State of Florida

ORIGINAL

Public Service Commission

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020000-PU

DATE: August 7, 2002
TO: DIVISION OF COMMISSION CLERK AND ADMINISTRATIVE SERVICES
FROM: DIVISION OF ECONOMIC REGULATION (HAFF) MSH JB RJ
RE: FRCC 2002 RELIABILITY ASSESSMENT REPORT

Please add the attached FRCC 2002 Reliability Assessment Report to the docket file and the 10-Year Site Plan Web Site. Thanks.

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FLORIDA RELIABILITY COORDINATING COUNCIL
1408 N. WESTSHORE BLVD., SUITE 1002 • TAMPA, FL. 33607-4512
(813) 289-5644 • FAX (813) 289-5646

August 6, 2002

Mr. Joseph D. Jenkins
Assistant Director
Division of Economic Regulation
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, FL 32399-0850

Dear Joe:

The FRCC has completed its 2002 Reliability Assessment for the FRCC Region. I am enclosing 35 copies of the final report.

We look forward to the workshop on August 16th to formally present this report to the PSC and Staff. If however there are any questions prior to that time, please let us know so that we can ensure those questions are covered at the workshop.

Sincerely,

Linda Campbell

LINDA CAMPBELL
Director of Reliability

Enclosures

2002

Reliability Assessment

August, 2002

FLORIDA RELIABILITY COORDINATING COUNCIL

Table of Contents

Executive Summary

The Florida Reliability Coordinating Council (FRCC) assesses Regional reliability each year to comply with FRCC and North American Electric Reliability Council (NERC) Standards. The reliability assessment report for 2002 consists of four parts: a reserve margin review, an analysis of Forced Outage Rates (F.O.R.) and availability trends for the FRCC Region, a load forecast evaluation and an analysis of the two natural gas pipelines, Florida Gas Transmission Company (FGT) and Gulfstream Natural Gas System (Gulfstream).

The FRCC aggregates load and resource data received from its members and submits the resulting Regional Load & Resource Plan to the Florida Public Service Commission each year. The FRCC Resource Working Group (RWG) reviewed this document along with additional data supplied by member companies to develop this Reliability Assessment Report.

This report can be summarized as follows:

- Reserve margins for the summer and winter peak periods are at or above 20% for the ten year period,
- Generating forced outage rates and unit availability are relatively constant for each year going forward,
- The load forecast is reasonable compared to historical loads,
- The natural gas pipeline capability is expected to be adequate.

The review of information from FGT and Gulfstream indicates that the FRCC Region should be in a position to obtain the pipeline capacity needed as new generation that relies more and more on natural gas as the primary fuel is built in peninsular Florida.

Since the gas supply and delivery is growing in importance, FRCC has begun to assess the gas related factors that could affect the reliability of the Region's electric system. As currently is the case in most of the nation, the majority of new generators being built in the FRCC Region use natural gas as their primary fuel. Some older, oil-fired generators are being repowered, generally as combined cycle units, and will use natural gas as the primary fuel. This results in a substantial increase in the amount of electricity produced from natural gas. In 2001, 19% of the energy in the FRCC Region was served by generators using natural gas. In 2002, that percentage is expected to be almost 30%, and, by 2011, it is forecasted that 50% of the energy in the FRCC Region will be served by generators using natural gas as their primary fuel.

This year the FRCC Load and Resource Plan began reporting merchant plant capacity, as requested by the Florida Public Service Commission. FRCC received data from several companies proposing merchant plants in the FRCC Region. This data indicated approximately 10,600 MW of new merchant capacity is projected to be constructed through the year 2011. Of this total, roughly 15% is under firm contract to load serving entities. Reserve margins for the Region include only that merchant plant capacity that is under firm contract to load serving entities. Therefore, the other 85% of forecasted merchant capacity has not been included in the FRCC reserve margin calculations.

The results of the FRCC analysis indicate that the planned capacity resources and the natural gas pipeline are adequate and reliable for the next 10 years.

Reserve Margin Review

The Florida Reliability Coordinating Council (FRCC) conducts a review of the reliability of the Region on an annual basis in compliance with FRCC and North American Electric Reliability Council (NERC) Standards. The FRCC aggregates load and resource data received from its members and submits the resulting 10 year Regional Load & Resource Plan to the Florida Public Service Commission each year. In 1998 and 1999, the FRCC analyzed the reserve margins projected for Peninsular Florida and performed LOLP analyses for the same periods. In recent years, declining (i.e., improving) projections of LOLP have resulted in reserve margin projections driving Peninsular Florida's capacity needs. Consequently, the FRCC relies on reserve margin analyses as the primary method of assessing resource adequacy.

The FRCC adopted a 15% reserve margin standard for the FRCC Region in 1998. ***Figures 1 and 2*** on the following pages show comparisons of planned summer and winter reserve margins from the 1999, 2000, 2001, and 2002 Regional Load & Resource Plans.

