BEFORE THE FLORIDA PUBLIC SERVICE COMMISSION

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| In re: Investigation into the Cold Weather Capacity Shortfall Emergency Occurring in Peninsular, Florida, December 23-25, 1989. | ) | DOCKET NO. 900071-EG<br>ORDER NO. 22708<br>ISSUED: 3-20-90 |

The following Commissioners participated in the disposition of this matter:

MICHAEL McK. WILSON, Chairman
THOMAS M. BEARD
BETTY EASLEY
GERALD L. GUNTER
JOHN T. HERNDON

ORDER ADOPTING REPORT ON PENINSULAR FLORIDA COLD WEATHER CAPACITY SHORTFALL EMERGENCY DECEMBER 23-25, 1989, AND NOTICE OF PROPOSED AGENCY ACTION REQUIRING FLORIDA ELECTRIC UTILITIES TO PREPARE A SPECIFIC SEVERE WEATHER EMERGENCY PLAN FOR THE STATE OF FLORIDA

BY THE COMMISSION:

Adoption of Report

During the Christmas holidays (1989), Florida experienced extremely cold weather throughout the state. As a consequence of the arctic cold front which moved into and became stationary over the state, widespread shortages of electric generation were experienced by Florida's electric utilities. For a three-day period beginning Saturday evening, December 23, and continuing through midday Monday, December 25, customer demand outstripped available generating capacity, resulting in rotating blackouts to homes throughout peninsular Florida.

On January 3, 1990, the Commission staff held a public workshop to discuss the reasons for the statewide power shortages with executives from each of Florida's electric utilities. At the workshop, the staff issued an extensive data request to the utilities seeking to reconstruct more completely the events of the Christmas weekend. This data was received on January 17, 1990.

On February 2, 1990, staff released its final report. The report analyzes the utility data and identifies potential areas of improved performance which may be practiced during future cold weather emergencies.

Having reviewed the staff's analysis and recommendations in the final report, we find that it should be adopted by the Commission. This Order constitutes our final agency action on this issue.

Proposed Agency Action Requiring Development of Plan

Notice is hereby given by the Florida Public Service Commission that the action discussed below is preliminary in nature and will become final unless a person whose interests are substantially affected files a petition for formal proceeding pursuant to Rule 25-22.029, Florida Administrative Code.

The primary recommendation of the staff in this investigation is that the Commission issue a proposed agency action order requiring Florida's electric utilities to prepare a specific cold weather emergency plan for the State of Florida. Staff further recommends that the development of these plans should be coordinated by the Florida Electric Power Coordinating Group (FCG) in concert with this Commission, the Governor's Energy Office, the Department of Community Affairs/Division of Emergency Management, and local county and municipal government agencies. We are convinced of the wisdom of this recommendation and will require the development of such a plan by this order. We believe, however, that such a plan should not be limited to cold weather emergencies. Rather, emergency preparedness plans should be developed which address all types of severe weather conditions which threaten the integrity of electric power supplies in Florida. We believe that the development of such severe weather plans are desirable for the reasons set forth below.

Each electric utility in Florida has an emergency plan and emergency operating procedures in place which address actions to be taken in a capacity shortfall emergency. However, these plans and procedures appear to place more emphasis on managing generation resources and curtailing load during an emergency rather than managing customer demand through public awareness prior to an emergency. It is clear that utility efforts to forewarn the public of pending blackouts during the Christmas holidays were not entirely effective.

Although existing capacity shortfall plans call for public announcements and appeals for conservation as soon as an emergency appears imminent, they lack sufficient detail about how, when, and

how urgently these announcements should be made. Little distinction is made between a cold weather emergency and other types of capacity shortfall threatening emergencies, such as hot weather, hurricanes, or fuel shortages. No distinction is made for emergencies which occur over holidays as opposed to normal working days. Procedures for contacting other emergency officials during the course of a capacity shortfall emergency are vague and inconsistent from utility to utility. While utility functions such as generation and transmission system operating procedures appear to be coordinated statewide, there does not appear to be the same level of coordination between utilities and state and local emergency personnel during a severe weather emergency.

As such, we believe that specific severe weather emergency plans are needed for the State of Florida. Such plans should begin with individual utility plans. Significant enhancements to existing utility capacity shortfall plans and procedures are needed to specifically address actions to be taken in a severe weather emergency. Particular emphasis is needed in the area of communications with the public and with local and state emergency officials prior to and during a severe weather emergency. Finally, a Statewide Severe Weather Emergency Plan is needed to ensure consistency among the individual utility plans and to establish paths of communication and coordination between utilities and state and local officials during a severe weather emergency.

