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March 24, 1999

BY HAND DELIVERY

Ms. Blanca S. Bayo, Director
Division of Records and Reporting
Florida Public Service Commission
2540 Shumard Oak Boulevard
Tallahassee, Florida 32399-0850

Re: Undocketed: Review of Regulated Utilities Year 2000 Preparations and Readiness (Electric and Gas)

Dear Ms. Bayo:

Enclosed for filing are fifteen (15) copies of Tampa Electric Company's and Peoples Gas' Responses to the list of Issues attached to the Notice of Workshop in the above matter.

Please acknowledge receipt and filing of the above by stamping the duplicate copy of this letter and returning the same to this writer.

Thank you for your assistance in this matter.

Sincerely,

James D. Beasley

ACK
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APP
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CMU ~~JDB~~/bjd
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Florida Public Service Commission
Year 2000 Readiness Workshop Questions

Tampa Electric Company & Peoples Gas

March 24, 1999

1. Has your utility bifurcated its Year 2000 remediation efforts between "mission critical" and "important" systems?

Tampa Electric and Peoples Gas have identified systems in each portfolio considered to be "mission critical", that is, critical to the production, transmission, and distribution of energy, and the continued economic viability of the company. We have not used the "important" label in our program. All systems, "mission critical" and "non-mission critical" systems have been included in the scope of the Year 2000 project and have been inventoried and assessed to determine their Year 2000 impact. Based on the impact assessment, renovation is completed on all "mission critical" and "non-mission critical" systems which have impact on the business.

2. If your utility has bifurcated its remediation efforts, what functions (e.g., safety, generation, customer billing, accounting, payroll) make up the "mission critical" category? What functions make up the "important" category? Please describe how you distinguish between "mission critical" and "important" systems.

Tampa Electric and Peoples Gas have included all systems in the scope of the Year 2000 project, and have not split remediation efforts into "mission critical" or other categories. Functions where one or more systems are considered "mission critical" are: Energy Supply (generation control systems), Energy Delivery (electric and gas transmission and distribution control systems), Energy Services (Customer billing and call center operations), Finance (general ledger, accounts payable and payroll), and Telecommunications.

3. Has your utility prioritized its "mission critical" systems? If so, please provide the priority listing.

We have not prioritized the items within the mission critical category. However, items in this category, collectively, have a higher priority than other systems. Customer Information, Energy Management and Control, generation control systems and corporate business systems are among those in the mission critical category.

4. What method are you using to test your mainframe computers? Please describe this method.

Approach: *Tampa Electric and Peoples Gas have used a risk-based approach to prioritize Year 2000 testing efforts, and to determine the degree of testing required. Power generation and delivery systems have been given the highest priority, along with key business systems, such as customer information, financial and telecommunication systems. Following renovation, each system undergoes functional, acceptance and integrated future date testing as follows. Where renovation is not required, only integrated future date testing is performed.*

- ***Functional or Unit Testing*** *- Functional tests are designed to ensure that the performance of the system has not been affected by Year 2000 renovation. They are conducted using current dates. Operation and output of the renovated application and unchanged application are compared to identify problem areas. Typically, these tests are conducted by those completing the renovation work, which has largely been done under contract for our project.*
- ***Acceptance Testing*** *- Acceptance tests are similar to the functional tests, but are conducted by the Company's business and technical employees. Once these tests are complete, the application is placed into "production" use.*
- ***Integrated, Future Date Testing*** *- These tests are designed to ensure that the application functions correctly after the turn of the century, and in some cases on application specific dates in 1999. These tests are executed by forward dating program input to key transition dates and times. The operating system and hardware dates are set forward by the same time increment. Where possible, these tests include all interfaced systems as well and may also be referred to as "end to end" tests. Done correctly, this often requires a separate, mirror image of the production environment. In this way, an integrated test of the application, interfaces, the operating system(s) and hardware is achieved. As with functional testing, operation and output of the forward dated application is compared to expected results to identify problem areas.*

In the Energy Control unit of Energy Delivery, the Energy Management System vendor, 13 other utilities with identical software (including FP&L), and Tampa Electric (TEC) have formed a consortium and are all conducting extensive tests of these systems. Here at TEC, the software was tested on our stand-alone disaster recovery system, including all functions and our on-line remote terminal units in substations and the power plants. Then, we tested the software on our development system, which is identical to the production hardware before placing it into production use.

5. What systems do you have running on mainframe computers?

Virtually all of our computing relies in whole or in part on mainframe class systems. Examples of the more significant systems include:

- *Financial: Accounts Payable, Account Validation, Accounts Receivable, Budget, Corporate Records Management, Customer Information and Billing Systems, Check Reconciliation, Fixed Assets, General Ledger, Materials Management/Procurement, Payroll, Human Resources, and Meter Reading. These applications run on the corporate mainframe computer located at our YBOR Data Center.*
- *Energy Delivery: Facilities Information, Trouble Analysis and Work Management. These applications run on the corporate mainframe computer located at our YBOR Data Center.*
- *Energy Control: Energy Management (SCADA, AGC and Dispatch). These applications run on the Energy Control mainframe computer located at our Energy Control Center (ECC).*
- *Energy Supply: Data Acquisition and Monitoring, Fuels, Generation Availability and Work Management. These computers are located in the power plants.*
- *Energy Services: Energy Conservation, Customer Information and Billing Systems. These are located at our YBOR Data Center.*

6. What "mission critical" systems are not run on mainframe computers?

As stated above, virtually all of our computing relies in whole or in part on mainframe class systems. The Load Management system for Tampa Electric Company is one example of a mission critical system that does not run on a mainframe computer.

