BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

In Re: Petition for Determination of Need for a Proposed Electrical Power Plant and Related Facilities in Polk County by Tampa Electric Company.	DOCKET NO. 910883-EI ORDER NO. PSC-92-0002-FOF-EI ISSUED: 03/02/92

The following Commissioners participated in the disposition of this matter:

SUSAN F. CLARK
BETTY EASLEY

ORDER DETERMINING THE NEED
FOR A PROPOSED ELECTRICAL POWER PLANT

BY THE COMMISSION:

Pursuant to Notice, a formal hearing was held in this docket on December 10-11, 1991 in Tallahassee, Florida. Having considered the record in this proceeding, the Commission now enters its Final Order.

BACKGROUND

Tampa Electric Company (TECO or Tampa Electric) filed a Petition for Determination of Need with the Commission on September 5, 1991. In that petition TECO requested that the Commission approve the construction of a 220 MW Integrated Coal Gasification Combined Cycle (IGCC) unit and related facilities at a site located in Polk County. The proposed IGCC project will consist of a 150 MW advanced combustion turbine (CT) unit to be placed in service in July, 1995, and a 70 MW heat recovery steam generator (HRSG) and coal gasifier to be placed in service in July, 1996. Transmission facilities associated with the construction of the plant include two circuits looping the Pebbledale-Hardee Power Station circuit and two circuits looping the Pebbledale-Mines circuit into a transmission switching station at Polk Unit One. Fuel transportation facilities associated with the construction of the plant include a natural gas lateral to the adjacent FGT pipeline for economy gas purchases, and an oil pipeline lateral to the GATX oil pipeline under construction next to the plant site.

The coal gasifier will employ a new technology that efficiently cleans coal gas at high temperatures. This technology will be a demonstration project for the U. S. Department of Energy

(DOE). DOE has signed a cooperative agreement with TECO to provide a $120 million grant to offset some of the costs associated with the construction of the plant and the demonstration of the new technology.

In Docket No. 910004-EU, TECO's 220 MW phased combined cycle unit was designated as its avoided unit for pricing cogeneration. Upon learning of the availability of the $120 million grant from DOE to build the coal gasification plant, TECO estimated the cost of the IGCC unit and compared the project's impact on TECO's expansion plan with eight other expansion plans. When TECO determined that the IGCC unit, with the benefit of $120 million of DOE funding, cost less than the "avoided unit" proposed in Docket No. 910004-EU, TECO initiated this proceeding to determine the need for the IGCC unit.

Destec Energy (Destec), Ark Energy (Ark), Florida Industrial Cogeneration Association (FICA), and Floridians for Responsible Utility Growth (FRG) intervened in this proceeding. Prior to the pre-hearing conference, held on November 20, 1991, Destec and Ark withdrew from this proceeding. Prior to the hearing, held on December 10-11, 1991, FICA also withdrew from the case.

Post-hearing briefs were filed by Tampa Electric Company and Floridians for Responsible Utility Growth on January 3, 1992. FRG filed proposed findings of fact with its brief, and a ruling on each proposed finding is included in Appendix A attached to this order.

The basic issue we are called upon to decide in this proceeding is whether under the provisions of section 403.519, Florida Statutes, Tampa Electric Company has adequately demonstrated the need to construct its proposed plant. The Florida Public Service Commission is the sole forum to determine the need for the proposed power plant, and only issues relating to that need were considered in this proceeding. Separate public hearings will be held by the Department of Environmental Regulation before the Division of Administrative Hearings to consider environmental and other impacts of the proposed plant and its associated facilities.

Section 403.519 delineates five major topics for our consideration in making a determination of need:

1.the need for electric system reliability and integrity;

2.the need for adequate electricity at a reasonable cost;

3.whether the proposed plant is the most cost-effective

alternative available;

4. conservation measures taken by or reasonably available to the applicant which might mitigate the need for the proposed power plant; and

5. other matters within the Commission's jurisdiction which it deems relevant.

We have considered all issues relevant to those topics and we hold, for the reasons set out below, that Tampa Electric has demonstrated the need for the proposed 220 MW IGCC plant. We approve the plant's construction on the condition that TECO does receive the $120 million dollar grant from the Department of Energy to help defray the costs of the project.