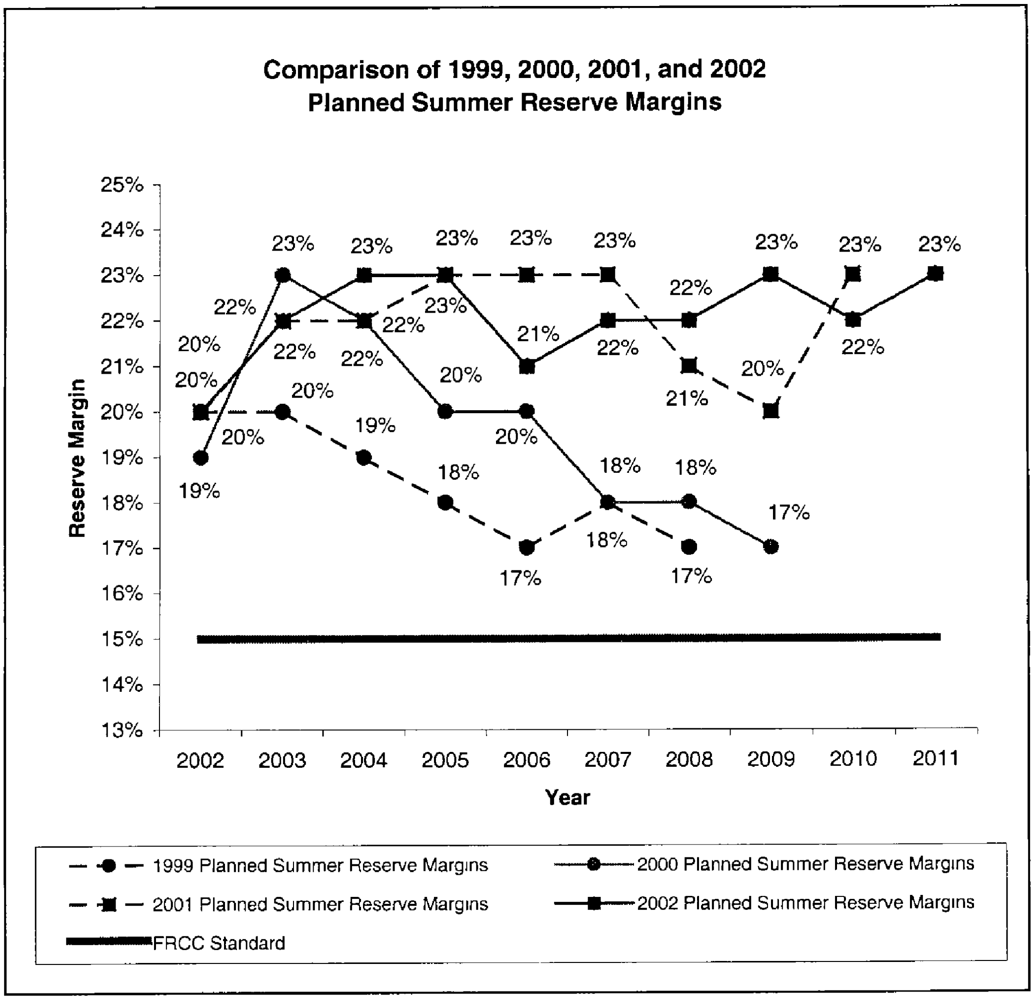

Figure 1

Figure 1 shows that the planned summer reserve margins from the 2002 Plan continue to be over and above the FRCC's reserve margin standard. In fact, the reserve margins in the 2002 Plan are at or above 20% for every year in the ten year forecast period.

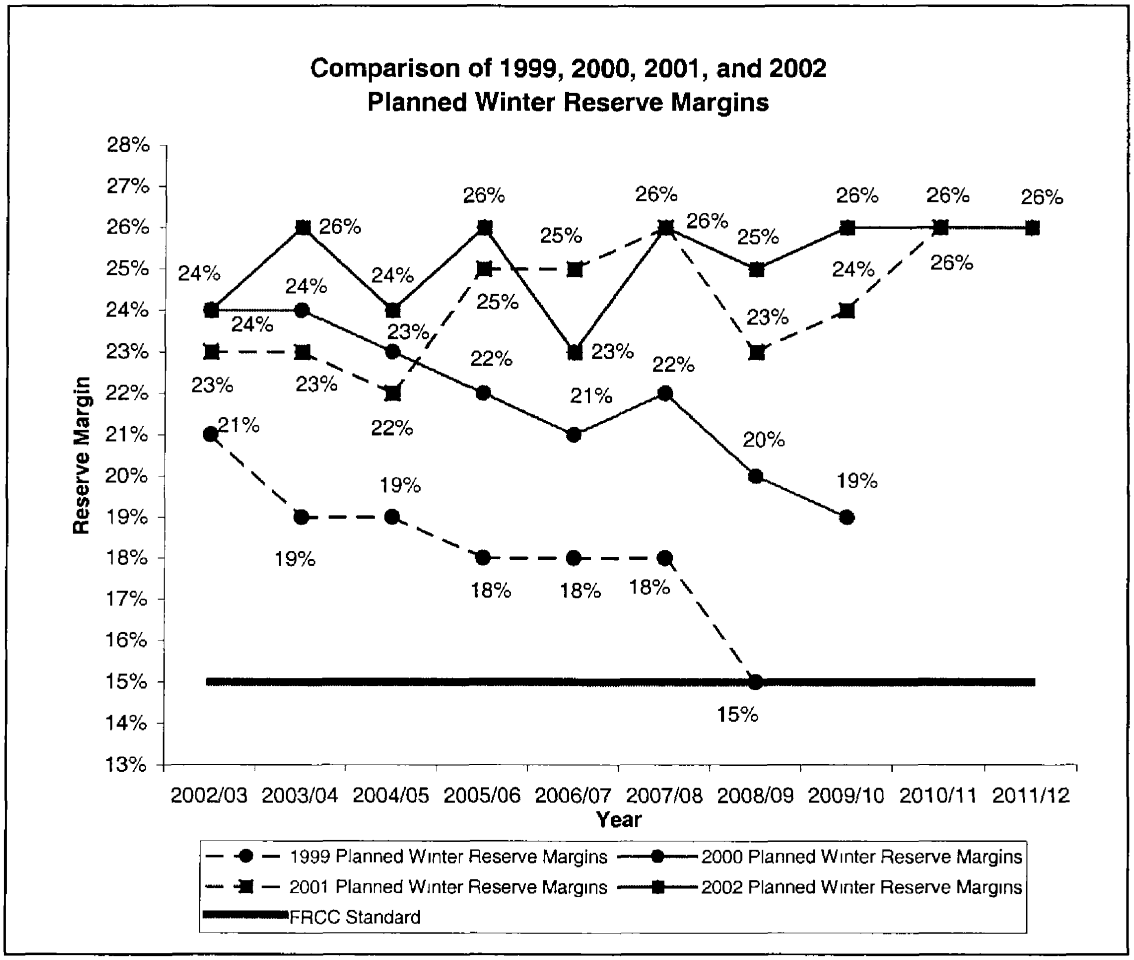

Figure 2

In a similar manner, ***Figure 2*** shows the planned winter reserve margins from the 1999, 2000, 2001, and 2002 Regional Load & Resource Plans. The winter reserve margins in the 2002 Plan are above 20% for every year in the ten year forecast period.

