment. The dump condenser will allow the boiler to continue burning solid waste during the periods when electrical output exceeds 80 MW or when FPL's system might not be able to receive power from the facility. The Federal Energy Regulatory Commission (FERC) has imposed the 80 MW export

limitation on facilities that wish to maintain their qualifying facility (QF) status.

The new electrical facilities will include a new switchyard module, consisting of a transformer and a conductor, which will connect the new generator to the existing interconnection with FPL's system.

III. SUFFICIENCY OF INFORMATION

We find that Dade County provided sufficient information on the site, design, and engineering characteristics of the expanded solid waste facility to enable the Commission to evaluate its proposal. The testimony and exhibits presented by Dade County were adequate to make a fair evaluation of the petition.

IV. CONTRIBUTION TO SYSTEM RELIABILITY AND INTEGRITY

We find that Dade County's expanded solid waste facility will not contribute to the reliability and integrity of the state's electric system. Dade County has not committed to sell firm capacity pursuant to a Commission-approved contract. Dade County has only stated that it might sell as-available energy from its expanded facility. Because there are no plans to sell firm capacity, there is no way to analyze any effect on the state's reliability and integrity due to Dade County's energy sales.

From its existing facility, Dade County sells 43 MW of firm capacity and energy to FPC pursuant to an existing, Commission-approved cogeneration contract. Mr. Robert Dolan, Cogeneration contracts manager for Florida Power Corporation, testified on the past operation of the Dade County facility and its negative impact on the stability of FPC's electric system. Mr. Dolan stated that Dade County's output fluctuates numerous times within one hour, at times swinging from 50 megawatts to zero and back.

Although the facility is located in Dade County, in FPL's service territory, the fluctuations are felt in FPC's control area. In response to these fluctuations, FPC must either start and stop, or ramp up and down, its own generating units in order to supply electricity to stabilize its system. Mr. Dolan knew of at least two times during 1992 when FPC started up its peaking units to stabilize its system solely due to the fluctuations. Exhibit RDD-3 of Mr. Dolan's testimony compares the electrical output of the Dade County facility, including output fluctuations, and the Pasco

County solid waste-fired facility for an eight-hour period [EXH 6]. This exhibit shows a typical day's output of Dade County's facility as seen on FPC's system. Mr. Kosky, Dade County's witness, confirmed that this exhibit was indicative of the existing facility's electrical output.

The Dade County facility's output fluctuations are primarily caused by problems with the fuel supply system. This system consists of a series of conveyor belts, which feed the refuse-derived fuel directly into the boiler. This system poses a problem, since currently there is no fuel storage container (such as a hopper) at the mouth of the boilers to assure a constant flow of fuel into the boiler. The conveyors are prone to numerous breakdowns, each of which starve the boilers of their fuel supply for a period of time and cause the electrical output to decrease. Furthermore, there is a tendency for the refuse-derived fuel to be unevenly distributed on the conveyors. This results in an inconsistent fuel supply to the boiler, thus causing small fluctuations in the facility's electrical output.

Mr. Dolan recommended in August 1992 that Dade County install fuel flow regulating bins on the existing boilers to ensure a more stable fuel supply. Acting on Mr. Dolan's recommendation, Dade County plans to fit each of its existing boilers with these fuel bins. The conveyor system will deliver fuel directly into the top of the bins, which themselves will supply fuel into the boiler. The fuel bins will hold enough fuel to feed the boiler for about 10 minutes in the event of a disruption in the fuel supply.

In addition, Dade County plans to upgrade part of its conveyor system by installing larger drive systems and replacing some old conveyors with new equipment with increased fuel-carrying capacity. Mr. Strong testified that the upgraded conveyor system should be less prone to operational problems.

Planned improvements in the existing facility's fuel supply, combined with the new boiler and associated facilities, should improve the quality of the electrical output.

