

BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In re: Petition for
determination of need for power
plant in Duval County by JEA.

DOCKET NO. 001703-EM
ORDER NO. PSC-01-0500-FOF-EM
ISSUED: February 28, 2001

The following Commissioners participated in the disposition of
this matter:

E. LEON JACOBS, JR., Chairman
LILA A. JABER
BRAULIO L. BAEZ

APPEARANCES:

RICHARD D. MELSON, ESQUIRE, 123 South Calhoun Street,
Tallahassee, Florida 32314
On behalf of JEA.

DEBORAH D. HART, ESQUIRE, Florida Public Service
Commission, 2540 Shumard Oak Boulevard, Tallahassee,
Florida 32399-0850
On behalf of the Commission Staff.

ORDER GRANTING PETITION FOR DETERMINATION OF NEED
FOR POWER PLANT IN DUVAL COUNTY BY JEA

BY THE COMMISSION:

I. CASE BACKGROUND

Pursuant to Section 403.519, Florida Statutes, and Rules 25-
22.080 and 25-22.081, Florida Administrative Code, on November 15,
2000, JEA petitioned for a determination of need for an electrical
power plant to be located at the Brandy Branch Generating Station
in Duval County, Florida.

At this time, JEA is constructing three combustion turbine
units at the Brandy Branch site located in western Duval County, FL
near the town of Baldwin. These three combustion turbine (CT)
units, each with a capacity of approximately 173 megawatts (MW),

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will use natural gas as the primary fuel, with No. 2 oil for backup. JEA expects to place these combustion turbines into commercial service by the end of 2001.

JEA proposes to convert two of the three Brandy Branch CT units to combined cycle operation through the addition of two heat recovery steam generators and a 197 MW steam turbine unit. When completed, the Brandy Branch site will contain a 543 MW combined cycle unit and a stand-alone 173 MW CT unit. JEA expects to complete the unit conversion and place it into service in June, 2004.

These proceedings are held to determine whether JEA's proposed Brandy Branch conversion meets the need for electric system reliability and integrity, the need for adequate electricity at a reasonable cost, whether the proposed plant is the most cost-effective alternative available, whether there are any conservation measures which can mitigate the need for the proposed power plant, and any other matters within the Commission's jurisdiction which it deems relevant, according to the requirements of Section 403.519, Florida Statutes.

We held a hearing in this matter on February 8, 2001. After consideration of the evidence, the arguments of the parties, and our staff's recommendation, we voted to grant JEA's petition for a determination of need. This Order constitutes our final agency action and report as required by Section 403.507(a)(2), Florida Statutes, and as provided for in Section 403.519, Florida Statutes.

II. NEED FOR ADEQUATE ELECTRICITY AT REASONABLE COST

We find that JEA's proposed unit will contribute to the provision of adequate electricity at reasonable cost, as stated in Section 403.519, Florida Statutes.

As discussed in the testimony of witness Bond, JEA uses a 15% reserve margin as its planning criterion. According to JEA's need study (Exhibit 1), if no capacity is added in 2004, JEA's reserve margin for that year is forecasted to be 14% summer and 13% winter, reflecting capacity deficiencies of approximately 40 MW and 58 MW, respectively. By adding the capacity from the Brandy Branch conversion, JEA will be able to maintain its 15% reserve margin

criterion in 2004. Thus, the Brandy Branch conversion will provide adequate electricity to JEA.

JEA evaluated numerous coal, combined cycle, and combustion turbine unit options. Coal was excluded as a viable alternative to meet JEA's 2004 need because of long lead times for permitting and construction. As discussed in Section IV, below, the combustion turbine option was excluded because it was not cost-effective.

As shown in JEA's need study (Exhibit 1), the only viable options to meet JEA's identified 2004 need at a reasonable cost are the Brandy Branch conversion project or a new, greenfield combined cycle unit. The Brandy Branch conversion adds 197 MW of capacity generated by the waste heat of the combustion turbines currently being built at the site. The Brandy Branch conversion assures reasonable cost to JEA.

III. NEED FOR ELECTRIC SYSTEM RELIABILITY AND INTEGRITY

We find that JEA's proposed unit will contribute to the provision of electric system reliability and integrity, as stated in Section 403.519, Florida Statutes.

As detailed in the testimony of witness Griffin, JEA performs its load forecasting process using trend analysis. Most larger utilities use more complex methods such as econometric and end-use analysis. However, the error in JEA's energy forecasts for the last two years has been extremely low (less than one percent). We believe JEA's load forecast is reasonable.

Based on JEA's load forecast and its 15% reserve margin criterion, JEA's need study (Exhibit 1) shows a need for at least 40 MW of additional capacity in the year 2004. JEA's need study (Exhibit 1) shows that additional capacity will be needed by 2006 even after the Brandy Branch conversion is placed into service. The Brandy Branch conversion addresses JEA's capacity need.

The Brandy Branch site is located adjacent to an existing 230 kV transmission corridor. No new transmission facilities or system upgrades are required to integrate the Brandy Branch conversion into JEA's electric system. Further, because Brandy Branch is an

existing site, the conversion minimizes adverse environmental impacts compared to new construction at a greenfield site.