2002 Analysis of Generator Availability & Forced Outage Rate Trends for FRCC Utilities

Introduction

As noted in the FRCC 2001 Reliability Assessment Report, FRCC determined that a LOLP analysis of Peninsular Florida was not needed. However, the RWG believes that it is prudent to perform an alternative analysis to verify their belief that a LOLP analysis is not needed and reserve margin is the appropriate measure. One of the key factors in a LOLP analysis, generating unit forced outage rate (F.O.R.), serves as a good indicator as to whether the LOLP results would remain the same as previous years. In addition, a similar comparison of generating unit availability was performed. Although unit availability values are not directly utilized in LOLP analyses, availability values are commonly used in informal discussions of unit and system reliability levels, and provide some correlation to the F.O.R. values reported.

How the Comparisons Were Performed

Since there are more than one hundred individual generating units in the FRCC Region, a comparison of the utilities' F.O.R. and availability values from different years' planning efforts involves significant amounts of data. A direct comparison of four years' values for each generating unit in the Region would be difficult to use in determining whether the projected F.O.R. and availability values for the Region as a whole were improving, staying the same, or getting worse. This is primarily due to the fact that values for some units may show change in one direction while values for other units may change in the other direction. In addition, the magnitudes of these changes will also likely be different.

In order to make the comparisons meaningful and easy to interpret, a weighted averaging methodology was used for each utility system and for the FRCC Region as a whole. One F.O.R. and one availability value was developed for each utility for each year. Then the overall direction and magnitude of change in F.O.R. and availability for the utility from one year to the next can be easily seen. Then, these utility values can be "rolled up" to create one F.O.R. and one availability value for the FRCC Region for each year. A comparison of these aggregate values then shows the direction and magnitude of change in F.O.R. and availability for the Region as a whole.

The methodology used a two-step approach. The first step developed the utility-specific values and works as follows:

Step 1:

1) For each utility system, each unit's F.O.R. and availability value was listed along with the unit's (Summer) MW rating.
2) All of the MW ratings for the utility's units were summed to provide a total system MW rating.
3) Each unit's F.O.R. value was then multiplied by the unit's own MW rating and divided by the total system MW rating. This produced a MW-weighted F.O.R. value for each unit, which could then be added to the MW-weighted F.O.R. values for all the other units on the system to produce a single MW-weighted F.O.R. value for the utility system as a whole.
4) In a similar fashion, a single availability value was developed which is a composite, MW-weighted value for the entire system.

The following example should help illustrate the technique. Assume a hypothetical utility system has 3 units, which have the following characteristics for a given year:

Unit No.	MW	Unit F.O. R.(%)
1	200	3.5
2	500	5.0
3	300	8.0
	1,000	

A single, MW-weighted F.O.R. value for the utility system as a whole would then be calculated as follows:

- For Unit No. 1, the unit's F.O.R. value of 3.5 is multiplied by (200 MW/1,000 MW) to derive a MW-weighted value of 0.7.
- For Unit No. 2, the unit's F.O.R. value of 5.0 is multiplied by (500 MW/1,000 MW) to derive a MW-weighted value of 2.5.

- For Unit No. 3, the unit's F.O.R. value of 8.0 is multiplied by (300 MW/1,000 MW) to derive a MW-weighted value of 2.4.
- Finally, the three MW-weighted F.O.R. values derived for the individual units are added together to yield a MW-weighted composite F.O.R. value for the utility system as a whole. That value is 0.7 + 2.5 + 2.4 = 5.6.

The listing of unit characteristics for the utility now reads as follows:

Unit No.	MW	Unit F.O.R.(%)	Unit Contribution to System F.O.R.(%)
1	200	3.5	0.7
2	500	5.0	2.5
3	300	8.0	2.4
	1,000		5.6

When viewing the entire utility system, the F.O.R. contribution of a large unit carries more weight than that of a smaller unit. This MW-weighted methodology accounts for this fact as the above example shows.

The MW-weighted composite F.O.R. value of 5.6 in this example represents the MW-weighted average F.O.R. value for the hypothetical utility system as a whole. This value can then be compared to similarly calculated values for other years to see if the F.O.R. for the utility is increasing, decreasing, or staying the same. A comparison of utility system MW-weighted availability can also be done in the same way.

Step 2:

The second step of the two-step process starts once MW-weighted average F.O.R. and availability values for each utility are developed. These utility-specific values are then combined into a Peninsular Florida composite value in much the same way as the utility-specific values themselves were developed. This second step works as follows:

1) The MW-weighted average value for F.O.R. and the utility's total system (Summer) MW rating are listed for each utility system.
2) All of the utility systems' total system MW ratings are summed to provide a total Regional MW rating.
3) Each utility system's MW-weighted average F.O.R. rating was then multiplied by the utility system's own total system MW rating and divided by the total Regional MW rating. This produced a Regional MW-weighted F.O.R. value for the utility system. This value was then added to the Regional MW-weighted F.O.R. value for all other utility systems to produce a single Regional MW-weighted F.O.R. value for the Region as a whole.
4) In a similar fashion, a single Regional MW-weighted availability value was developed which is a composite, Regional MW-weighted value for the entire Region.