V. COST EFFECTIVENESS

We find that Dade County's expanded solid waste facility contribute to the provision of adequate electricity to the state at a reasonable cost. Since there is no firm capacity contract, Dade County will likely sell its additional energy to FPL on an as-

available basis. Such sales would be made to FPL pursuant to Commission-approved as-available energy tariff rates. Because these tariffs provide that power purchases will be made at a price no higher than the utility's avoided cost, Dade County's energy sales will, by definition, be cost-effective. Furthermore, these energy sales will displace the use of fossil fuels. For these reasons, we believe that Dade County's expanded solid waste facility will contribute to the provision of adequate electricity at reasonable cost.

We find that Dade County's expanded solid waste facility is the most cost-effective alternative available to the state's electric customers. The need for Dade County's proposed facility expansion is predicated on the requirement to conserve fossil fuels enunciated in Section 366.81, Florida Statutes and the express declaration by the legislature that burning solid waste to generate electricity is both an effective conservation measure and an environmentally preferred method of disposing of solid waste. We believe that the proposed expanded facility will provide cost-effective, as-available electricity, as evidenced by Dade County's commitment to abide by the Commission-approved as-available energy tariff [T 43, 85, 93]. In two prior cases, In re: Petition of Pasco County for determination of need for a solid waste-fired cogeneration power plant (Order No. 19952, Docket No. 890598-EQ) and In re: Petition for determination of need for a solid waste-fired cogeneration power plant by Lee County (Order Nos. 23963 and 24821, Docket No. 900454-EQ), this Commission granted the determinations of need because both counties committed to sell electricity from their facilities in accordance with applicable Commission rules and Florida Statutes. The Commission found that electricity produced by these solid waste facilities would be priced on a cost-effective basis and supplied at reasonable cost. The same reasoning is appropriate in this instance.

VI. CONSERVATION MEASURES AND ALTERNATIVE TECHNOLOGIES CONSIDERED

We find that the issue of whether or not Dade County taken all conservation measures reasonably available to it that might mitigate the need for the expanded solid waste facility is irrelevant in this case. Even though Dade County's facility will displace fossil fuels, thus conserving natural resources, the energy conservation issue does not apply per se in the case of a municipal solid waste facility such as Dade County. There is no firm capacity contract and, therefore, no plant to be avoided.

While Section 403.519, Florida Statutes, directs the Commission to consider all conservation measures which might mitigate the need for the proposed plant, the statute refers to conservation measures taken by an electric utility which would mitigate that utility's need for a power plant. Dade County's petition for a determination of need is not a need for a power plant; rather, the need is to dispose of increasing amounts of solid waste in the county. Consequently, the Commission must also consider Section 377.709, Florida Statutes, which provides that: "the combustion of refuse by solid waste facilities to supplement the electricity supply not only represents an effective conservation effort but also represents an environmentally preferred alternative to conventional solid waste disposal in this state."

Thus, Dade County's proposed facility expansion is, in and of itself, a cost-effective conservation measure.

We find that Dade County has adequately explored the construction of alternative technologies in lieu of the proposed expanded solid waste facility. Dade County evaluated both of the commercially available types of solid waste-fired generation technologies: refuse derived fuel (RDF) and mass burn. RDF is produced when oversized garbage and trash material is shredded and recombined with smaller-sized waste material prior to being burned in the boiler. The mass burn technology allows the facility to burn all sizes of garbage and trash material.

Dade County's existing solid waste facility uses RDF technology, but its new boiler will employ the mass burn technology. All other solid waste facilities in Florida use the mass burn technology, so Dade County and Montenay, the plant operator, are familiar with both technologies. Given that Dade County considered both types of facilities and will, if authorized by the Commission, operate boilers using both technologies, staff recommends that Dade County has adequately explored the construction of alternative technologies.