The Need for Electric System Reliability and Integrity.

TECO used a combination of criteria to determine its need for 220 MW of additional capacity in the 1995-1997 time frame, including a minimum 20% winter reserve margin and assisted Loss of Load Probability (LOLP) of 0.1 days per year. We find these criteria to be reasonably adequate for planning purposes. The 0.1 days per year LOLP criteria is consistent with the LOLP criteria used by the Florida Electric Power Coordinating Group (FCG), and the winter reserve margin is a reasonable one for a utility of Tampa Electric's size. The planning criteria are applied to TECO's load forecast to determine whether TECO will need additional capacity in 1995 and beyond.

In developing its load forecast, TECO first produces a single demand and energy forecast by combining end-use, multi-regression, and trend analysis techniques. A model of demand and energy use of phosphate customers is forecasted separately, as are the effects of TECO's conservation, load management, and cogeneration programs. The final forecast is a combination of all these methods. It includes projections of population, income, employment, appliance energy use, appliance saturations, appliance efficiency standards, price elasticity, weather (including temperature sensitivities), and residential, commercial and industrial consumption patterns. We believe that the forecasting methodology has produced a reasonably adequate prediction of TECO's future load. The forecast demonstrates that TECO does have a need for additional capacity beginning in 1995 to meet its reliability criteria.

To meet its reliability criteria, TECO shows a need for 65 MW of capacity in 1995, 66 MW in 1996, and 43 MW in 1997. TECO's

proposed need for capacity is similar to the need demonstrated in TECO's expansion plan in Docket No. 910004-EU. That plan provided for 75 MW in 1995, 75 MW in 1996, and 70 MW in 1997. Since TECO's proposed unit consists of a 150 MW advanced combustion turbine and a 70 MW heat recovery steam generator, TECO will build a large portion (150 MW) of the needed 220 MWs of capacity at one time, somewhat earlier than needed. TECO had planned to phase in a 220 MW combined cycle unit by bringing a 75 MW combustion turbine (CT) on line in each of the years 1995 and 1996 with a 70 MW heat recovery steam generator being added in 1997. Given the participation of the DOE in the IGCC demonstration project, Tampa Electric will construct some portion of the needed 220 MW slightly sooner and some portion slightly later than under the old plan, but it will do so at a significantly lower cost. Since TECO does not anticipate any adverse effects on the reliability of its system by placing some of the capacity into service earlier than needed, and since early construction of part of the needed capacity is reasonable in order to obtain DOE funding for a substantial portion of the project and thus lower the cost, we believe early construction is justified.

It is clear from the record that if additional capacity is not placed into service by 1996, TECO's winter reserve margin is expected to fall below 20 percent and its LOLP is projected to rise above the 0.1 days per year maintained for system reliability.
The first 150 MW of the IGCC unit is due to be put into service in just over three years, in mid-1995. Given the lead time necessary for utilities to construct new generating facilities, TECO's petition was filed at a reasonable time.

TECO's reliability criteria will not be met unless the proposed IGCC unit is completed in the time frame requested. TECO would also risk losing the DOE funding it will receive for design, construction, and operation of the unit. Thus any delays in the construction of the plant could ultimately cost TECO its most cost-effective alternative for meeting future capacity needs.

TECO's reliability criteria of 0.1 days per year LOLP and minimum winter reserve margin of 20 percent would be violated with a delay in the in-service date of the proposed unit (Exhibit 1, p. 60). If no capacity is added to TECO's system in 1995, TECO's Loss of Load Probability (LOLP) is estimated to be 0.140 days per year and its winter reserve margin will be 19.1 percent. If no capacity is added in 1996, the net LOLP will deteriorate to 0.199 days per year and the winter reserve margin will drop to 16.2 percent. Thus, the addition of capacity from the proposed IGCC unit is needed for TECO to maintain acceptable reliability criteria.

TECO's proposed 220 MW IGCC unit is also needed to contribute to the reliability and integrity of the electric system of the State as a whole. Shahla Speck, of the Florida Electric Power Coordinating Group (FCG) testified in this proceeding that the phased-in capacity from Polk Unit One is consistent with the needs of Peninsular Florida, and will provide a portion of the additional generating capacity that is needed between 1995 and 1997 for the peninsula to maintain an adequate level of reliability.