This can be demonstrated by continuing the previous example. The hypothetical utility (which will be called "Utility System No. 1") from this example had a MW-weighted F.O.R. value of 5.6 and a total system capacity of 1,000 MW. Now assume that two other utility systems are added to the picture and their MW-weighted F.O.R. and total system capacity values are shown below along with those of Utility System No. 1:

Utility System No.	System Capacity (MW)	Utility System MW-weighted F.O.R. (%)
1	1,000	5.6
2	500	7.5
3	2,000	4.0
	3,500	

A single, Regional MW-weighted F.O.R. value would then be calculated as follows:

- For Utility System No. 1, the utility system's F.O.R. value of 5.6 is multiplied by (1,000 MW /3,500 MW) to derive a Regional MW-weighted value of 1.60.
- For Utility System No. 2, the utility system's F.O.R. value of 7.5 is multiplied by (500 MW/3,500 MW) to derive a Regional MW-weighted value of 1.07.
- For Utility System No. 3, the utility system's F.O.R. value of 4.0 is multiplied by (2,000 MW /3,500 MW) to derive a Regional MW-weighted value of 2.29.
- Finally, these three Regional MW-weighted F.O.R. values derived for the individual utility systems are added together to yield a MW-weighted composite value for the Region as a whole. That value is 1.60 + 1.07 + 2.29 = 4.96.

The listing of system characteristics for the Region would now read as follows:

Utility System No.	System Capacity (MW)	Utility System MW-Weighted F.O.R.(%)	System Contribution to Regional F.O.R.(%)
1	1,000	5.6	1.60
2	500	7.5	1.07
3	2,000	4.0	2.29
	3,500		4.96

As was the case in Step 1, the fact that the F.O.R. contribution from the largest entity (in this case the largest utility system) carries more weight is accounted for by the methodology.

This composite F.O.R. value of 4.96 represents the MW-weighted average F.O.R. value for the Region as a whole. This Regional value can be compared to similarly calculated Regional values for other years to see if the Regional F.O.R. is increasing, decreasing, or staying the same. A comparison of Regional MW-weighted availability can also be done in the same way.

The RWG's Calculations for 2002

The methodology described in the previous section was utilized to develop both yearly MW-weighted F.O.R. and availability values for each utility system. The calculations are based on each utility's latest planning assumptions; i.e., assumptions developed and used in the utility's 2001 resource planning work and which is subsequently reported in the utility's 2002 Ten Year Site Plan. These new F.O.R. and availability values were then compared to the values calculated from previous years' analyses. In this way, F.O.R. and availability projections from planning studies conducted in 1998, 1999, 2000, and 2001 can be compared.

Figure 3 shows that the 2001 projections of F.O.R. for the Region are slightly lower than the 2000 projections for 5 of the 8 years (2005 – 2009) compared. The importance of this is summarized as follows:

If the RWG's 2000 LOLP analysis (which used 1999 F.O.R. values) was re-run with only one change, substituting the 2001-based F.O.R. assumptions for the 1999-based F.O.R. assumptions, the result would be an even <u>lower</u> projection of LOLP for Peninsular Florida. Consequently, the current projection of lower F.O.R. values leads to a conclusion that a new LOLP analysis is not needed in 2002.

Further supporting this conclusion is the fact that the number of new generating units projected to be added has increased in the 2001 projections compared to the 2000 (as well as 1999 and 1998) projections. Assuming all else is equal, a greater number of generating units will also result in lower LOLP projections. Combining the lower F.O.R. projections with the greater number of units leads even more strongly to the conclusion that a LOLP analysis performed this year would almost certainly result in even lower LOLP projections than in the 2000 analysis.