VII. ANTICIPATED COSTS OF ENVIRONMENTAL COMPLIANCE

We find that Dade County adequately considered all reasonably anticipated costs of environmental compliance associated with the expanded solid waste facility. Mr. Kosky testified that one of the criteria for controlling emissions from the solid waste facility is to ensure that any toxins or volatile materials are burned within

the boiler itself. He stated that Dade County's new boiler will meet all of EPA's latest criteria for the combustion of and minimizing the emissions of dioxins. The new boiler will be fitted with a dry scrubber bag house, which absorbs toxic metals and pollutants such as sulfur dioxide, nitrous oxide, and hydrogen chloride. The existing four boilers will be retrofitted with identical dry scrubber pollution control systems.

Dade County also considered the potential for more stringent air pollution control regulations which are currently being considered by the Florida Department of Environmental Protection. Mr. Kosky stated his belief that these anticipated emission regulations can be met by the pollution control equipment already being planned for the facility.

The pollution control equipment additions being proposed by Dade County as part of its facility expansion can reasonably be expected to meet all current environmental regulations as well as more stringent DEP requirements. Furthermore, if environmental compliance costs increase in the future, Dade County's residents will bear the cost because there is no firm capacity from the expanded facility. Therefore, we believe that Dade County has adequately considered all reasonably anticipated costs of environmental compliance associated with its expanded solid waste facility.

VIII. ADVERSE CONSEQUENCES

We find that there are no adverse consequences to electric utility customers in the state if the expanded solid waste facility is not completed in the time frame proposed by Dade County. The only electric utility system materially affected by Dade County's expanded solid waste facility will be Florida Power and Light Company. Because there is no firm capacity commitment, the only consequence to FPL is that its customers will not receive any as-available energy from Dade County if the facility expansion is not completed. A utility's reserve margin is calculated using only firm capacity sources.

As noted previously, we believe that there is a need for the incremental amount of as-available energy from Dade County's new boiler. We agree with Dade County's belief that there is an incentive to sell as-available energy during peak periods because utilities pay the highest rates for energy during those time periods.

If the proposed facility is not completed, the only effect on electric customers in the state, particularly those in FPL's service territory, is that they will not receive any as-available energy from Dade County's expanded solid waste facility. We do not believe this to be an adverse consequence.

We find that the question of any adverse consequences to Dade County and its citizens if the expanded solid waste facility is not completed in the time frame proposed is irrelevant and, therefore, has no bearing in this case.

The evidence suggests that if the proposed facility expansion is not completed on time, Dade County citizens will likely have to pay a higher bill for waste disposal in future years because the county will use up all available landfill space significantly sooner. However, there will be no adverse consequences to Dade County's electricity needs if the proposed expanded solid waste facility is not approved. The question of the adequacy of Dade's solid waste disposal plans is not one within the Commission's area of responsibility.

IX. NEED FOR EXPANDED FACILITY

Based on the resolution of the previous factual and legal issues, we find that Dade County's petition for determination of need for the expanded solid waste facility should be granted. Although the expanded facility will not contribute to the reliability and integrity of the state's electric system, its energy is cost-effective and will displace the use of fossil fuels.

This order includes a discussion of the past and current operating performance of the facility. Dade County has stated its plans to correct the electrical output fluctuations. Dade County plans to renovate the fuel transport conveyor system and install fuel feed bins on the four existing boilers. We believe that Dade County's planned improvements should correct the existing facility's output fluctuations, which should mitigate its negative contribution to the reliability and integrity of the state's electric system. However, without a contract to sell firm capacity, there is no way to measure the expanded facility's positive contribution to reliability and integrity.

The need for Dade County's plant is driven by the need for solid waste management. Dade County has studied many options for dealing with its future solid waste management requirements. Dade

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County originally petitioned to add two boilers at the existing resources recovery facility. However, part of Dade County's waste will be diverted to the Okeelanta cogeneration facility, thereby eliminating the current need for one boiler. Additionally, Dade County's facility will serve a dual purpose by generating cost-effective as-available electricity and reducing the amount of solid waste disposed of in landfills.