Ms. Speck based her conclusion on an analysis of FCG's 1989 Planning Hearing document entitled "Generation Expansion Planning Studies", with consideration of all known changes which have occurred since that study was performed. Peninsular Florida's utilities plan to have 39,050 MW of total capacity, not including the proposed Polk Unit One, in the winter of 1996/1997 to meet a projected firm winter peak demand of 34,310 MW. The reserve margin is expected to be 4,740 MW. With the addition of TECO's proposed IGCC, the reserve margin will increase to 4,960 MW (14.5%), and with the projected capacity increase from 220 MW to 260 MW in the IGCC unit, Peninsular Florida's reserve margin will be 5000 MW (14.6%) in the winter of 1996/1997. We believe the addition of the proposed IGCC plant will contribute to the reliability of the electric system of the State of Florida by providing capacity in the time frame in which it is needed.

The proposed IGCC unit, which will burn gas extracted from coal, will not contribute to the fuel diversity of TECO's system, which is already heavily reliant on coal as a fuel. We are not persuaded by TECO's argument that coal gas is a new fuel that will contribute to fuel diversity on TECO's system. Regardless of the fact that gas is the end product of a coal gasification process, the source fuel is still coal. Currently, about 99% of the energy generated by TECO's units comes from coal. The IGCC unit will only increase TECO's reliance on coal as a major fuel source.

Furthermore, the proposed unit will not contribute to the fuel diversity of peninsular Florida. Peninsular Florida has a wide variety of generating technologies that use a diverse range of fuels, including coal, natural gas, oil, and nuclear. TECO's proposed IGCC unit will not significantly affect the fuel mix of Peninsular Florida's generating units, and therefore will not contribute to fuel diversity.

Nevertheless, in this proceeding the determinative issue is whether it is cost-effective for TECO and TECO's ratepayers to

incur the higher capital cost of an IGCC unit to enable use of lower cost coal fuel. That appears to be the case here, because the DOE grant significantly lowers the total capital cost of the project. As we will explain in detail below, the IGCC unit is the most cost-effective alternative to meet TECO's capacity needs. That fact drives our decision to grant TECO's petition.

The Need for Adequate Electricity at a Reasonable Cost

Fuel forecasts and Fuel Costs

With certain reservations we find that TECO's fuel price forecast is reasonably adequate for planning purposes. TECO Witness Mr. Smith stated that coal prices are expected to remain relatively stable through the year 2000, while natural gas and oil prices are projected to increase rapidly. TECO's forecasting methodology includes reliance on data from government sources and industry association forecasts, trends, and two independent outside consultants. Forecasted transportation prices are added to obtain total delivered prices.

It appears that different fuel price forecasts have little impact on the proposed IGCC project's cost effectiveness. We are concerned, though, that TECO's forecast favors the use of coal over oil or natural gas over the long term for projects with similar costs. An extremely low natural gas price forecast favors an expansion plan which contains just combustion turbine and combined cycles. A low natural gas price forecast does not favor an expansion plan that includes the DOE IGCC project.

The type of new generating unit chosen is not necessarily driven by fuel cost per se; rather, it is the difference in cost among competing fuels. TECO's fuel forecast projects a widening cost differential between coal and natural gas or oil, when in fact for many years the cost differential between the cost of coal and the cost of natural gas and oil has remained relatively constant. In the future, TECO should pay close attention to this differential, and must be ready to substantiate continued reliance upon fuel price forecasts that have not accurately predicted the relationship between the price of coal and the price of natural gas and oil.

TECO provided sufficient assurance in this case that primary and secondary fuel will be available for the proposed plant on a long and short term basis at a reasonable cost. Fuel purchases will be made at market prices. TECO proposes to use the following fuels at its IGCC facility:

-Natural Gas

TECO is proposing to use natural gas on an interruptible basis to the extent available from Florida Gas Transmission. Dependence on interruptible gas means interruptions during peak demand or when the gas is most needed, and it is therefore practical to have on-site storage of No. 2 oil.