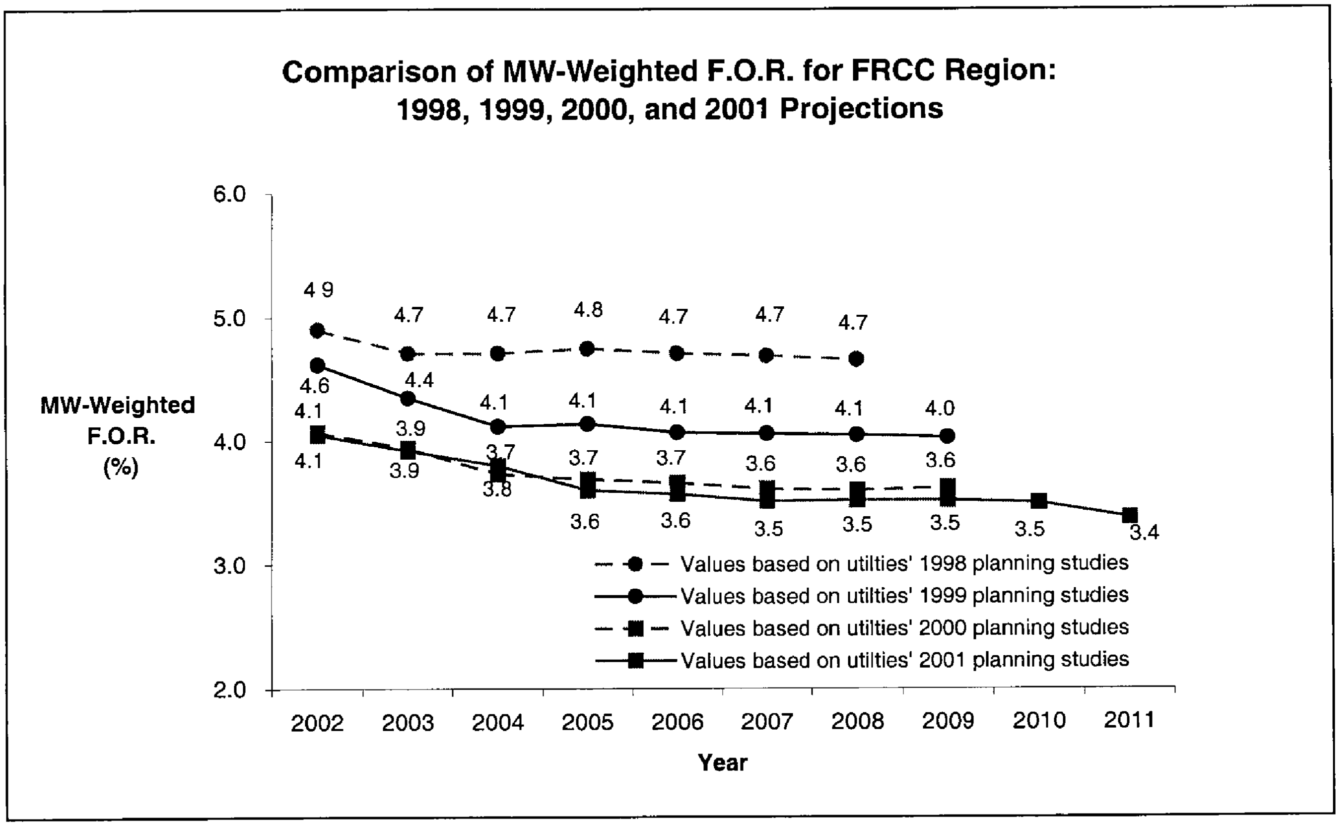

Figure 3

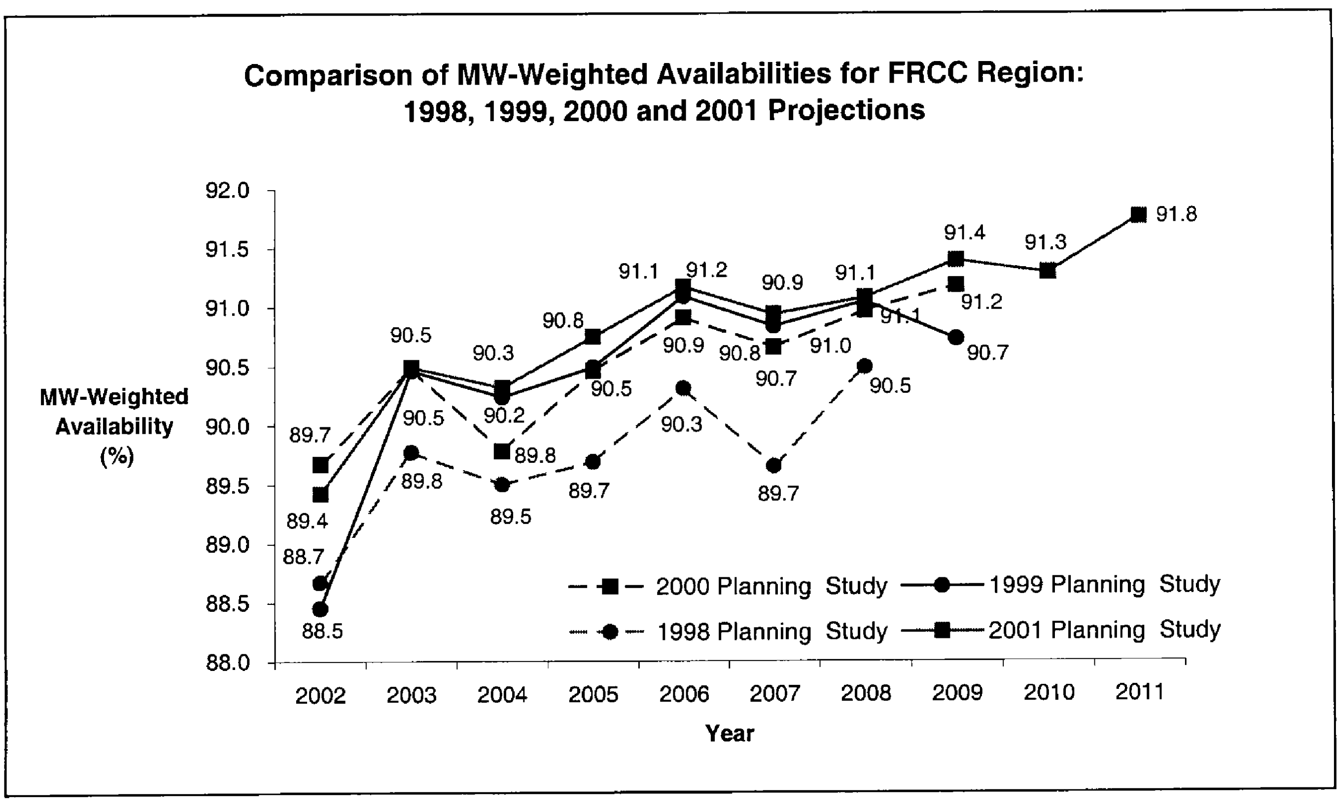

Figure 4

Finally, although generating unit availability is not an input to LOLP calculations, it is often used to provide correlation with other reliability data. ***Figure 4*** shows that projections of unit availability based on 2001 assumptions are generally comparable to the 2000-based availability projections (i.e., slightly higher in most years and slightly lower in one year). The 2001-based availability projections are also consistently higher than the 1999-based availability projections. This is consistent with the results of the comparison of F.O.R. depicted in ***Figure 3*** and supports the conclusion that a new LOLP analysis in 2002 was not necessary.

FRCC Load Forecast Evaluation

The FRCC produces an aggregate ten-year load and resource plan each year which includes summary pages of load forecast, energy forecast, benefit from conservation measures, installed generation, etc. As part of the 2001 reliability assessment process, the FRCC Resource Working Group (RWG) determined that a review of individual members' methods, inputs, and assumptions in developing their own load forecasts was needed. To conduct the 2001 assessment, the FRCC Load Forecasting Task Force (LFTF) reviewed each utility's forecast methodology, input assumptions, and output or forecast results. Then, on the basis of each utility's historical forecast error, sanity checks such as historical versus projected load factors, use per customer, and weather normalization comparisons, the LFTF performed an assessment of the quality of each utility's forecast. In addition, the LFTF reviewed the accuracy of the FRCC aggregate forecast by comparing the forecast to the actual demand for the 1995-2000 timeframe. The result of that analysis showed that load forecast accuracy was high and that FRCC was not consistently under or over forecasting load.

Since the forecast methods have not changed, the RWG determined that the review of the accuracy of the FRCC aggregate forecast should be conducted by adding an additional year of data for 2002. The 2002 FRCC aggregate load forecast has increased since the 2001 forecast. Two major contributors to the increase are updated population data from the 2000 Population Census and updated demographic statistics from the University of Florida's Bureau of Economic and Business Research (BEBR).