In consideration of the foregoing, it is

ORDERED by the Florida Public Service Commission that the findings set forth in the body of this Order are hereby approved. It is further

ORDERED that the Amended Petition for Determination of Need for Proposed Capital Expansion Project of the Dade County Resources Recovery Facility by Metropolitan Dade County is GRANTED. It is further

ORDERED that this docket shall be closed. It is further

ORDERED that the Proposed Findings of Fact submitted by Metropolitan Dade County are accepted or rejected as set forth in this Order.

By ORDER of the Florida Public Service Commission this 30th day of November, 1993.



STEVE TRIBBLE, Director
Division of Records and Reporting

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.59(4), Florida Statutes, to notify parties of any administrative hearing or judicial review of Commission orders that is available under Sections 120.57 or 120.68, Florida Statutes, as well as the procedures and time limits that apply. This notice should not be construed to mean all requests for an administrative hearing or judicial review will be granted or result in the relief sought.

Any party adversely affected by the Commission's final action in this matter may request: 1) reconsideration of the decision by filing a motion for reconsideration with the Director, Division of Records and Reporting within fifteen (15) days of the issuance of this order in the form prescribed by Rule 25-22.060, Florida Administrative Code; or 2) judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or the First District Court of Appeal in the case of a water or sewer utility by filing a notice of appeal with the Director, Division of Records and Reporting and filing a copy of the notice of appeal and the filing fee with the appropriate court. This filing must be completed within thirty (30) days after the issuance of this order, pursuant to Rule 9.110, Florida Rules of Civil Procedure. The notice of appeal must be in the form specified in Rule 9.900 (a), Florida Rules of Appellate Procedure.

RULINGS ON METROPOLITAN DADE COUNTY'S PROPOSED FINDINGS OF FACT

In accord with Section 120.57, Florida Statutes, we make the following rulings on Dade County's Proposed Findings of Fact:

1. The new boiler will be separate from the existing four boilers and will be capable of producing approximately 300,000 pounds of steam per hour at 750° F. and 625 pounds per square inch of pressure. The steam from the new boiler will power a new steam electric generating turbine with an electrical generating capacity of approximately 33 MW. [T 148, ll. 20-25]

RULING: Accepted and incorporated.

2. Any real physical effects of the Facility's output fluctuations would only affect Florida Power and Light's system. [T 124, ll. 12-22]

RULING: Rejected as vague and irrelevant. The statement does not identify the "physical effects" that would only affect FPL's system. The statement is also irrelevant to the ultimate decision in the case. The impact of the facility's output fluctuations on FPL was never at issue in the case. In addition, it was established that the output fluctuations do have an effect on Florida Power Corporation and its ability to meet its Area Control Error criteria.

3. Florida Power and Light Company's interruption and curtailment reports, filed with the Commission pursuant to Commission Rule 25-6.018, Florida Administrative Code, indicate that FPL has reported no service interruption or outage events due to the Facility's output fluctuations since at least before 1989. [T 126, ll. 6-22]

RULING: Rejected as irrelevant. See ruling on finding of fact two.

4. FPL has not complained to Dade County about the Facility's output fluctuations, or about any adverse consequences caused by these fluctuations, since at least as long ago as 1990, when Dr. Tanhum Goldshmid assumed his present position with Dade County. [T 124, ll. 12-22]

RULING: Rejected as irrelevant, see finding of fact two.

5. There is not evidence of record to suggest that FPL ever complained about the Facility's output fluctuations. [T 1-165, all lines; all exhibits]

RULING: Rejected as irrelevant, see finding of fact two.

6. Even if the Dade County Resources Recovery Facility were to trip off line completely, there probably would not be a measurable effect on either the state's electricity frequency or on FPC's system frequency. [T 124, l. 23 to T 125, l. 2]

RULING: Rejected as speculative. While Mr. Dolan confirmed this statement on cross-examination, it is not phrased in the form of an affirmative, definite fact.