We believe that certain elements are essential to any effective severe weather emergency plan, and we will expect the utilities to incorporate those specific elements discussed below.

First, we believe that utilities should establish more effective means of communicating with the public prior to and during a severe weather emergency. Clearly, the first element of a Statewide Severe Weather Emergency Plan must focus on the early identification of any severe weather threat to electric service in Florida. Most, if not all, utilities in Florida subscribe to the broadcast services of the National Weather Service and therefore, know when threatening weather is approaching Florida. Generally, it appears that severe weather alerts from the National Weather Service can be expected at least 48 hours in advance of a storm's approach. This leaves precious little time for utilities to prepare "custom-made" announcements and press packages. Consideration should be given to the development of "precanned" radio, television, and print media spots which can be left on file with local and statewide media networks. These may be updated and augmented as necessary as the threat of a severe weather emergency becomes more certain. To ensure the timely and uncensored release of these public announcements, media spots should be prepaid and

published or broadcast on demand. Because of the likelihood of short lead times, emphasis should be placed on "live" media formats such as television and radio. Scrolling text at the bottom of television screens seems particularly effective.

The Statewide and individual utility plans should contain consistent, stepwise progressive levels of alert which escalate in their gravity as weather conditions worsen. For example, a Phase 1 Alert might communicate the approach of a severe weather front and trigger the release of initial conservation messages through the press. As the severe weather materializes, the urgency of conservation messages would be stepped up and the possibility of rotating blackouts emphasized. Local and state emergency facilities and personnel would be placed in a state of readiness. Instructions on what to do in the event of a blackout would be released, including emergency phone numbers for the utility and for local authorities. At Phase 3, when rotating blackouts are imminent, radio and television stations should be alive with blackout announcements and "scrolling" messages. By now all emergency services should have been fully activated and phone lines open to handle the inquiries from the public. By Phase 4, the actual curtailment and rotation of electric service, conservation pleas should continue to be broadcast and emergency services and contacts clearly made known.

The point of this example is not to predetermine or dictate the exact content of a Statewide Severe Weather Emergency Plan. Rather, it is intended to emphasize the need for planned, coordinated communication between utilities and their customers and return utilities and local and state emergency personnel during a severe weather emergency. Only through this high level of communication and cooperation can the chaos, confusion and, ultimately, anger and dissatisfaction which occurred during the recent Christmas blackouts be avoided.

Another critical element of any plan to deal with severe weather emergencies should be the development of uniform guidelines and priorities for interrupting firm customer load.

The firm load rotation schemes currently employed by most of Florida's electric utilities differentiate only between critical loads and non-critical loads. We believe that a third distinction for "priority" loads may be appropriate. Critical loads are generally defined as facilities which serve the public health and welfare. Examples are hospitals, emergency medical centers, police and fire protection, and critical water and wastewater facilities. Priority loads are generally defined as individuals with special health related needs. These may range from a life support system in the home to the special heating requirements of

the elderly or infirm. Non-critical loads are generally defined as the remaining population of firm service customers.

The distinction between and treatment of "critical" loads and "priority" loads during a period of firm load shedding is not consistent from utility to utility. This should be addressed in the development of a Statewide Severe Weather Emergency Plan. Generally, we believe that critical loads which serve to protect the public health and welfare should not be included in utility rotation schemes. We also believe that individuals with special medical requirements such as life support systems should be given special consideration in utility rotation schemes. However, there is a need to balance the special requirements of individuals with the need to protect the long term integrity of the bulk power supply system in Florida and to minimize electric service disruptions to the public as a whole. It seems prudent that electrical service to customers depending on life support systems in the home should not be intentionally interrupted unless absolutely necessary. If such loads are to be subjected to rotating blackouts, utilities should be required to establish procedures to identify each customer with special in-house medical equipment and ensure that they are warned of an impending emergency which may affect their electric service. It should also be determined whether these customers have access to a back-up power supply in the home or to appropriate public health facilities. Special consideration should also be given in each utility's load shedding scheme to minimize the frequency and duration of interruptions to "priority" customers.

