

FEDERAL ENERGY REGULATORY COMMISSION
WASHINGTON, D.C. 20426

In Reply Refer To:
Office of Enforcement
Entergy Services, Inc.
Docket No. PA10-1-000
October 29, 2010

Entergy Services, Inc.
Attention: Walter C. Ferguson
Vice President - System Regulatory Affairs
639 Loyola Avenue
New Orleans, LA 70113

Dear Mr. Ferguson:

1. The Division of Audits within the Office of Enforcement (OE), with the assistance of staff from the Office of Electric Reliability (OER) (collectively Audits), has completed the audit of Entergy Services, Inc. (Entergy) for the period of April 1, 2006 to July 19, 2010.
2. The objective of the audit was to evaluate Entergy's: (1) compliance with the requirements in its Open Access Transmission Tariff (OATT); (2) practices related to the Bulk Power System planning and operations; and (3) other obligations and responsibilities as approved by the Commission. The enclosed audit report explains our findings and recommendations. Also enclosed are Entergy's October 22, 2010 Response to the draft audit report and Audit's comments to the Entergy Response.
3. In its October 22, 2010 response, Entergy agrees, in whole or in part, with all 32 recommendations of the Audit Report. Although Entergy disagrees with many factual findings, it "does not believe that it would be productive to litigate them given that Entergy has agreed to adopt all of Audit Staff's recommendations."¹ I hereby approve the recommended corrective actions.
4. The Commission delegated the authority to act on this matter to the Director of OE under 18 C.F.R. § 375.311 (2010). This letter order constitutes

¹ Entergy Response at 2.

final agency action. Entergy may file a request for rehearing with the Commission within 30 days of the date of this order under 18 C.F.R. § 385.713 (2010).

5. This letter order is without prejudice to the Commission's right to require hereafter any adjustments it may consider proper based on additional information that may come to its attention. In addition, any instance of non-compliance not addressed herein or that may occur in the future may also be subject to investigation and appropriate remedies.

6. I appreciate the courtesies extended to Audits. If you have any questions, please contact Mr. Bryan K. Craig, Director and Chief Accountant, Division of Audits, at (202) 502-8741.

Sincerely,

Norman C. Bay
Director
Office of Enforcement

Enclosures



Federal Energy Regulatory Commission

Audit of
Entergy Services, Inc.
to evaluate the following:

- Practices related to Bulk Electric System planning and operations;
- Compliance with the requirements contained within its Open Access Transmission Tariff; and
- Other obligations and responsibilities approved by the Commission.

AUDIT REPORT

Docket No. PA10-1-000
October 29, 2010

Office of Enforcement
Division of Audits

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I. Executive Summary

A. Overview

The Division of Audits within the Office of Enforcement (OE) and the Division of Compliance within the Office of Electric Reliability (OER) have completed an audit of Entergy Services, Inc. (Entergy). The audit was initiated to evaluate Entergy's: (1) compliance with the requirements contained within its Open Access Transmission Tariff (OATT); (2) practices related to Bulk Power System (BPS) planning and operations; and (3) other obligations and responsibilities as approved by the Commission. The audit covered the period from April 1, 2006 to July 19, 2010.

Audit staff found that Entergy had some problems administering its OATT. Although Entergy has taken steps to address their quality control process and procedures, it continues to experience Available Flowgate Capacity-related and other data errors on its transmission system prior to and subsequent to the initiation of this audit. Audit staff believes that there is room for improvement of the process, particularly if the ability of the Independent Coordinator of Transmission (ICT) to increase its involvement can be achieved. Also, audit staff noted that Entergy incurred significant delays, costs, and problems implementing the Weekly Procurement Process (WPP). Other OATT issues involved limited infractions related to the improper use by Entergy of secondary network service and the reassignment of transmission capacity. In addition, audit staff found that certain Entergy employees responsible for important reliability responsibilities were unaware of NERC alerts.

Audit staff believes (1) the AFC-related and other data errors have frustrated and hindered equal access to Entergy's transmission system and (2) Entergy's implementation of the WPP, among other things, restricted third-parties ability to serve Entergy's load. If the ICT had more ability to administer Entergy's OATT, many of these issues would have been handled independently and more effectively and efficiently. There are also areas in which increasing the ICT's authority would enhance their perceived, as well as actual, independence and enhance the confidence of the market participants. Further, audit staff believes that Entergy could engage in more proactive compliance in assuring the reliable operations of the BPS by paying increased attention to NERC alerts and taking appropriate actions based on the alerts. These audit findings and recommended solutions are summarized in Sections H and I below and in full in Parts IV and V of this report.

B. Independent Coordinator of Transmission

In an April 24, 2006 order in Docket No. ER05-1065, the Commission conditionally approved Entergy's creation of an Independent Coordinator of Transmission (ICT), and the designation of the Southwest Power Pool (SPP) as the ICT,

and laid out the responsibilities for both Entergy and the ICT as to this arrangement.¹ The ICT was designed to manage the Entergy OATT and to serve as an independent granter of access to Entergy's transmission system under the OATT. Also, Entergy's ICT proposal was intended to improve transparency of transmission information.²

The ICT also is registered for, and performs the functions of, the Reliability Coordinator (RC) for the Entergy transmission grid. As the RC, the ICT oversees Entergy's performance of its registered reliability functions. Consequently, the audit staff also discussed the role of the ICT in areas concerning reliability, including the way in which transmission planning is performed and information flows from Entergy to the RC function.