7. Dade County and Montenay Power Corp. have identified a vendor for the planned fuel storage bins. [T 130, ll. 1-13; EXH 10]

RULING: Accepted and incorporate.

8. Montenay Power Corp. has executed a letter of intent and a purchase order for the fuel bins, subject to the condition that the vendor, Wolf and Associates, is authorized to fabricate and deliver only one bin, the so-called "test bin," at this time. [LFE 10]

RULING: Accepted and incorporated.

9. The Facility's output fluctuations have not caused any under frequency outage events on Florida Power Corporation's system since the inception of the contract. [T 125, ll. 4-10]

RULING: Accepted and incorporated.

10. The power sales agreement between Florida Power Corporation and Dade County [Exhibit KFK-4 within Hearing EXH 4] does not contain the so-called ACE, or Area Control Error, criteria

identified and discussed in Mr. Dolan's testimony. [T 128, l. 22 to T 129, l. 10]

RULING: Rejected as irrelevant. The Area Control Error (ACE) is a criteria which all utilities are expected to adhere to. Whether the criteria is not explicitly codified in the contract between FPC and Dade County is irrelevant to the fact that the criteria exists.

11. A fast track for the installation of the planned fuel bins would be six months to one year. [T 133, ll. 11-14]

RULING: Rejected as speculative and out of context. The statement was taken from redirect questioning of Mr. Dolan by Mr. Elias. A hypothetical series of questions were put to Mr. Dolan assuming Florida Power Corporation operated the Dade County Facility. In the transcript citation provided for this statement, no direct reference is made to the "planned" fuel bins Dade County is planning to construct.

12. According to the purchase order issued by Montenay Power Corp. to Wolf and Associates, which provides for on-site delivery of all twenty fuel bins by April 1, 1994, it is possible that the fuel bins will be installed on all four existing boilers as early as July 1994. [LFE 10; T 158, ll. 13-21; T 159, ll. 2-5]

RULING: Accepted and incorporated.

13. The fuel bins project is funded, meaning that no further financial approvals are required to proceed with the fuel bins project. [T 159, ll. 12-18]

RULING: Accepted and incorporated.

14. The expanded Facility's new power block will include a "dump condenser" that will be designed to automatically regulate the Facility's exported power to 80 MW, so long as sufficient steam is available to generate at least 80 MW of electricity in addition to the plant load. [T 151, ll. 9-13]

RULING: Accepted and incorporated.

15. In the event of a boiler outage or a serious fuel supply interruption, the dump condensers will be designed to automatically direct steam back to the generating turbines to produce additional electricity up to the maximum export amount of 80 MW. [T 151, ll. 13-18]

RULING: Accepted and incorporated.

16. The expanded Facility's new power block will use mass-burn firing technology similar to the technology used at other solid waste facilities in Florida. [T 149, ll. 1-4 & 22-23; T 150, ll. 19-21; T 119, l. 17 to T 120, l.6]

RULING: Accepted and incorporated.

17. The expanded Facility's new power block will employ a charging hopper fuel supply system typical of other waste-to-energy facilities in Florida. [T 149, ll. 1-15]

RULING: Accepted and incorporated.

18. The new power block can reasonably be expected to perform as reliably as other waste-to-energy facilities in Florida. [T 120, l. 17 to T 121, l. 5; T 150, ll. 17-21]

RULING: Accepted and incorporated.

19. Any power or energy sales made from the expanded Facility will be made pursuant to Commission-approved as-available energy tariffs, Commission-approved standard offer contract tariffs, or Commission-approved negotiated contracts. Accordingly, any power or energy sales from the expanded Facility will be made at rates no greater than a purchasing utility's avoided costs. [T 85, ll. 1-10]

RULING: Accepted and incorporated.

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20. Dade County has adequately considered all reasonably anticipated costs of environmental compliance associated with its proposed solid waste facility. [T 102, l. 12 to T 103, l. 13]

RULING: Rejected as a conclusion of law. This is an issue explicitly decided by the Commission.