COMPARISON OF PRIOR SUMMER PEAK FORECASTS (MW)

Year	Actual Summer Peak (MW)	Regional Load & Resource Plan 1995	1996	1997	1998	1999	2000	2001
1995	31,801	32,397						
1996	32,315	33,172	33,424					
1997	32,924	33,905	34,281	34,566				
1998	37,153	34,712	34,964	35,642	35,633			
1999	37,493	35,311	35,604	36,172	36,628	36,788		
2000	37,379	35,940	36,397	37,079	37,410	37,541	37,728	
2001	38,932	36,604	37,136	37,894	38,220	38,223	38,445	38,478

FORECAST ERROR (PERCENT)

Year	Actual Summer Peak (MW)	FORECAST YEAR 1995	1996	1997	1998	1999	2000	2001
1995	31,801	-1.9%						
1996	32,315	-2.7%	-3.4%					
1997	32,924	-3.0%	-4.1%	-5.0%				
1998	37,153	6.6%	5.9%	4.1%	4.1%			
1999	37,493	5.8%	5.0%	3.5%	2.3%	1.9%		
2000	37,379	3.8%	2.6%	0.8%	-0.1%	-0.4%	-0.9%	
2001	38,932	6.0%	4.6%	2.7%	1.8%	1.8%	1.3%	1.2%

Figure 5

The summer peak analysis, shown in ***Figure 5***, strongly suggests that there is not a tendency to under-forecast or over-forecast. The first column in ***Figure 5***, labeled "Actual Summer Peak (MW)", corresponds to the actual observed summer peak. The next seven columns, show the forecast as it was presented in the Regional Load & Resource Plan for each of the seven years listed from 1995 through 2001. The bottom half of the table is the percent error, derived by comparing actual to forecast demands. A positive forecast error means that the "actual" was larger than the forecasted value for the corresponding year, meaning an under-forecast. A negative forecast error means an over-forecast.

Year	Actual Winter Peak (MW)	Regional Load & Resource Plan 1995	1996	1997	1998	1999	2000	2001
1995/96	34,552	34,518						
1996/97	34,762	35,352	35,946					
1997/98	30,932	36,354	36,721	38,090				
1998/99	35,907	37,149	37,527	39,091	39,450			
1999/00	36,394	38,032	38,359	40,026	40,383	39,989		
2000/01	40,258	38,902	39,212	40,961	41,395	40,928	40,894	
2001/02	39,699	39,710	40,001	41,737	42,219	41,865	41,811	42,208

COMPARISON OF PRIOR WINTER PEAK FORECASTS (MW)

FORECAST ERROR (PERCENT)

Year	Actual Winter Peak (MW)	FORECAST YEAR 1995	1996	1997	1998	1999	2000	2001
1995/96	34,552	0.1%						
1996/97	34,762	-1.7%	-3.4%					
1997/98	30,932	-17.5%	-18.7%	-23.1%				
1998/99	35,907	-3.5%	-4.5%	-8.9%	-9.9%			
1999/00	36,394	-4.5%	-5.4%	-10.0%	-11.0%	-9.9%		
2000/01	40,258	3.4%	2.6%	-1.7%	-2.8%	-1.7%	-1.6%	
2001/02	39,699	0.0%	-0.8%	-5.1%	-6.3%	-5.5%	-5.3%	-6.3%

Figure 6

The analysis of winter peaks, shown in ***Figure 6***, shows a tendency to over-forecast given the predominance of projected winter peaks higher than the observed "actuals". Winter peaks are more volatile than the summer peaks because the state of Florida does not experience cold winters very often. Nevertheless, each utility in its resource plan considers the eventuality of a severe winter peak and plans for it.

Several factors can account for the difference between "actual" and "forecast" (forecast error). These factors center on the conditions that typically lead to short-term deviations that cycle above and below long-term trends. First, extreme weather and temperature variations can differ from the "normalized" weather assumptions used to develop the forecast. Second, unusual economic growth over the short-term can differ from longer-term economic assumptions used to develop the forecast. Stronger near-term economic growth can cause substantial, albeit temporary, departures from long-run patterns.

As a sanity check of the FRCC forecast, a comparison was performed between the historical load factors (for 1991 through 2001), shown in ***Figure 7***, based on the summer peak, with the projected resulting load factors for the next ten years (for 2002 through 2011). The summer peak load was chosen because it is less volatile with respect to the winter peak, which fluctuates widely between historical years due to whether a cold winter occurred.

FRCC LOAD FACTORS
Based on Summer Peak

Year	Load Factor
1991	60.6%
1992	58.3%
1993	58.8%
1994	62.0%
1995	60.7%
1996	61.2%
1997	60.9%
1998	57.7%
1999	57.4%
2000	60.1%
2001	58.7%
2002	58.8%
2003	59.0%
2004	59.4%
2005	59.8%
2006	60.3%
2007	60.5%
2008	60.8%
2009	60.9%
2010	61.0%
2011	60.9%

Figure 7

Both historical and forecast load factors are very similar in magnitude. This provides comfort in knowing that both the average loads and peak loads are growing at a comparable rate. As a result of this evaluation, the FRCC concludes that the load forecast accuracy is sufficient and adequate.

2002 Review of Natural Gas Pipeline Adequacy

The increasing reliance on natural gas as a fuel for both existing and future generation necessitates a review of existing and future natural gas pipelines capability. In 2001, 19% of the energy in the FRCC Region was served by generators using natural gas. In 2002, that percentage is expected to be almost 30%, and, by 2011, it is forecasted that 50% of the energy in the FRCC Region will be served by generators using natural gas as their primary fuel. Both Florida Gas Transmission Company (FGT) and Gulfstream Natural Gas System (Gulfstream) were contacted and requested to provide information on the availability and deliverability of natural gas to peninsular Florida. Letters received from both companies are included in Appendix A.

The review of information from FGT and Gulfstream indicates that FRCC should be in a position to obtain the pipeline capacity needed as new generation that relies more and more on natural gas as the primary fuel is built in peninsular Florida.