This audit did not specifically assess the performance of the ICT as to its Commission-approved duties and responsibilities. Because the ICT performs important duties and responsibilities in the operations of the Weekly Procurement Process and Available Flowgate Capability, audit staff met with the ICT on several occasions and requested information from it as part of evaluating Entergy's compliance with its OATT and the Commission's regulations.

C. Weekly Procurement Process

In approving Entergy's Weekly Procurement Process (WPP), the Commission noted that the WPP is designed to allow merchant generation and other wholesale suppliers to compete to serve Entergy's native load customers.³ The Commission determined that the WPP proposed by Entergy appeared, on a conceptual level, to be adequately structured to meet these objectives.⁴ The Commission found that the WPP is sufficiently transparent and said that its approval of the entire package of the Independent Coordinator of Transmission (ICT), the WPP, and Entergy's pricing proposal was based in large part on Entergy's representations of the substantial benefits of the WPP.⁵

¹ *Entergy Services, Inc.*, 115 FERC ¶ 61,095 (2006) (Order Conditionally Approving ICT).

² *Id.* at P 3.

³ *Id.* at P 246.

⁴ *Id.* at P 290.

⁵ *Id.* at PP 292 and 296.

In its orders approving Entergy's WPP, the Commission explained that the WPP would be operated out of Entergy's Weekly Operations business unit, which is part of Entergy's transmission organization. Attachment V of Entergy's OATT, which governs the WPP, provides that the Weekly Operations business unit will operate the WPP under ICT oversight and provide the results of the WPP to the ICT as requests for the designation of new Network Resources under the OATT. Attachment V also provides the conditions governing the granting of transmission service by the ICT.

D. Available Flowgate Capability

During the audit period, the ICT used Entergy's Available Flowgate Capability (AFC) methodology to grant and deny transmission service requests, implement Transmission Loading Relief, and evaluate and select Weekly Procurement Process (WPP) bid offers and grant the requisite transmission service, based on models and data inputs provided by Entergy. Attachment C of Entergy's OATT governs the AFC process used to determine the amount of transmission capacity available on Entergy's transmission system.

Attachment S of Entergy's OATT outlines the division of responsibilities between Entergy and the ICT in calculating AFC values. The Commission's order approving Entergy's ICT proposal stated that the Commission would evaluate the relative accuracy of AFC data before and after the ICT as one element of determining the success of the ICT in performing its duties and enhancing transmission access.⁶ Before the start of the ICT, Entergy's data retention system failed, which led to the loss of nine months of data in 2005.⁷ The Commission proposed in response that users of Entergy's transmission and data systems form a Users Group to assess how these systems were performing. The Commission directed the ICT and Users Group to annually review error rates associated with Entergy's data, posts, complaints, and resolutions associated with Entergy's data systems on Entergy's Open Access Same-time Information System (OASIS). The Commission required Entergy to notify the Commission, the ICT, and Users Group within 15 days after it discovers it has lost data, reported inaccurate data, or otherwise believes that it has mismanaged data.⁸

⁶ *Id.* at P 303.

⁷ *Id.* at P 109.

⁸ *Id.* at P 110.

E. Entergy-Regional State Committee

Local regulators⁹ have created a collective forum to address mutual concerns as to Entergy's transmission operations and planning, and to facilitate the participation of other stakeholders. This forum, the Entergy-Regional State Committee (E-RSC), is patterned after a similar oversight body in the SPP Regional Transmission Organization (RTO) region. As stated in its bylaws, approved December 16, 2009, the purpose of the E-RSC is as follows:

The E-RSC shall provide collective state regulatory agency input on the operations of and upgrades to the Entergy Transmission System (ETS) including without limitation, issues relating to the operations and functions of the Entergy region Independent Coordinator of Transmission ("ICT") and ICT committees, working groups and task forces. As used in these Bylaws, the term "state" shall include the City of New Orleans and the term "state regulatory agency" shall include the Council of the City of New Orleans. Such input and participation shall include but not be limited to: the differences between the ICT Base Plan and the Entergy Construction Plan, the need for executed seams agreements between Entergy and the surrounding transmission systems and regional transmission organizations (RTOs), appropriate mechanisms to increase the amount of transmission built, cost allocation methodologies, and any regional Cost Benefit Analysis relating to the ETS, whether future changes to the ICT arrangement are necessary and whether Entergy should join an RTO.

As indicated, the E-RSC was formed to consider enhanced ways in which the ICT might continue its oversight of Entergy's transmission grid in the future, and in currently undertaking a study to make such recommendations. In addition, the E-RSC is also considering the broader perspective of the costs and future benefits of including the Entergy transmission system within an RTO.

F. Mandatory Reliability Standards

Pursuant to section 215 of the Federal Power Act, on March 16, 2007, the Commission approved Order No. 693 which established mandatory Reliability Standards for all users, owners and operators of the Bulk Power System (BPS) in the United States. The first Reliability Standards approved in Order No. 693 became mandatory and

⁹ These regulators include; Council of the City of New Orleans (City of New Orleans), the Arkansas Public Service Commission (Arkansas Commission), the Public Utility Commission of Texas (Texas Commission), the Louisiana Public Service Commission (Louisiana Commission), the Mississippi Public Service Commission (Mississippi Commission).

enforceable on June 18, 2007. Reliability Standards establish requirements to provide for the reliable operation of existing BPS facilities, including cyber security protection, and the design of planned additions or modifications to such facilities to the extent necessary to provide for Reliable Operation of the BPS.