7. What systems have you found that contain date-sensitive embedded chips?

Tampa Electric Company generation - Distributed control systems on several generating units make use of what might be considered "embedded chips" to perform certain functions. Firmware revisions have been required.
Electric Company Mobile dispatch - The remote terminals are date sensitive only on roll over to 2000. As a result, we will restart these units, entering Year 2000 dates, after which all other dates work fine.
Peoples Gas - The gas company uses date sensitive, electronic flow correctors in metering roughly 250 large volume customers.

8. Are embedded chips being tested both as a stand-alone device and as part of an integrated system? If not, why?

Where possible, systems are first tested at the component level and then as an integrated system. Many embedded systems can only be tested through integrated system testing.

9. Are all "mission critical" related mainframe computers, PC computers, and embedded chips being tested notwithstanding any vendor's or manufacturer's claim that the device is year 2000 compliant? If not, why?

Yes.

10. Are you conducting sampling tests instead of testing all of your systems? If you are conducting sampling tests, please describe the methodology you are using and explain how and why you selected this methodology.

We are fortunate to have had a material standards function in place for many years, thereby minimizing the number of different suppliers and models of discrete systems. As previously stated, Tampa Electric and Peoples Gas have used a risk-based approach to prioritize Year 2000 testing efforts, including sample testing. While the method of sample selection may differ slightly as appropriate, typically the sample is selected such that each unique (based on manufacturer, model, vintage, etc…) device is selected.

11. What precautions are you taking to ensure that "mission critical" communications links are not interrupted? Will these precautions be detailed in your contingency plan?

Tampa Electric Company has its own private communications network which serves 75% of Tampa Electric Company's total telecommunications requirements. Ninety-eight percent of Tampa Electric's data acquisition and control systems are served by this same network. Company employees have assessed the impact on the network components, remediated, upgraded or replaced them as required and have substantially completed testing.

Peoples Gas depends almost entirely on external telecommunication service providers. Where either company is dependent on external providers, we are ascertaining their readiness and coordinating tests to the extent possible. Our contingency plans include the use of satellite phones and our internal radio systems.

12. What dates, in addition to the millennium rollover, are being tested? Why?

Typically, the following dates are used, with others used as application specific criteria require.

- *12/31/1999 to 01/01/2000. Rollover to the Year 2000.*
- *01/00/2000 An invalid date.*
- *02/28/2000 to 02/29/2000 Leap year.*
- *02/29/2000 to 03/01/2000 Must roll correctly from the leap day.*
- *12/31/2000 to 01/01/2001 Rollover to the Year 2001.*
- *02/28/2000 to 03/01/2001 Not a leap year.*

13. Has your utility conducted or scheduled any contingency drills? If so, please indicate the purpose of each drill.

We are fully participating in the inter-company contingency planning process and exercises being coordinated by the Florida Regional Coordinating Council (FRCC) under guidelines set forth by the North American Electric Reliability Council (NERC). Additionally, we are participating in local emergency management planning with City and County officials. We also intend to test our internal contingency plans. These tests are tentatively scheduled following completion of our contingency plan.

14. What "mission critical" systems and locations will be manned during the millennium rollover? Will these assignments be detailed in your contingency plan?

Contingency plans include on-site and on-call support during critical

dates at generation facilities, our Energy Control Center, the YBOR Data Center, the Customer call center and critical electric and gas distribution facilities.

15. What is your company's internal deadline for testing and remediating the following:

1) mainframe computers?
2) PC computers?
3) embedded chips on a system integration basis?

We expect to complete renovation and testing of our mission critical systems by June of 1999.

16. What tests are you conducting to ensure that "non-mission critical" operations, which may not be Year 2000 compliant, will not inadvertently affect "mission critical" operations?

Our categorization of "mission critical" systems includes peripheral or ancillary systems required to sustain mission critical operations. As a result, our work in system testing and contingency planning is inclusive of many systems that, if viewed independently might be classified as "non-mission critical."

~~17. For Florida Power & Light and Florida Power Corporation:~~

~~Please describe the Nuclear Regulatory Commission's requirements to ensure nuclear power plants are Year 2000 compliant. What steps is your company taking to ensure its nuclear power plants will be Year 2000 compliant?~~

18. For natural gas distribution utilities:
Is your natural gas distribution system SCADA-controlled? If so, can any embedded chip not Year 2000 compliant send an erroneous signal that can lead to an interruption in natural gas delivery?

Peoples Gas' SCADA systems are used primarily to monitor field measurements. There is only one automatically controlled flow point, which will have on-site support during the Year 2000 rollover. We are not aware of any embedded chip that can interrupt the Peoples Gas distribution system.