-No. 2 Oil

TECO proposes to use No. 2 oil as the primary fuel in the first year and a backup or secondary fuel in all subsequent years. The Tampa Bay area is one of the key distribution areas for No. 2 oil. Delivery of No. 2 oil will be by truck from Port Manatee or by the GATX oil pipeline adjacent to the project site.

-Coal

Coal will be the primary fuel for the IGCC unit. The coal to be used will be similar in sulfur content and price to that burned at TECO Big Bend Unit 4, and is the cheapest of all fuels. Delivery of coal to the plant will be by rail. Partial water borne delivery may be possible depending on the total delivered cost. Tests done using Eastern United States coals during the first two years will aid selecting the more cost-effective sources.

In conjunction with our semi-annual fuel cost recovery proceedings, we will of course evaluate all fuel related expenses to determine that the costs are reasonable and justified. We are satisfied here, though, that TECO has provided adequate assurances on the availability of primary and secondary fuel to the proposed facility on a long and short term basis at a reasonable cost.

Costs of Clean Air Act Compliance

The record in this case demonstrates that TECO adequately took into account the costs of environmental compliance associated with the Clean Air Act when it evaluated its future generation needs.
TECO plans to comply with the Clean Air Act by one or more of the following: fuel switching; installing scrubbers; alternative technologies; and, purchasing allowances. Phase I compliance with the Clean Air Act will not be affected by the proposed IGCC plant, but the plant will be an asset to TECO in Phase II compliance.

The Company estimates savings in the range of $50 to $100 million over the life of the proposed IGCC unit, compared to fuel switching or other Clean Air Act compliance strategies.

Site, Design, and Engineering Characteristics

TECO provided sufficient information on the site, design and engineering characteristics of its 220 MW IGCC unit to enable us to adequately evaluate its proposal. A Power Plant Site Selection Task Force, consisting of private citizens from environmental groups, businesses and universities, provided guidance and recommendations to TECO throughout the site selection process. The task force recommended the Polk County site, consisting of 3572 acres of mined out phosphate land. The site is located near the FGT/Hardee Power Station natural gas lateral and close to rail transportation for coal delivery. Distillate (No. 2) oil can be made available to the site by truck or pipeline.

Originally, TECO's proposed unit was to be a 220 MW IGCC with an estimated heat rate of 9060 BTU/kWh. Results from the FLUOR Engineering Study, received after TECO's need petition was filed on September 5, 1991, showed that the projected capacity of the unit increased to 260 MW and the heat rate dropped to 8486 BTU/kWh. These improvements result largely from two factors: TECO's decision to use a more efficient General Electric 7F turbine instead of a 7EA turbine, and TECO's determination that the heating value of natural gas is greater than that of coal gas.

TECO's proposed IGCC unit will present a demonstration of hot gas clean-up on a large scale. Hot gas clean-up technology has been successfully demonstrated on a 2 MW scale, but not on the scale TECO will attempt to demonstrate. No evidence was presented by any party that a scale-up in size was not viable. Rather, DOE Witness Bechtel's rebuttal testimony stated that "Tampa Electric has this capability as well as the presence in the industry to showcase effectively the project's results, thereby resulting in the successful commercialization of this technology".

The project will have redundant (hot and cold) gas clean-up capabilities to offset the risk that the hot gas clean-up technology will not perform as expected. No evidence was presented that showed that the back-up cold gas clean-up technology is not a reliable procedure. Although no utility currently has in its rate base a plant the size of TECO's proposed IGCC using cold gas clean-up, TECO presented evidence that cold gas clean-up has been successfully demonstrated in the United States with a number of projects, including:

-The 120 MW Cool Water Facility, located in California. Based on

the Texaco gasification process and a General Electric combustion turbine unit, this plant operated for over 26,000 hours and achieved a capacity factor of 87% in its final quarter of operation. This plant will be expanded and returned to commercial operation in a few years.

-The 160 MW facility owned by Dow Chemical in Louisiana. Consisting of a Dow gasifier and a combustion turbine that originally burned natural gas prior to being modified to burn gasified coal, this plant achieved a success similar to that experienced at the Cool Water Facility.

We therefore believe that TECO's proposed project is commercially viable. The record in this proceeding shows that TECO will be able to demonstrate the technical and economic viability of oxygen-blown, entrained-bed IGCC with hot gas clean-up, and generate clean, efficient, coal based power for the increasing demands of the region.