Reliability concerns in the Entergy region arose as a result of a May 2009 joint filing by Entergy and the ICT. This filing raised questions regarding Entergy's interpretation and implementation of a number of Reliability Standards. In the May 2009 filing, Entergy and the Independent Coordinator of Transmission (ICT), Southwest Power Pool (SPP) jointly submitted to the Commission and Arkansas state regulators a report detailing the differences between plans that represent the set of transmission upgrades that Entergy and the ICT believe are required to be implemented in order to meet Entergy's Planning Criteria and the Commission-approved transmission planning (*i.e.*, TPL) Reliability Standards.¹⁰ The joint filing detailed twenty projects included in the ICT's Base Plan that were not included in Entergy's construction plan. These differences in understanding and applying a number of Reliability Standards related to Entergy's planning and operation of the BPS.

G. Summary of Audit Staff's Findings

1. Open Access Transmission Tariff

As discussed in detail in the Findings and Recommendation section below (Section IV), audit staff found areas of noncompliance with, and concerns regarding, Entergy's Open Access Transmission Tariff (OATT) requirements. These related to the (1) AFC calculations, reporting, and quality control procedures, (2) cost of developing the WPP, (3) WPP flexibility calculation and quality control procedures, (4) use of secondary network service, and (5) reporting of capacity reassignments. Specifically, audit staff's findings are summarized below:

Available Flowgate Capability-related Errors on Entergy's System - Audit staff found that Entergy had a long history of experiencing AFC-related errors on its transmission system. Although Entergy has taken steps to address this issue audit staff noted that these errors continued during the period covered by this audit. Also, Entergy failed to (1) report 20 AFC-related errors to the Commission and thereby failed to (2) report such errors to the Commission within 15 days of discovering the error, as required by the Commission's order approving the ICT.¹¹

¹⁰ The 2009 ICT Base Plan and the 2009-2011 Entergy Construction Plan (Differences Report) was submitted in Docket No. ER05-1065-000 on May 8, 2009.

¹¹ Order Conditionally Approving ICT at P 110.

In addition, audit staff believes that for many of those error reports that Entergy did file with the Commission, Entergy did not include sufficient information to make fulfill the purpose for which the Commission intended them to be filed (*i.e.*, transparency to the users). Audit staff believes that the reporting made in some instances did not achieve the intended purpose of the reporting requirement. For example, Entergy filed error reports which lacked the necessary transparency and the detail needed for stakeholders to make informed decisions about AFC-related errors and did not provide data on the harm or potential harm resulting from AFC-related errors.

Available Flowgate Capability Quality Control - Entergy's quality control policies and procedures to ensure the accuracy of its data, including the data inputs for the AFC, are inadequate to prevent errors and need to be strengthened. While Entergy had AFC quality control procedures in place to monitor the accuracy of AFC data inputs, it failed to perform these quality control checks for 20 days during the audit period.

Developing the Weekly Procurement Process - Entergy experienced significant delays in developing the WPP. Prior to its initial implementation the software went through over 75 versions. This resulted in significant delays with the implementation of the WPP. In addition to the delays, the WPP, as implemented, does not include all of the operational functionality initially proposed and approved, such as the ability to handle off-peak bids and point-to-point (PTP) transmission service. In addition the model requires significantly more manual intervention than originally had been envisioned. Audit staff also noted that: (1) the cost of developing and implementing the WPP greatly exceeded the amounts initially budgeted for this project, and such cost overruns were caused by the protracted development period; (2) Entergy improperly capitalized payroll and employee benefit and expenses that should have been expensed rather than capitalized because they are unrelated to the development of the WPP; (3) Entergy capitalized certain legal costs and other costs for services provided by SPP that should have been expenses rather than capitalized because they are unrelated to the development of the WPP; (4) Entergy assigned transmission-related construction overhead to the WPP project without establishing a direct relationship to the project; and (5) Entergy improperly accrued an Allowance for Funds Used During Construction (AFUDC) on costs improperly capitalized. These circumstances hindered audit staff's ability to determine whether the costs were properly assigned to the WPP project and accounted for in accordance with the Commission's Uniform System of Accounts.

Accuracy of Modeling Flexibility in the Weekly Procurement Process Model - The level of flexibility has been overstated (*i.e.*, beyond what is necessary to ensure low-cost reliable service to Entergy's native load) in the model used in the Weekly

Procurement Process (WPP). Specifically, the flexibility constraint used in modeling the WPP was overstated by 600 megawatts for the period of June 20, 2009 to October 10, 2009 due to an error in the model input data provided by Entergy. Additionally, there are indications that the manner in which flexibility is modeled has errors beyond the impact of this 600 megawatt overstatement. Since the level of flexibility has a direct effect on the success of the model, the manner in which flexibility is modeled may have restricted competition by limiting third parties' ability to compete to serve Entergy's native load.