We also note that the role of cogenerators and small power producers during emergency situations involving capacity shortfalls is not clearly defined in utility plans and procedures. It has been assumed that qualifying facilities will naturally react to the higher fuel prices which occur as more peaking capacity is used during extreme peak conditions by generating and selling more electricity to utilities. The relatively high capacity factors demonstrated by many qualifying facilities during the Christmas weekend tend to validate this assumption. Nevertheless, qualifying facilities cannot react to price unless they know in advance what those prices are likely to be. We believe that utilities should develop written procedures for advising cogenerators of high price periods, particularly when facing a potential capacity shortfall. To the extent that qualifying facilities are on interruptible standby rate schedules, they should also be given as much advance notice as is possible of when these interruptions are likely to take place. Also, to the extent practicable, utilities should encourage qualifying facilities to plan maintenance during off-peak periods.

In addition to the need for a Statewide Severe Weather Emergency Plan, our review of the utilities' performance during the Christmas emergency leads us to make the following suggestions for improvement.

1. Utilities should evaluate the adequacy of their telephone systems and complaint handling procedures during a capacity shortfall emergency.

During the rotating blackouts which occurred over the Christmas holidays, utility switchboards were overwhelmed by calls from consumers. While additional utility personnel was called in, utility phone systems simply were not adequate to handle the large volume of calls. This also appears to have been exacerbated by poor communication with other emergency personnel, such as fire and police officials, who had nothing to tell people who called them other than to refer them to the electric utility. In light of the significant technological improvements which have taken place in the telecommunications industry in the last few years, electric utilities should consider updating their telephone systems.

2. Utilities should enhance year-round public education programs to better inform customers of the benefits of conservation in mitigating the adverse affects of cold weather.

Numerous customer outages were caused by overloaded distribution lines and transformers. Many of these overload conditions occurred as service was being restored following a rotating blackout. As service was restored, home heating systems all came on at once, operating at full load. The resulting surge placed on the electrical system quickly overloaded distribution circuits and in some cases actually melted distribution lines and destroyed neighborhood transformers. The consequences were extremely long outage times. Much of this might have been avoided had consumers been better informed as to what to expect and what to do during extreme weather conditions. Simple advice such as: "Turn down thermostats, wear warm clothing, and if the power does go out, turn off all electrical heating loads until a few minutes after service is restored" might have gone a long way toward mitigating the long outage times experienced by many customers. An informed public, knowledgeable in the ways of energy conservation, is perhaps the most valuable resource available to utilities faced with a severe weather capacity shortfall emergency. Utilities should consider instituting systematic and continuous education programs to inform the public of the effects of severe weather on electrical loads in Florida.

3. Utilities are encouraged to continue to develop and implement cost-effective conservation programs approved by the Commission, including those that promote the cost-effective use of natural gas to moderate Florida's dependence on electric heating.

According to 1986 end-use statistics, 74.2 percent of all home heating in Florida is done with electricity. Only 8.4 percent of home heating is done with natural gas. Because of this reliance on electricity for home heating, Florida is particularly exposed to the surge and overload conditions experienced on local distribution facilities during severe cold weather like that which occurred over the Christmas holidays. Natural gas is a clean, efficient and, in many instances, a cost-effective alternative to the use of electricity for home heating. Where natural gas is available, it would appear prudent for Florida's electric utilities to consider the role natural gas usage might play in mitigating the volatility of winter electrical peaks in Florida.

4. Utilities are encouraged to work in concert with the Commission and the Department of Community Affairs to review the Florida Building Code and the practice of using electric strip heating in Florida homes.

Of Florida homes heated electrically, 77.2 percent use electric resistance strip heat. In terms of energy consumption, electric strip heating is the most inefficient means of heating a home. But because of its low installed cost, the use of electric strip heat is widespread throughout Florida. With the adoption of the 1986 revisions to the Florida Building Code, significant restrictions have been placed on the use of electric strip heat in new homes located in north Florida and, to some extent, central Florida. However, electric strip heat is still widely used in new homes in south Florida. Also, a large percentage of existing homes throughout Florida continue to rely on electric strip heat.

Because of this high saturation, we believe that utilities should continue to pursue cost-effective alternatives to electric strip heat in their service areas. Further, the Florida Building Code should be reviewed to determine whether a more aggressive stance may be taken with respect to the development and enforcement of building standards applicable to new construction, with focus on south Florida. Retrofit applications to existing homes throughout Florida should also be considered.

5. Utilities should encourage the Federal Energy Regulatory Commission (FERC) to expedite its review of the Florida Gas Transmission (FGT) Settlement Docket on the issue of open access and allow the Phase II expansion of the FGT pipeline into Florida to proceed.