Most Cost-Effective Alternative

TECO has demonstrated that the proposed IGCC unit is the most cost-effective alternative to provide the additional needed capacity for TECO and peninsular Florida. Using TECO's most recent financial estimates, the proposed IGCC unit is estimated to save TECO's ratepayers $195 million over the life of the unit compared to TECO's next best option. These savings are primarily attributable to fuel savings (resulting from the use of coal) and the $120 million DOE contribution. The unit is projected to have an installed cost of $389 million dollars (1996), including the DOE funding. This estimate does not include the economic effects of potential EPRI funding for the project, which would result in even more savings. Clearly the $120 million in DOE funding and the potential for some additional assistance from EPRI have favorably affected the cost-effectiveness of the IGCC project.

The DOE Grant

Of the $120 million grant to be awarded to TECO by DOE, $100 million will go toward plant construction and $20 million will go toward the first two years of operation and maintenance of the proposed unit. TECO estimates that the hot gas clean-up equipment for its proposed unit will cost approximately $11.5 million ($1991). If the hot gas clean-up experiment fails and TECO is required to fully operate the cold gas clean-up system, TECO predicts a minimal reduction in plant efficiency that would result

in a $3 million reduction in savings associated with the IGCC plant. This financial penalty is extremely low, considered in light of the $62 million savings ($195 million based on revised estimates) expected to result from choosing the IGCC plant.

DOE Witness Bechtel testified that the $120 million grant money is not refundable by TECO under any condition, and thus we believe TECO's ratepayers are adequately protected if the demonstration technology fails. If TECO profits from the sale of the plant to another party or utility, or if TECO profits from the commercialization of the technology by other utilities for future projects, TECO would typically be expected to pay 5% of future profits in royalties to DOE. We note that in the future if TECO does profit from the commercialization of the hot gas clean-up technology, we would expect TECO's ratepayers to share in the project's profits, just as they will have shared in the project's costs.

A final version of the DOE Cooperative Agreement was not available for our review in this proceeding. TECO is awaiting DOE approval of certain modifications to the agreement. These modifications include a change in the original site location to the Polk County site and use of the Texaco coal gasification technology. We were assured by the Department of Energy and TECO at the hearing that the final agreement will be forthcoming shortly and that it will issue in substantially the same form that it presently exists. We are confident that the grant will be available to TECO to defray a significant portion of the costs of the IGCC project, and therefore we approve the project. Because of the importance of the DOE grant to the cost-effectiveness of the project, however, we must condition our approval on TECO's receipt of the $120 million grant with no requirement that TECO repay any part of the $120 million grant.

Fuel forecast Comparisons

Due to concerns regarding the sensitivity of TECO's fuel forecasts, our staff asked TECO to perform an economic comparison of its proposed IGCC unit (using coal) and the phased combined cycle unit from Docket No. 910004-EU (using five different gas forecasts for the phased CC unit). The five fuel forecast scenarios used to compare TECO's proposed IGCC Unit and its phased combined cycle unit were:

1.TECO base fuel forecast;

2.FCG fuel forecast;

3.City of Tallahassee's latest (9/91) fuel forecast;

4.FPC base case and high case fuel forecast; and

5.Fuel forecast specified by staff. Because our staff believes that the price of natural gas will not escalate as rapidly as TECO estimated, TECO was asked to compare the economics of the IGCC unit and the phased combined cycle unit by using currently projected costs for coal and natural gas in 1995 and holding the 1995 cost differential between the two fuels constant over the life of the IGCC unit. Our staff considered this fuel forecast to be the "acid test", or "worst-case" forecast.

TECO also performed both a "break-even capacity factor" analysis and a "revenue requirements" analysis using the above mentioned fuel forecasts. In the "break-even capacity factor" analysis, the levelized in-service cost of the two plants (IGCC and CC) was determined at various capacity factors ranging from 30% to 100%. Throughout the capacity factor range in which TECO plans to operate its IGCC unit (around 80%), the IGCC plant was cost-effective under all fuel price scenarios.