Accuracy and Evaluation of the Weekly Procurement Process Results - The WPP model contained a bias in logic for at least the period from March 23, 2009 to September 2, 2009 that may have caused the results of the WPP to be inaccurate. The logic bias existed in the model's complex process of properly evaluating and integrating bid cost structure into the WPP model and became a difficult problem to resolve. Entergy became aware of this bias as early as September 2008¹² but failed to adequately address the issue until the ICT formally requested the model logic be tested and verified in August 2009. Entergy and the ICT implemented an interim process on September 2, 2009 and deployed a permanent software fix on November 18, 2009.

Use of Secondary Network Service - Entergy's marketing function improperly used secondary network transmission service eight times instead of point-to-point transmission service to support off-system sales during this audit.

Reporting of Transmission Capacity Reassignment - Entergy did not report 12 reassignments of transmission capacity in its Electric Quarterly Report (EQR) filings to the Commission. Further, Entergy did not report accurate information for 30 reassignments in its EQR filings.

2. Areas of Reliability Concern

As discussed in detail in the Areas of Reliability Concern section below (Section V), audit staff found two areas of concern regarding Entergy's practices related to Bulk Power System (BPS) planning and operations. Specifically, audit staff's concerns are summarized below:

Interruption of Non-Consequential Load in Response to Single Contingency Events - Audit staff found that in planning its system to respond to a single

¹² Based upon a confidential risk assessment performed by a team of Entergy's consultants, audit staff believes that this bias has been known by Entergy since September 2008.

contingency event, Entergy currently relies on curtailment of load that is not directly served by elements that are removed from service as a result of the single contingency.

Evaluation of Protection System Non-Operation for Single Contingency Events - In its planning assessments, Entergy includes in its base case studies the effects of proper operation of existing and planned primary protection that may be activated in response to a single contingency event. However, it does not currently perform a study that takes into account the effect of backup or redundant protection systems that may be activated at the instant of a single contingency event, particularly if a single point of failure exists that could disable the primary and backup protection systems.

H. Other Matters

As discussed in detail in the Other Matters section below (Section VI), audit staff identified two areas of interest that are summarized below:

Qualifying Facilities - The large amounts of unscheduled injections of qualifying facility power (QF puts) create operational issues that impact transmission access in the Entergy service area. It is for this reason that the treatment of QF power in the Weekly Procurement Process (WPP) process significantly impacts the selection of alternative bidders. Of particular concern is the manner in which the WPP attempts to deal with the need for operational flexibility, both from reliability and economic perspectives. Therefore, a better understanding and potential management of the risks associated with QF puts should be implemented.

Entergy's Actions in Response to NERC Reliability Alerts - Key Entergy staff, with important responsibilities for assuring the reliable operation of the Bulk-Power System, are either unaware of NERC alerts relevant to their functions or fail to give them due consideration. For example, several manager-level protection system experts were unaware of NERC's Protection System Single Point of Failure Advisory that had been issued on March 30, 2009, and took no action on at least two other Advisories.

I. Summary of Recommendations

Audit staff's recommendations to remedy this report's findings are summarized below. Detailed recommendations are included in Sections IV, V, and VI.

1. OATT Recommendations

Audit staff recommends that Entergy adopt the following OATT recommendations to remedy this report's findings related to the calculation and reporting of Entergy's Available Flowgate Capability (AFC) and the Weekly Procurement Process (WPP):

- Strengthen its procedures to report all AFC-related errors to the Commission and do so within the required timeframes;
- Enhance existing procedures to provide the ICT with the necessary information in a timely manner to: (a) evaluate changes to AFC values before posting and (b) validate the sufficiency of corrective actions taken to fix AFC-related errors;
- Enhance existing procedures to perform, in a timely manner, additional corrective actions the ICT directs to fix and prevent AFC-related errors;
- Improve the transparency and detail in error reports filed with the Commission. These more transparent error reports should include, at a minimum, the following information:
 1. Date and time the error initially occurred;
 2. Duration of time in which the incorrect configuration was in effect;
 3. Cause of the error;
 4. How ATC values may be impacted (e.g. increased or decreased);
 5. How transmission service requests (TSRs) have been impacted, if applicable (*i.e.*, oversold, undersold, or denied);
 6. Name of any market participants known to have been affected by the error; and
 7. All corrective actions taken to fix the error (*e.g.*, software patch, workaround, or other solution), including who performed the corrective action (*i.e.*, Entergy or a vendor), and the date the corrective action was performed;
- Increase the quality control of its data before transmitting it to the ICT. Instances when Entergy fails to perform its established quality control procedures should be noticed on Entergy's OASIS and reported to the Commission as a procedural error;
- Conduct an independent review of the following costs charged to the WPP project to ensure that the costs are properly chargeable as a component of construction cost in accordance with Electric Plant Instructions contained in the Uniform System of Accounts: (1) legal work, (2) payroll and employee benefits and expenses, (3) services provided by SPP, and (4) construction overheads.