Appendix A

Florida Gas Transmission Company
1400 Smith Street, Houston, TX 77002-7361, P.O. Box 1188, Houston, TX 77251-1188

June 25, 2002

Mr. Tom Hallam
Florida Reliability Coordinating Council
1408 N. Westshore Blvd., Suite 1002
Tampa, FL 33607-4512

Dear Mr. Hallam:

Florida Gas Transmission Company is pleased to provide the following information regarding the availability and deliverability of natural gas for electric generation requirements for the period 2002 through 2011.

Our response is provided in five parts: (a) a discussion of FGT firm transportation capacity, (b) a discussion of the expandability of the FGT pipeline system into Florida, (c) information on gas supply, (d) status information on the FGT Phase V and Phase VI expansion projects, and (e) information on FGT system reliability.

FIRM GAS TRANSPORTATION CAPACITY

Florida Gas Transmission Company (FGT) is an open access interstate pipeline company that transports natural gas for third parties from Texas to Florida, with deliveries primarily to the State of Florida. FGT's pipeline system was originally placed in service in 1959. FGT has periodically expanded its system capacity to keep pace with the growth in demand for natural gas in Florida. In July 1987, FGT placed its Phase I Expansion in service, increasing its firm average delivery capacity from 725,000 MMBtu/day to 825,000 MMBtu/day. In December 1991, FGT placed its Phase II Expansion in service, increasing its firm average delivery capacity by 100,000 MMBtu/day to 925,000 MMBtu/day. In March 1995, FGT placed its Phase III Expansion in service, which increased its firm delivery capacity by approximately 530,000 MMBtu/day to a total of 1,455,000 MMBtu/day. FGT's Phase IV Expansion was placed in-service on May 1, 2001 and added approximately 200,000 MMBtu/day of incremental capacity. The first stage of the Phase V expansion was placed in-service April 1, 2002 providing 298,000 MMBtu/day of additional firm transportation capacity. The final stage of the Phase V project is expected to be completed by May 1, 2003. Upon completion, the Phase V expansion project will provide a total of 428,000 MMBtu/day of incremental firm transportation capacity.

FGT's Phase VI expansion project received certificate approval from the Federal Energy Regulatory Commission in June 2002. The Phase VI project target in-service dates are June and November 2003. Upon completion the Phase VI project. FGT will add 121,000 MMBtu/day of incremental firm transportation capacity. Following the Phase VI expansion, FGT will have a delivery capacity of approximately 2,200,000 MMBtu/day into Florida.

FGT's seasonal load profile is the opposite of most interstate pipelines in that its sustained system peak load is in the summer. This is because the electric generation customers in Florida account for approximately 80% of the throughput on FGT's system. They have a seasonal load pattern characterized by higher summer demands due to their air-conditioning load requirements. FGT also transports gas for Florida local distribution companies that have a seasonal load pattern characterized by high demands during the winter due to heating requirements of their residential and small commercial customers. FGT also serves industrial customers in Florida that take gas at fairly constant rates during the year, as well as industrials that take gas on a seasonal basis.

EXPANDABILITY OF FLORIDA GAS TRANSMISSION SYSTEM

At this time, FGT has a pipeline system which is generally comprised of three parallel lines of 24-inch, 30-inch and 36-inch diameters respectively.

When the existing pipeline system reaches a design capacity where the compression installed is balanced with the installed pipeline physical characteristics, our engineers design the next incremental capacity expansion using both additional compression and pipeline looping. Pipeline looping is simply building another pipeline parallel to the existing pipelines for the distance necessary to efficiently increase the capacity to that quantity which fulfills the customers' incremental requirements. For an existing system, such as FGT's, it is necessary to build the pipeline loop only for the distance needed between each compressor station to attain the incremental capacity.

The ability to partially loop existing lines between compressor stations allows FGT the flexibility to design and build only the capacity necessary to meet the market needs at a much lower capital requirement than would be possible if the current pipelines were not in place.

Expansion of FGT's system in Florida can be tailored to meet any size market by partial looping and adding compression. This is an advantage that the existing FGT system has over a new grassroots system. Obviously, some new lateral pipelines will be required to access market areas not now served by the FGT system, and loops or partial loops will be required to serve expanded loads at some existing locations.

As far as the timing for the construction of pipeline expansion facilities is concerned, depending on the scope and design of the expansion project, FGT would estimate up to twenty-four months to obtain all permits, environmental and regulatory approvals, and to complete construction of any pipeline and compression facilities required.

GAS SUPPLY

The production areas that FGT accesses through pipeline interconnections are: Texas Gulf Coast Basin, East Texas Basin, Louisiana Gulf Coast Basin, and Louisiana-Mississippi-Alabama Salt Basins, South Georgia Peninsular Florida Sedimentary Province, which collectively are identified as the Gulf Coast Onshore Region, and the Gulf of Mexico Outer Continental Shelf. According to the 2000 Annual Report on U.S. Crude Oil, Natural Gas, and Liquids Reserves dated December 2001 by the Energy Information Administration (EIA); these areas had total proved reserves of about 66 trillion cubic feet (Tcf) as of December 31, 2000.

In addition, EIA, in its publication U.S. Natural Gas Markets: Mid-Term Prospects for Natural Gas Supply dated December 2001 estimates the unproved, technically recoverable resources for the Gulf Coast Onshore Region to be 188 Tcf and about 176 Tcf for the Gulf of Mexico Outer Continental Shelf. The 176 Tcf estimate assumes the existing moratoria on leasing in the Outer Continental Shelf will continue.

Gulf of Mexico productive capacity is expected to increase significantly over the next few years. New deepwater production is projected to deliver the largest increment of new gas supply for the U.S. over the next 10 years. FGT has access to numerous deepwater supply sources via existing pipeline interconnects.

The FGT supply area extends from South Texas to Alabama and is strategically located to provide access to both offshore and onshore gas supplies. This vast supply area access to numerous offshore and onshore supply basins provides geographical diversity that helps better insulate FGT customers from unexpected shutdowns of gas supply and also allows customers to take advantage of the various supply options and competitive marketplace for the purchase of gas supply.