In the "revenue requirements" analysis, the nominal costs of the two plants (IGCC and CC) were determined at a capacity factor of both 60% and 80% for each year of the life of the plant. The analysis concluded that TECO's proposed IGCC unit is cost-effective under all fuel price scenarios, including our staff's "acid test", at both the low capacity factor of 60% and the expected operating capacity factor of 80%.

TECO also performed a cost comparison between its proposed IGCC project and FPL's current avoided unit, a 1997 IGCC unit. Compared to FPL's avoided unit, TECO's proposed project is more cost-effective.

The cost savings testified to by TECO Witness Ramil do not include the estimated $50 to $100 million of savings (over the unit's life) which will derive from the fact that the IGCC unit will assist TECO in meeting the stringent requirements of Phase II of the Clean Air Act amendments. It is not possible at this time to determine a firm estimate of TECO's cost of complying with Phase II requirements. It is clear at this time, however, that the IGCC unit will enable TECO to back down on the dispatch of dirtier units on its system, and thus save TECO some costs of Phase II compliance.

Alternative Generating Technologies

TECO demonstrated in this proceeding that it adequately explored the construction of alternative generating technologies. TECO initially evaluated 46 different generating technologies to meet its future capacity needs. Each of these technologies were screened on the basis of geographic viability, construction lead time required, public acceptance, environmental compliance, cost, safety, and proven demonstration and commercialization. After performing a screening curve analysis, TECO selected the following seven technologies for an economic optimization analysis:

1.Conventional Pulverized Coal
2.Integrated Coal Gasification Combined Cycle (IGCC)
3.Combustion Turbine (CT)
4.Combined Cycle (CC)
5.Phosphoric Acid Fuel Cell
6.Solar Thermal
7.Photovoltaic Solar Cell

After evaluating the economics of expansion plans involving the technologies that passed the initial screening, TECO found that the expansion plan which included the IGCC unit - with the $120 million grant from the Department of Energy - was the most cost-effective plan. In other words, the IGCC unit had the lowest present worth revenue requirements (PWRR) of the other generating alternatives available.

Conservation

TECO projects that its 1996 winter peak demand will be reduced by 205 MW as a result of load management, and 277 MW as a result of its conservation programs. This 482 MW total represents 13% of TECO's projected 1996 winter peak demand (3703 MW). TECO currently spends 95% of its demand-side management dollars on programs targeted at residential customers. Between 1981 and 1990, 94% of the demand reductions TECO achieved through conservation were achieved through its residential programs, and it appears that TECO's residential conservation programs are doing a reasonable job of saturating the eligible market. The participation rates for some of TECO's commercial and industrial programs, however, appear to be low.

None of the parties in this proceeding presented quantitative evidence regarding the possibility of expanding participation in TECO's approved programs that are projected to have a participation rate of less than 10%. There is little evidence in the record to conclusively demonstrate either the feasibility or

the difficulty of increasing participation rates in those programs. Furthermore, TECO's conservation programs appear to be deferring peaking units only, not baseload or intermediate load units.

We do believe TECO has adequately considered the conservation measures that would be reasonably available to avoid the need for this proposed plant. It does not appear that additional timely and cost effective conservation measures can reliably defer the need for capacity in 1995. System savings due to conservation programs are difficult to measure, and it is difficult to project the achievable penetration rate for each program. However, we also believe that TECO needs to demonstrate to us why it cannot be more aggressive in pursuing conservation, particularly for its commercial and industrial customers. We will therefore require TECO to resubmit its conservation plan no later than one year prior to filing its next need determination petition. This resubmission shall explain in a detailed and definitive manner why market penetration cannot be increased for each of TECO's approved conservation programs. We expect TECO to conduct market achievability studies, and to experiment with control and test groups. We will not accept conjecture about market penetration feasibility. In addition, TECO should consider expanding its conservation plan to include programs that would defer the need for baseload and intermediate load units.

Floridians for Responsible Utility Growth does not agree that TECO has adequately demonstrated that the proposed IGCC unit is the most cost-effective alternative to meet its future capacity needs. FRG urges us to deny TECO's petition because the company has failed to meet its statutory obligation to take available conservation measures and propose the most cost-effective resource alternative.