- Provide audit staff, within 30 days of the issuance of the Final Audit Report, an engagement letter specifying the scope of the independent review.
- File the results of the independent review with the Commission no later than 90 days from the date of the Final Audit Report.
- Record and file, with supporting documentations, all correcting entries made as a result of the independent review.
- Adjust formula rate billings as appropriate and file a refund analysis with the Commission within 30 days.
- Strengthen its controls over the data Entergy's Energy Management Organization (EMO) provides as input to the WPP model.
- Develop a procedure for the Weekly Operations business unit to perform detailed sensitivity analyses of model results each week.
- Schedule a weekly conference call with the ICT to discuss and compare analysis results to identify any potential software and modeling issues.
- Set up controls to prevent marketing function employees from reserving secondary network service to serve off-system sales and provide the set controls to audit staff for review.
- Develop training programs for its marketing function employees responsible for reserving and/or scheduling secondary network service to ensure that secondary network service is only reserved to serve Entergy's native load customers, unless reserved on behalf of another network customer pursuant to an executed agent agreement. Entergy should provide this training program to audit staff for review.
- Develop a training program for its transmission function employees responsible for approving transmission schedules to ensure NITS customers, including Entergy's marketing function, properly use secondary network service. Entergy should provide this training program to audit staff for review.
- Pay from its marketing function the avoided PTP charges and submit supporting documentation showing all calculations.
- Arrange to notify all parties to existing NITS agreements that if they desire to grant any other party, including but not limited to Entergy, the right to act as their agent, that there must be an executed agent agreement in place prior to allowing

another party to exercise their rights and perform their obligations under the NITS agreement. Such a condition should also be inserted into the standard NITS agreement to be used in future NITS agreements between parties using the Entergy transmission system. Entergy should file the revised NITS agreement with the Commission.

- File all unreported transmission capacity reassignments in its EQR, as required by Order No. 890.
- Correct inaccurate reassignment information, and update EQR filings.
- Update processes and procedures for filing an EQR to ensure that accurate information is reported in its EQR filings and provide these updated procedures to audit staff for review.
- Develop controls to ensure that all transmission capacity reassignments are completely and accurately reported in its EQR filings. Entergy should provide test results of controls to audit staff for review.

Audit staff recommends that Entergy work with the ICT to adopt the following recommendations:

- Determine which type of AFC-related errors justify an impact analysis, and develop metrics to either quantify specific harm or provide an appropriate qualitative indicator, if specific harm cannot be determined.
- Assess Entergy's quality control process to determine what further testing should be performed to reduce errors in the data and software used to perform AFC calculations.
- Create additional quality control procedures to be performed by the ICT to conduct necessary testing before the data is used in AFC calculations, unless reliability concerns prevent such *ex ante* review and validation.

2. Areas of Concerns - Reliability Recommendations

To enhance the reliability of the BPS, Entergy should adopt the following recommendations:

- Submit a yearly report to audit staff on the amount and locations of non-consequential load at risk for single contingency events and efforts Entergy has undertaken to reduce this risk of load loss.
- Submit a schedule for reducing and eliminating planning for the use of non-consequential load shedding for single contingencies to audit staff so as to be in compliance with the Reliability Standard containing the directed modification to footnote (b) at or before its effective date.
- Follow the recommendation in NERC's March 30, 2009 advisory on single points of protection system failure. Entergy could further consider developing an action plan with a schedule. Upon the completion of the process, Entergy should provide the initial analysis, the assessments and any action plan to audit staff for review.

3. Other Matters - Recommendations

We recommend that Entergy:

- Enhance formal policies and procedures to ensure the following: (1) that all NERC Alerts are provided to the appropriate technical personnel in a timely manner, and (2) that Entergy's technical experts produce a written evaluation of each Alert, including its applicability to Entergy and related action plans, to management.
- Complete a written evaluation, including applicability and any corrective action plans, of the following Advisories: (1) Protection System Single Point of Failure; (2) Unexpected Loss of Generation Due to Low Voltage on the System; and (3) Power Flow and Dynamics Modeling.

We recommend that both Entergy and the ICT adopt the following recommendations to ensure the appropriate treatment of unscheduled deliveries from qualifying facilities (QF)¹³ in the WPP:

- Explore ways in which enhanced forecasting of QF puts can be achieved and incorporated in the WPP.
- Examine cost-effective transmission expansion planning options to better integrate the QF puts.

J. Compliance and Implementation of Recommendations

Audit staff further recommends that Entergy:

- Submit for audit staff's review Entergy's plans for implementing audit staff's recommendations. Entergy should provide these plans to audit staff within 30 days of the issuance of the final audit report.
- Submit quarterly reports to the Division of Audits describing Entergy's progress in completing each corrective action recommended in the final audit report. Entergy should make nonpublic quarterly filings no later than 30 days after the end of each calendar quarter, beginning with the first quarter after the final audit report is issued, and continuing until Entergy completes all recommended corrective action.
- Submit copies of any written policies and procedures developed in response to recommendations in the final audit report. These policies and procedures should be submitted for audit staff's review in the first quarterly filing after Entergy completes these products.

¹³ QFs or qualifying facilities are resources that qualify for special benefits pursuant to the Public Utility Regulatory Policies Act of 1978, including some limited rights to sell power from the QF to a utility (QF put).

II. Background

A. Entergy Services, Inc.

Entergy is a vertically integrated electric utility that delivers electricity to 2.7 million utility customers in Arkansas, Louisiana, Mississippi, and Texas. Entergy is a publicly traded company directly owned by its shareholders. It has five operating companies: Entergy Arkansas, Entergy Gulf States, Entergy Louisiana, Entergy Mississippi, and Entergy New Orleans. Entergy Services, Inc. serves as an agent on behalf of these operating companies. Entergy employs approximately 14,700 people who are involved in the generation, transmission, distribution, and sale of electricity at retail and wholesale. The audit addressed only the Entergy assets located within the regional footprint of its five operating companies and did not include its deregulated power generation business located in other regions of the country.