JEA's need study (Exhibit 1) shows that, even after completion of the Brandy Branch conversion, solid fuels such as coal and petcoke will continue to fuel nearly 50% of JEA's system capacity. The addition of the three gas-fired combustion turbines and the conversion of two of these units to combined cycle operation will increase JEA's gas-fired capacity by 543 MW. After the conversion, natural gas is expected to comprise approximately 34% of JEA's system capacity. Thus, the Brandy Branch conversion provides fuel diversity to JEA's system, contributing to system reliability and integrity.

IV. MOST COST-EFFECTIVE ALTERNATIVE AVAILABLE

We find that JEA's proposed conversion of the Brandy Branch combustion turbines to combined cycle is the most cost effective alternative available, as stated in Section 403.519, Florida Statutes.

As discussed in the testimony of witnesses Guyton-Baker and Rollins, JEA evaluated numerous supply-side options using the EGEAS model. EGEAS ranked, in ascending cost order, the 200 least-cost expansion plans which meet JEA's reliability criteria. The Brandy Branch conversion was the first unit addition in each of the first 144 alternative expansion plans produced by EGEAS, and was first in 188 of the 200 total runs. The other 12 alternative EGEAS expansion plans, including plan #145, contained a greenfield combined cycle unit as the first unit.

As shown in JEA's need study (Exhibit 1) and staff's composite exhibit (Exhibit 3), the Brandy Branch conversion provides JEA with cumulative present worth revenue requirements savings of approximately \$17 million over the next best alternative, the greenfield combined cycle unit from EGEAS expansion plan #145.

Staff's composite Exhibit 3 shows that the Brandy Branch conversion provides savings of approximately \$22 million over the most costly expansion plan produced by EGEAS. Since none of the 200 least-cost expansion plans contained a combustion turbine unit

as a viable alternative, the combustion turbine is at least \$22 million more costly than the Brandy Branch conversion.

JEA analyzed the cost-effectiveness of the Brandy Branch conversion under various sensitivities to fuel prices and load forecasts. The sensitivity analysis, shown in JEA's need study (Exhibit 1), confirms JEA's choice of the Brandy Branch conversion as the most cost-effective alternative available.

Because it is not an investor-owned utility, JEA is not subject to the Commission's "bidding rule" contained in Rule 25-22.082, Florida Administrative Code. Therefore, JEA did not issue a request for proposals for capacity alternatives to the Brandy Branch conversion. However, given that JEA's proposal is more cost-effective than even a combustion turbine unit, we are satisfied that JEA chose the least-cost alternative.

We find that the fuel price forecasts used by JEA in its cost-effectiveness evaluation are reasonable. However, as shown in Exhibit 3, a more recent forecast shows that natural gas prices for the year 2004 are approximately 86% higher than the prices used in JEA's base-case analysis. Since the Brandy Branch conversion relies on waste heat to generate electricity, this option is likely even more cost-effective than was stated by JEA in its need study (Exhibit 1).

We find that the financial assumptions used by JEA in its cost-effectiveness evaluation are reasonable. While JEA did not seek bids pursuant to a request for proposals because it was exempt from doing so, JEA's ability to use tax-free municipal financing further contributes to the cost-effectiveness of the Brandy Branch conversion over alternatives which might be submitted by other parties.

V. CONSERVATION MEASURES

We find that there are no conservation or demand side management alternatives reasonably available which would mitigate JEA's need to convert two Brandy Branch combustion turbines to combined cycle.

In Docket No. 990720-EG, we set conservation goals of zero for JEA after having found that there were no cost-effective conservation or demand-side management measures available. Nonetheless, as shown in JEA's need study (Exhibit 1), JEA continues to offer several types of energy audits, customer education programs, and a street lighting efficiency program.

According to the testimony of witness Boswell, the cost-effectiveness analysis of conservation and DSM programs performed by JEA for this petition is identical to the analysis performed by JEA in its DSM Goals docket. The analysis was conservative in that the avoided generating unit was assumed to be the entire 543 MW Brandy Branch combined cycle unit. According to the need study (Exhibit 1), this avoided unit is much more costly than just the heat recovery unit and steam turbine generator conversion requested by JEA in this docket. As discussed in the testimony of witness Rollins, no conservation or demand-side measures were cost-effective even when evaluated against the more costly combined cycle unit. Thus, we find that there are no cost-effective measures available to JEA to avoid or delay the need for the Brandy Branch conversion.

VI. CONCLUSION

Upon consideration of the record evidence in light of the criteria set forth in Section 403.519, Florida Statutes, we hereby grant JEA's Petition To Determine Need for Electrical Power Plant.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that JEA's Petition To Determine Need For Power Plant is granted. It is further

ORDERED that this docket shall be closed.

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By ORDER of the Florida Public Service Commission this 28th
day of February, 2001.

BLANCA S. BAYÓ, Director
Division of Records and Reporting

By: Kay Flynn
Kay Flynn, Chief
Bureau of Records

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NOTICE OF FURTHER PROCEEDINGS OR JUDICIAL REVIEW

The Florida Public Service Commission is required by Section 120.569(1), 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, 2540 Shumard Oak Boulevard, Tallahassee, Florida 32399-0850, 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 and/or wastewater 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 Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900(a), Florida Rules of Appellate Procedure.