FGT provides access to onshore gas supply via the following:

- Direct connect plant and production points
- Over 40 interconnections with intrastate and interstate pipelines
- Access to Canadian gas supplies as well as Alaskan gas if developed, via the national pipeline grid

FGT also provides direct access to gas storage facilities in Texas, Louisiana, and Alabama and access to other storage via intrastate and interstate pipeline interconnections

FGT will also be well positioned to provide gas supply access from several proposed liquefied natural gas (LNG) projects. The Cypress Natural Gas Company has proposed a pipeline project which would interconnect with FGT in Clay County, Florida and would provide FGT's customers with access to Southern LNG Company's liquefied natural gas facility near Savannah, Georgia. AES and El Paso Energy have announced proposed Bahamas LNG projects, which could deliver LNG gas supply into South Florida. BP has announced a proposed LNG project in the Tampa Bay port area. These potential LNG gas supply sources can provide the Florida market additional supply diversity and reliability.

Two pipeline interconnects with Gulfstream Natural Gas System, LLC are planned at this time. The Gulfstream interconnects in Hardee and Osceola counties will provide FGT shippers another gas supply alternative.

PHASE V EXPANSION

The first stage of the Phase V expansion project was placed in-service April 1, 2002, providing 298,000 MMBtu/day of incremental pipeline capacity. The final stage has a target in-services date of May 1, 2003. Upon completion, the Phase V project will add a total of 428,000 MMBtu/day of incremental firm transportation capacity.

PHASE VI EXPANSION

FGT's Phase VI expansion project received a certificate from the Federal Energy Regulatory Commission in June 2002. FGT plans to commence construction later this year. The target in-service dates for the staged Phase VI expansion are June and November 2003. Upon completion, the Phase VI project will add 121,000 MMBtu/day of incremental pipeline capacity.

SYSTEM RELIABILTY

FGT has an excellent reliability record and has several features, which enhance operational reliability. FGT has multiple mainlines which run from the Supply Area in Louisiana, Mississippi, and Alabama to South Florida. Over 99% of the approximately 4,800 miles of pipeline on the FGT system is buried underground. At the compressor stations FGT has multiple compressor units, which allow FGT to take individual units in and out of service without affecting our ability to meet market service requirements. In addition, the design of the FGT system provides a market area grid which increases reliability by providing alternate routes in the event of an emergency. And finally, FGT's vast supply area access provides geographical diversity that helps insulate customers from catastrophes such as hurricanes and other unexpected shutdowns of gas supply.

CONCLUDING REMARKS

FGT is well positioned for future pipeline expansions. Given the infrastructure we have in place we are able to expand our system primarily through the addition of pipeline looping and the addition of compression at existing compressor station sites. This is an economical and timely way to bring incremental gas supplies to Florida, and minimizes the impact on land use and the environment.

FGT's expansion strategy is to construct smaller expansions, which closely match market demand, and to work closely with existing customers to facilitate capacity release transactions where market needs have decreased.

The location of FGT's pipeline system affords it an excellent opportunity to connect new reserves discovered anywhere in the onshore and offshore Gulf Coast areas to meet the future gas requirements of the State of Florida on a timely and competitive basis.

Please call me at (713) 853-3162 if you have any questions or desire additional information.

Sincerely,

R. E. Hayes
Sr. Vice President, Marketing

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FIRM GAS TRANSPORTATION CAPACITY BEGINNING 2002

Gulfstream Natural Gas System, L.L.C. (Gulfstream) is an open access interstate pipeline company that transports natural gas for third parties from Alabama and Mississippi to Florida. Gulfstream was built to service the growth in demand for natural gas in Florida with over 1 Bcfd of new firm delivery capacity and was placed into service on May 28, 2002.

The seasonal load profiles of the electric generation customers in Florida are skewed to peak loads in the summer. The higher demand in the summer is mainly due to extensive air-conditioning load requirements. Somewhat smaller demands for residential heating and commercial customers occur in the winter while industrial loads may require gas year-round or on a seasonal basis.

THE GULFSTREAM PIPELINE SYSTEM

Gulfstream's pipeline system is comprised of compression facilities and a large capacity pipeline of varying diameters. The compression facilities, consisting of three (3) 300,000 HP compressor units (2 operating, 1 stand-by), are located in Coden, Alabama. Feeding this compressor station are tie-ins from 4 gas processing plants and 2 additional interstate pipelines. Receipt point capacity totals 2.15 Bcfd, approximately twice the mainline throughput capacity. A 36-inch mainline feeds the compressor station from an interconnect with the Destin pipeline/gas processing plant located in Pascagoula, Mississippi. From the compressor station in Coden, Alabama, the 36-inch mainline traverses the Gulf of Mexico to its landing point at Port Manatee in Manatee County, Florida. The Gulfstream pipeline system is being built with the capability to serve the significant hourly swing flexibility that electric generating loads require.

EXPANDABILITY OF GULFSTREAM NATURAL GAS SYSTEM

Gulfstream has firm capacity available today to meet the needs of Florida generators and other markets. The Gulfstream pipeline system will be expanded as needed to economically service the future needs of Florida's markets. Receipt point capacity will be added as new receipt points and access to increased production takes place. Expansion projects may include new laterals, looping, and/or compression to meet future market growth. Timing of all future expansion projects will incorporate acquisition of appropriate permits, environmental and regulatory authorizations prior to construction.

GAS SUPPLY

The Gulfstream pipeline system accesses the vast supply from numerous supply basins in the Gulf of Mexico and throughout North America through interconnect with other interstate pipelines. Along the Gulf Coast alone, production has risen approximately 3 Bcfd since 1986 to approximately 27 Bcfd. Specific to offshore Mobile Bay and east Louisiana, production rates have risen by 2 Bcfd since 1991. In this region, an incremental increase between 1 to 1.5 Bcfd is anticipated over the next 5 years. Gulfstream anticipates being able to access over 22 Tcf of gas reserves from the Gulf of Mexico over at last the next 20 years. Successful deepwater development could potentially amplify and extend these reserves significantly.