B. Transmission

Entergy owns, operates, and maintains more than 15,500 miles of high-voltage transmission lines across its four-state service territory. Power is transmitted along these high-voltage lines to more than 1,800 substations.

Entergy's transmission system also provides power directly to large commercial and industrial customers. These customers include refineries, chemical plants, oil and gas processing facilities, pumping stations, and large manufacturing sites vital to the region and nation.

Historically, Entergy's transmission system was designed and operated to serve the native loads of its five operating units, providing links between the operating companies to share generation, in accord with prevailing agreements among the operating units. Entergy's transmission grid relied upon significant support from generation resources which were also used to meet its native load requirements. The generation units were used in lieu of upgrades to the transmission system, in a least-cost integrated manner. However, this creates load pockets, resulting in units operating even when they are not the least-cost units (*i.e.*, reliability must-run units). Entergy also relied heavily upon operating guides and load shedding practices at the retail level to deal with contingencies on the system, rather than build a more robust transmission grid.

The construction of approximately 17,000 MW of merchant generation in the region beginning in the late 1990's has raised significant issues over the manner in which transmission upgrades to fully integrate this generation should be treated.

As a result of these factors, entities desiring transmission service into, through, or out of the Entergy footprint faced significant obstacles in securing firm reliable

transmission service. While efforts are currently underway to address many of these concerns, the legacy problems continue to present real challenges to planning and operation of the Entergy transmission system.

C. Generation and Purchased Power

Entergy owns and operates more than 30,000 MW of electric generation, including both utility and nonutility generating assets. The company also owns additional generation assets with other entities. However, despite owning these assets, within its own service areas Entergy has insufficient generation capacity to meet its peak load demands and relies upon purchased power contracts to make up the difference. Entergy's service area has large volumes of industrial cogeneration produced by qualifying facilities (QF) and merchant power plants which produce energy in excess of their needs, and long-term firm power contracts. Consequently, these generation sources create the opportunity to procure significant volumes of power in the short-term bilateral and "as-available" power markets. As a result, Entergy's participation as a seller of power in the bulk-power markets (other than to its own operating companies) is relatively limited. In 2009, Entergy had total retail sales of 99,148 GWh, representing operating revenues of nearly \$7.4 billion. In contrast, its sales-for-resale in the wholesale markets by its utility operations were only 4,862 GWh, with revenues of just \$206 million. However, Entergy does compete to serve loads in the territories of transmission dependent municipal and cooperative entities.

Entergy, by reason of its large loads and the limited market opportunities for generation within its service territory due to constrained transmission, has the ability to exercise significant power in its procurement from alternative power suppliers. In market areas in which there are not open and transparent competitive transactions, relationships become extremely important and preservation of business relationships may disadvantage parties seeking to negotiate on a level playing field. Therefore, determining the effectiveness and efficiency of the power markets is difficult. In the environment that has existed for many years in Entergy, with merchant power plants that are operating on slim, if any, profit margins, the concerns regarding the opportunities to market power are heightened. Therefore, strengthening the perceived and actual independence of the entity responsible for managing access to the transmission system is important.

The presence of alternative generation resources in Entergy's service area creates a challenging operating environment for the company. Significant volumes of QF power are injected into Entergy's system on an unscheduled basis (*i.e.*, QF puts). The volume of the QF puts has risen from approximately 2,000 GWh in 2000 to a peak level of over 12,000 GWh in 2003. The level in recent years has reached a plateau of 10,000 GWh. Merchant generation, overbuilt in anticipation of opportunities that failed to materialize, has been difficult to market due to transmission constraints as well as excess capacity in the region. The output of these plants creates an alternative source of power with lower

variable operating costs than many of Entergy's own intermediate and peaking power resources (*i.e.*, the Entergy "legacy generation"). Consequently, Entergy historically used these sources of power to lower its power prices for its retail customers, relying upon bilateral purchases from merchant generators and paying avoided costs for the unscheduled QF puts.

The Weekly Procurement Process (WPP) provides an additional alternative to generating power from older less-efficient "legacy" generation units and provides merchant generation the opportunity to serve Entergy's native load. For the period of 2009 in which the WPP was operational (March 28, 2009 through December 31, 2009), Entergy bought some 14 percent of its total energy through the WPP. On the other hand, Entergy purchased some 53 percent of its total energy through short-term bilateral markets. This shows that, while the WPP is providing an opportunity to serve Entergy's native load customers, the WPP still provides only a small part of the power required to serve Entergy's native load.

III. Introduction

A. Objectives

The audit objectives were to evaluate Entergy's: (1) practices related to Bulk Power System (BPS) planning and operations; (2) compliance with the requirements contained within its Open Access Transmission Tariff (OATT); and (3) other obligations and responsibilities as approved by the Commission. To accomplish this objective, audit staff reviewed and evaluated regulatory action taken by the company before and during the audit period. Corrective actions taken by the company after the audit period are also noted in this report. The audit covered April 1, 2006 to July 19, 2010.