FRG argues that under section 403.519, the phrase "most cost-effective alternative" available means "least cost" option or combination of options available, and under that section utilities must demonstrate that proposed power plants are the least cost options available to meet system requirements. FRG states that because section 403.519 requires the Commission to take into account the need for adequate electricity "at a reasonable cost", as well as whether the proposed plant is "the most cost effective alternative," it follows that "cost-effective" must be given a meaning that is congruent with "reasonable cost" as well as with its common usage meanings. By common usage definition, FRG states, "cost-effective" means that an investment's benefits are equal to or greater than its costs and that the costs are less than those of other reasonable alternatives. In the context of resource options to meet electricity needs, then, the requirement

to provide "reasonable cost electricity must be deemed to require electricity that can be provided at the lowest cost because it would not be "reasonable" to pay more than what is necessary for electric resources.

FRG acknowledges that there are other matters to consider besides cost in choosing a resource option, and FRG mentions that system reliability and integrity are two examples specifically mentioned in the statute. FRG concludes though that because TECO did not propose an alternative standard to assist us in determining what is "most cost-effective", and because "least cost" is the most logical standard in light of the provisions of section 403.519, we should adopt the interpretation that the terms "most cost-effective alternative" and "least cost option or combination of options" are synonymous.

We do not agree with FRG's interpretation of the phrase "most cost-effective alternative available". We believe that the Florida Legislature contemplated our consideration of a broad range of factors to determine the need for a proposed power plant, including electric system integrity and reliability and other strategic matters that might be relevant to a particular case. If the Legislature intended that the Commission use the more restrictive analysis contemplated by the term "least cost" in its determination of the need for a proposed power plant, the Legislature would have adopted that phrase. Rules of statutory construction require the inference that the phrase that the Legislature did use does not mean simply "least cost option". Our disagreement with FRG over the interpretation of section 403.519 may be more a matter of semantics than substance, because we believe that either interpretation attempts to reach the same result - the provision of adequate and reliable electric service at a reasonable cost.

FRG has asked us to determine what obligation TECO has under section 403.519 to demonstrate what measures have been taken or were reasonably available to TECO which might mitigate the need for TECO's proposed unit. FRG proposes that section 403.519 requires that utilities seeking a determination of need for new power plants must demonstrate that they have fully examined the energy efficiency and other DSM alternatives reasonably available to them, based on their own research and experience, the studies and experience of other Florida utilities, and the research and DSM programs of utilities nationwide. FRG contends that the statute also requires utilities to demonstrate that they have reasonably implemented (i.e., have undertaken well designed programs that are comprehensive in their coverage of customer market segments and electric end-uses) the cost-effective DSM measures available to mitigate the need for proposed plants.

It is our opinion that TECO, the petitioner in this case, has the burden to prove to the Commission by a preponderance of the evidence that it has a need to construct an IGCC unit in Polk County by 1996, taking into account all the factors set out in section 403.519, Florida Statutes. Specifically, TECO has the obligation to show the conservation measures it has taken to mitigate the need for the proposed unit, and it has the obligation to show that the measures taken were consistent with its conservation plans required by section 366.81, Florida Statutes, and approved by Commission order.

Section 403.519, Florida Statutes specifically directs the Commission to consider "the conservation measures taken by or reasonably available to the applicant . . . that might mitigate the need for the proposed plant. . . " This provision of section 403.519 should be construed in a manner that is consistent with and gives effect to the terms of FEECA, specifically sections 366.81 and 366.82(3) and (4). We are of the opinion that a consistent construction of the two statutes is achieved by requiring a utility in a need determination proceeding to show that it has reasonably implemented conservation measures included in its conservation plans, as directed by section 366.82(3) and as approved by Commission order, and that it has reasonably considered conservation measures that might mitigate the need for this proposed plant.

While the record in this proceeding shows that TECO can improve its conservation efforts, the record in this proceeding does not show that additional conservation can be implemented quickly enough to avoid construction of this particular power plant, and thus additional conservation cannot "mitigate the need" for the IGCC plant. FRG's proposal to expand our review and analysis of TECO's conservation efforts may have merit in another forum, but they exceed the scope of our review of those efforts here.