FGT's open access docket and the expansion of the FGT pipeline has been in litigation before the FERC for about three years. The Phase II expansion will increase natural gas supplies in Florida by approximately 100 MMCF per day. Under the FGT open access settlement agreement, Florida utilities would be able to contract for firm gas in the field and transport that gas to power plants in the state without the constant threat of interruption. The parties have agreed on most issues in this docket. All that remains is for FERC to hear and resolve some minor rate structure issues and update their Environmental Impact Assessment. This Commission has intervened in the docket, and we will encourage FERC to expedite their review. Florida's electric utilities should also encourage the FERC to expedite their review.

6. Utilities should review their power plant winterization plans and procedures to determine whether critical control lines can be better insulated to protect them from freezing conditions.

A number of generating plant outages and deratings which occurred during the extended cold weather occurred when boiler feedwater sensing lines and other critical water lines froze within the plant. This occurred at the JEA/FPL St. Johns Units 1 and 2 (1248 MW); FPL's Martin 1 (790 MW) and Sanford 3 (139 MW); Seminole's Unit 2 (640 MW); and Lakeland/Orlando McIntosh 3 (340 MW). Winterization plans and procedures should be reviewed at each of these facilities.

7. Utilities should review power plants which use light oil as a primary fuel or back-up fuel during curtailments of natural gas to determine if existing fuel filter systems are adequately designed to ensure uninterrupted fuel flow during cold weather. A number of generating plant outages and deratings which occurred during the extended cold weather occurred when oil fuel filters became clogged and the unit had to be taken off-line to clear or replace the filters. This occurred at FPC's Debary P6 (55 MW); Intercession City P1 (57 MW) and P3 (57 MW); and Suwannee P2 (65 MW); FPL's Port Everglades and Fort Lauderdale Gas Turbines (1458 MW); Kissimmee's Diesel Unit 16 (2 MW); and Orlando's Indian River CTA (96 MW). Fuel delivery systems at these plants should be reviewed to determine whether design improvements can be made to improve the reliability of fuel delivery from fuel storage tanks to the power plant. Dual fuel lines and filters should be installed where practicable.

8. Utilities should pursue alternate fuel capabilities at generating plants which currently burn only natural gas which is subject to curtailments during cold weather.

Because of home heating requirements in the rest of the nation during the Christmas holidays, non-firm gas deliveries to Florida power plants were curtailed from Friday, December 22, until Tuesday, December 26, 1989. At many of the generating plants in Florida which burn natural gas as a primary fuel, light oil is used as a back up. However, due to current environmental constraints, the use of light oil is not permitted at some plants. As a consequence, when non-firm natural gas supplies were curtailed on Friday, December 22, the following generating plants were shut down: FPL's Cutler 5 (68 MW) and Cutler 6 (131 MW); Gainesville's Deerhaven GT 1 (18 MW) and GT 2 (18 MW); and Tallahassee's Purdom GT 1 (12 MW) and GT 2 (12 MW). Utilities should investigate the possibility of obtaining environmental waivers to burn light oil at these facilities during capacity shortfall emergencies.

9. Utilities should review their plans for the reactivation of generating units currently on extended cold stand-by.

During the Christmas cold weather the following generating units were on extended reserve cold standby: FPL's Riviera 2 (71 MW); TECO's Hookers Point 1-5 (206 MW); Jacksonville's Southside 1-3 (107 MW) and Northside 2 (262 MW); Lakeland's Larsen 4-7 (119 MW) and Larsen GT 1-3 (39 MW); and Tallahassee's Purdom 1-4 (32 MW). On Saturday, December 23, the City of Lakeland was able to return Larsen 7 (51 MW) to service, and on Sunday, December 24, Larsen 6 (25 MW) was returned to service.

Current utility plans call for most of the units on extended reserve cold standby to be returned to service during the early to mid 1990's. These units were placed on cold standby because of the high cost of oil and because of adequate reserve margins at the time. In light of the capacity shortfalls which were experienced during the Christmas weekend, these plans should be revisited. Where practicable, cold standby units should be returned to service earlier, or their status should be enhanced from a state of "cold" standby to "hot" standby.

10. Utilities should reflect the impact of the cold weather experienced during the Christmas holidays in their load and energy forecasts and generation and transmission expansion plans.