B. Scope and Methodology

Audit staff first identified the criteria to be used to evaluate company compliance with the audit's objectives. Audit staff sought to evaluate Entergy's practices related to BPS planning and operations. In particular, audit staff reviewed and evaluated Entergy practices for compliance with the Reliability Standards in the areas of Transmission Planning, Operational Planning, Real-Time Operations, Modeling, Facility Ratings, and Protection. The criteria the audit staff applied to assess Entergy's compliance to its OATT include relevant statutes, rules, regulations, and orders, particularly those requirements in Entergy's OATT.

Audit staff then reviewed evidence obtained through data requests, site visits, and interviews. To address audit objectives, audit staff performed the following audit procedures and steps to evaluate Entergy's performance and compliance:

- *Data Requests* - The primary method of obtaining audit evidence was through the company's response to audit staff's data requests. Data requests were also made to the Southwest Power Pool (SPP), which acts as the Independent Coordinator of Transmission (ICT). The responses to data requests provided evidence that included internal procedures, manuals, transactional data, contracts, and other materials. Additionally, audit staff held numerous conference calls with company employees to address issues resulting from data request in a timely fashion. Responses to data requests involving email and documents on the computers of individual staff members resulted in the development of a searchable database by Entergy and subsequent development of computerized search inquiries to scan the relevant documents.
- *Site Visits* - Site visits allowed audit staff to observe and inspect the company's OATT business practices and controls supporting OATT compliance. Audit staff conducted site visits to Entergy's system control center in Pine Bluff, AR, Entergy's marketing function in Woodlands, TX, and Entergy's headquarters in

New Orleans, LA. Audit staff also visited the offices of the ICT and Arkansas Commission in Little Rock.

- *Interviews* - Interviews were conducted in person at Entergy's offices, at Commission offices, and by phone. Interviews help ensure staff understanding of company policies, processes, and procedures, and provide an opportunity to discuss data that the company provided from its subject-matter experts. Interviews were conducted with Entergy staff and attorneys, ICT employees, state regulators, and interested third-party entities that use Entergy's transmission grid.

To evaluate company compliance with all relevant requirements within the scope of this audit, audit staff performed several specific actions. Among them:

- *Available Flowgate Capability (AFC)* - Audit staff reviewed samples of AFC calculations and flowgate rating changes to ensure that they were consistent with the terms and conditions of Attachment C of Entergy's OATT. Audit staff evaluated AFC quality control and data retention processes, error reports filed with the Commission, transmission customer complaints, and ICT Transmission Planning Working Group meeting minutes to determine if Entergy consistently complied with the Order Conditionally Approving ICT, which required Entergy to report AFC-related data errors to the Commission, the ICT, and the Users Group within 15 days of discovering an error. AFC reporting was also evaluated in terms of its effectiveness in increasing transparency and confidence in the granting of open-access transmission service within Entergy's service area. Audit staff also assessed the ICT in its roles of providing oversight and guidance to Entergy, and serving as a monitor for the Commission and the third-party users of the power grid.
- *Weekly Procurement Process (WPP)* - Audit staff reviewed samples of WPP results to ensure Entergy selected or rejected third-party offers consistently in accordance with the terms and conditions of Attachment V to its OATT and Commission orders. Audit staff interviewed members of Entergy's Weekly Operations business unit to understand the policies, procedures, and processes governing WPP operation. Audit staff also interviewed members of Entergy's Energy Management Organization (EMO) business unit to understand the process of receiving third-party offers and developing inputs submitted to the Weekly Operations business unit. Further, audit staff analyzed the costs incurred in developing and implementing the WPP programs. A review of software development, implementation, and operations to date was conducted to determine the effectiveness of the software in meeting its objective of providing third-party generation resources, that are transmission dependent upon Entergy, greater access to power markets to serve Entergy's native load. Audit staff also assessed the

degree of confidence that this software and the ICT's oversight and involvement has provided to participants.

- *Transmission Service Request Process* - Audit staff reviewed transmission service requests to ensure Entergy processed customers' requests consistently with application procedures in its OATT. Audit staff interviewed transmission employees to understand how Entergy performed its responsibilities and duties in supporting ICT functions with respect to transmission service requests in accordance with the requirements of Attachment E to Entergy's OATT. Audit staff then reviewed the samples of PTP and Network Integration Transmission Service (NITS) agreements to confirm that Entergy signed them in accordance with the terms and conditions of its OATT. Also, audit staff reviewed network resource designation and undesignation requests to ensure that Entergy adhered to its OATT's designation/undesignation procedures.
- *Capacity Reassignment* - Audit staff reviewed all transmission capacity reassignment transactions completed since the effective date of Order No. 890 (May 14, 2007) to determine whether Entergy reported all transmission capacity reassignments in its EQR filings pursuant to the requirements of Order Nos. 890, 890-A, and 890-B. Also, audit staff checked the accuracy of the reported transmission capacity reassignments.
- *Use of Network Resources* - Audit staff analyzed company-supplied data that included generation, power purchases, and sales to determine whether Entergy appropriately used its designated network resources in accordance with OATT requirements.
- *Use of Network Transmission Service* - Audit staff evaluated secondary network service that Entergy used to determine whether the company consistently used the secondary network transmission service to deliver energy to serve its native load customers in accordance with the OATT requirements.
- *Scheduling and Curtailment* - Audit staff reviewed a sample of transmission schedules to determine whether Entergy curtailed transmission service on a nondiscriminatory basis for each affected transmission customer.
- *Transmission Billings* - Audit staff reviewed samples of transmission billings to ensure Entergy charged its NITS and Point-to-Point (PTP) transmission customers in accordance with the provisions of its OATT. Audit staff interviewed employees responsible for transmission billing and settlement to understand Entergy's internal transmission billing processes and procedures.