Purchased Power Alternatives

The record demonstrates that TECO adequately explored and evaluated the availability of purchased power from other electric utilities. TECO currently plans to purchase firm capacity from TECO Power Servicec (TPS) in 1993. At that time, TECO and SEC will share 295 MW of firm capacity generated at Hardee Power Station. The availability of this 295 MW is based on the projected backup energy requirements of SEC.

TECO also evaluated the possibility of importing capacity from the Southern Company via the 500 kV transmission line with a capacity of 3200 MW, 50% participation in an 800 MW coal unit, with a 1998 in-service date, and the possibility of purchasing 100 MW of firm capacity in both 1998 and 1999. These evaluations indicated that the proposed IGCC plan was still the most cost-effective alternative.

We note that all the cogenerators that intervened initially in this proceeding withdrew their intervention prior to the hearing. Thus the record does not show that any cogenerator offered to build capacity which would avoid the need for the IGCC project, or that cogeneration projects could fill TECO's capacity needs in a cost-effective manner. The $120 million DOE grant lowered the avoided cost of the project, thereby lowering the potential payments to cogenerators. It is, we suppose, theoretically possible that the DOE grant would be transferable to a cogenerator to demonstrate the new coal gasification technology, but practically speaking it is not likely that would happen. The transfer could not be made without DOE approval and it is clear from the record that DOE expects TECO to construct and demonstrate the project. Furthermore, a cogenerator, or any other party, would have difficulty securing a site, gaining permits and completing the construction of capacity in the short amount of time remaining to meet TECO's capacity needs.

TECO currently has a total of 289 MW of cogeneration on its system, with 41 MW from firm purchase contracts with three cogenerators and 248 MW from self service generation. TECO forecasts a total of 364 MW of cogeneration by 1996, with 68 MW of firm power purchases from cogenerators and 296 MW from phosphate mine self-service generation. A large percentage of the industrial load on TECO's system comes from phosphate mining operations.

We encourage TECO to actively pursue non-utility generation for its next needed capacity, particularly through negotiations for firm capacity purchases from qualifying facilities. Cogenerators who do not get satisfactory results by negotiating with TECO may intervene in TECO's next need determination proceeding. Here we will not require TECO to allow outside parties an opportunity to bid against its proposed IGCC unit. Currently, there is no Commission rule that requires bidding. Furthermore, TECO's IGCC unit with DOE funding is more cost effective than the combined cycle unit in Docket No. 910004-EU. It is unlikely that a bid lower than the cost of TECO's proposed IGCC could be obtained.

Conclusion

Based on our resolution of the factual and legal issues presented in this case, for the reasons explained above, and with the conditions explained above, we grant TECO's petition for determination of need for a 220 MW IGCC unit, with 150 MW on-line in 1995 and 70 MW on-line in 1996. We believe that TECO's petition satisfies the statutory requirements of section 403.519, Florida Statutes. The addition of 150 MW in 1996 and 70 MW in 1996 will serve TECO's capacity needs and contribute to meeting its reliability criteria of 0.1 days/year LOLP and 20% winter reserve margin. Phased-in capacity from Polk Unit One is consistent with the needs of Peninsular Florida, and will provide a portion of the additional generating capacity needed between 1995 and 1997 for the peninsula to maintain an adequate level of reliability. As a result of receiving $120 million in funding from DOE, TECO's proposed IGCC facility is the most cost-effective generation alternative. TECO estimates its proposed plant will save customers $195 million over the life of the unit, compared to the next best (most cost-effective) alternative. Operation of the IGCC will allow TECO to back down the dispatch of dirtier units, thereby assisting TECO with compliance with Phase II requirements of the Clean. It appears that further timely and cost effective conservation measures cannot reliably defer the need for the IGCC unit.

Based on the foregoing, it is

ORDERED by the Florida Public Service Commission that, for the reasons, and with the conditions, set out in the body of this order, Tampa Electric Company's Petition for Determination of Need for a Proposed Electrical Power Plant and Related Facilities in Polk County is hereby granted. It is further

ORDERED that this Docket shall be closed.

By ORDER of the Florida Public Service Commission this 2nd day of MARCH, 1992.

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 Appellate Procedure. The notice of appeal must be in the form specified in Rule 9.900 (a), Florida Rules of Appellate Procedure.