The Commission opened Docket No. 890779-EU in June 1989 to investigate the adequacy of the electrical transmission grid in north Florida. This docket was originally opened to determine whether additional transmission capacity was needed to avoid transmission bottlenecks projected to occur in north Florida in the mid 1990's. The effects of the rotating blackouts which occurred during December 23-25, 1989, should also be considered in

this docket. Specifically, the Southern companies have stated that during the cold weather emergency experienced in peninsular Florida, the Southern system had generating capacity to sell in addition to the 3400 MW already being sold to peninsular Florida utilities. Southern estimates that, had additional transmission capacity been available in Florida, Southern could have sold, at a minimum, an additional 800 MW to peninsular Florida before encountering transmission limitations on the Southern system. Therefore, one issue that needs to be addressed in Docket 890779-EU is whether additional transmission lines should be built by peninsular Florida utilities to take advantage of emergency power purchases from the Southern system during times of capacity shortfall in the state.

The Commission has also opened Dockets Nos. 900004-EU and 900004-EU-A as part of our ongoing planning hearings to review the long range load and energy forecasts and generation and transmission plans of utilities in Florida. The effects of the December 23-25, 1989 cold weather should be taken into consideration in the utility plans and forecasts to determine the need for base load, intermediate, and peaking capacity in Florida.

In addition to the foregoing, the Commission intends to further review the operating performance of the investor owned utilities' generating units during the Christmas emergency as part of our ongoing Generating Performance Incentive Factor (GPIF) review in the Fuel and Purchased Power Cost Recovery Clause proceedings. In particular, all electric utilities should review the aspects of their generating performance during the Christmas emergency.

We also intend to review in detail the outages which occurred at the Turkey Point 3 and 4 nuclear units. This review will take place in the Fuel Adjustment Clause proceedings.

Turkey Point 4 (688 MW) tripped off line at 11:14 p.m. on Saturday, December 23 as a result of a short circuit which occurred in control circuits to the unit's main steam isolation valve. The problem was found to be due to corrosion of terminal boards which control the unit's main steam isolation valve. The unit was not returned to service until 6:50 a.m. Thursday, December 28. Because of the forced outage experienced at Turkey Point 4, FPL decided for safety reasons to shut down and inspect Turkey Point 3. Turkey Point 3 (688 MW) was taken off line at 1:36 a.m. on Monday, December 25. During the safety inspection which ensued, similar corrosion of the terminal boards controlling the main steam isolation valve were detected. It was determined, however, that the unit could be returned to service and it was brought back on line at 8:52 a.m. on Monday, December 25. The

reason for the corrosion found in the terminal boxes at both units is not known at this time. The Nuclear Regulatory Commission (NRC) is investigating the problem. We will monitor the review by the NRC and address any issues of prudence which may arise from it in the Fuel Adjustment Clause.

Wherefore, it is

ORDERED by the Florida Public Service Commission that the Report on Peninsular Florida Cold Weather Capacity Shortfall Emergency December 23-25, 1989, prepared by the staff of the Commission is hereby adopted as the Commission's own. It is further

ORDERED that the adoption of this Report is final agency action. It is further

ORDERED that Florida's electric utilities shall prepare a Severe Weather Emergency Plan for the State of Florida as set forth in the body of this Order. It is further

ORDERED that that part of this Order requiring the preparation of a Severe Weather Emergency Plan is proposed agency action and shall become final and effective on April 9, 1990, unless a timely petition is received as set forth below.

By ORDER of the Florida Public Service Commission, this 20th day of MARCH, 1990.

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.

As identified in the body of this order, of action requiring the preparation of a Severe Weather Emergency Plan is preliminary in nature and will not become effective or final, except as provided by Rule 25-22.029, Florida Administrative Code. Any person whose substantial interests are affected by the action proposed by this order may file a petition for a formal proceeding, as provided by Rule 25-22.029(4), Florida Administrative Code, in the form provided by Rule 25-22.036(7)(a) and (f), Florida Administrative Code. This petition must be received by the Director, Division of Records and Reporting at his office at 101 East Gaines Street, Tallahassee, Florida 32399-0870, by the close of business on April 9, 1990. In the absence of such a petition, this order shall become effective on the date subsequent to the above date as provided by Rule 25-22.029(6), Florida Administrative Code, and as reflected in a subsequent order.

Any objection or protest filed in this docket before the issuance date of this order is considered abandoned unless it satisfies the foregoing conditions and is renewed within the specified protest period.

If the relevant portion of this order becomes final and effective on the date described above, any party adversely affected may request judicial review by the Florida Supreme Court in the case of an electric, gas or telephone utility or by 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 of the effective date 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.

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.