- *Creditworthiness* - Audit staff reviewed Entergy's creditworthiness procedures to ensure that it evaluated its transmission customers' creditworthiness consistently in accordance with the procedures in Attachment L in its OATT. Audit staff interviewed transmission employees responsible for evaluating transmission applications to understand Entergy's internal processes and procedures for reviewing, granting, and denying credit to transmission customers.
- *Transmission Planning* - Audit staff reviewed the processes and standards that Entergy used to implement its transmission planning, consistent with the terms and conditions of Attachment K of its OATT as well as planning principles adopted in Order No. 890.
- *Disclosure of Nonpublic Transmission Information* - Audit staff reviewed all incidents in which Entergy employees disclosed nonpublic transmission information to marketing affiliate employees to determine if Entergy received undue preference.

IV. Findings and Recommendations

1. Available Flowgate Capability-related Errors on Entergy's System

Audit staff found Available Flowgate Capability (AFC) related errors on Entergy's transmission system and the reporting of such errors to the Commission. Specifically, Entergy:

- Has a long history of experiencing AFC-related errors on its transmission system and, despite the efforts Entergy has made to reduce errors, errors continued to be experienced during the period in which this audit was conducted;
- Is required to report AFC-related errors to the Commission, although it is not required to determine the harm from such errors;
- Failed to report 20 AFC-related errors to the Commission. Two of these errors were never reported to the Commission, although Entergy fixed the related software problem. As for the remaining 18 AFC-related errors, the Independent Coordinator of Transmission (ICT) eventually reported these errors to the Commission in its quarterly performance reports;
- Did not report all AFC-related errors to the Commission within 15 days of discovering each error; and
- Filed AFC-related error reports with the Commission that lacked the transparency and detail needed for stakeholders to make informed decisions about AFC-related errors. Error reporting lacking in sufficient transparency does not achieve the objectives sought when reporting requirements were established¹⁴.

Pertinent Guidance

The Commission expected the Entergy ICT proposal to improve the transparency of transmission information on Entergy's system.¹⁵ The Order Conditionally Approving

¹⁴ Audit staff understands that the Commission desired Entergy's filings "to provide sufficient information for the Commission and parties . . . to determine whether the [the errors] resulted in restricting or withholding available transmission capacity from independent power producers and other generators that use transmission service. *Entergy Services, Inc.*, 115 FERC ¶ 61,095 at P 10 (2006).

¹⁵ *Id.* at P 3.

ICT requires Entergy to notify the Commission, the ICT and Entergy's Users Group within 15 days if Entergy discovers that it has lost data, or reported inaccurate data, or otherwise believes that it has mismanaged data.¹⁶ Although the Order Conditionally Approving ICT does not define the type of data Entergy is required to report, the Commission (1) acknowledged many complaints about the completeness and accuracy of Entergy's data and as a result required the ICT to measure seven metrics to determine whether there are improvements to transmission access and service under the ICT,¹⁷ and (2) expressed its concern about the failure of Entergy's data retention system which led to the loss of nine months of AFC data, as reported on October 31, 2005.¹⁸

Further, the Order Conditionally Approving ICT requires that for any data errors reported by Entergy, the ICT must advise the Commission and Entergy's retail regulators in its next scheduled report as to whether Entergy has remedied the problem, and if not, whether and when Entergy proposes to implement an appropriate remedy. The ICT must further inform Entergy's regulators as to whether it believes that Entergy's proposed remedy is adequate to remedy the data error that occurred and to avert any such data errors in the future.¹⁹

Background

Entergy has a long history of experiencing errors on its transmission system. Before the company's current AFC methodology, Entergy used a Generator Operating Limit (GOL) methodology to determine the amount of transmission available on its system. The Divisions of Operational Investigations and Enforcement of the Office of Market Oversight and Investigations (OMOI) issued an audit report on December 17, 2004 which concluded that there were significant errors in Entergy's performance of the GOL methodology during an April through September 2003 study period, resulting in hundreds of transmission service requests which were or may have been erroneously granted or denied.²⁰ In its audit report, OMOI stated that some of the errors and problems associated with the GOL program raised concerns that similar quality control issues may exist with respect to the AFC methodology. Since Entergy would use this method to

¹⁶ *Id.* at P 110.

¹⁷ *Id.* at P 304.

¹⁸ *Id.* at P 109.

¹⁹ *Id.* at P 110.

²⁰ Audit Report on Generator Operating Limits, Docket No. PA04-17-000, December 17, 2004.

assess transmission capacity, the Commission included this matter as an issue to be examined as part of a section 206 investigation and hearing.²¹

Audit staff interprets the reporting criteria required in the April 2006 order to cover all data that the ICT relies upon to grant and deny Transmission Service Requests (TSRs). The April 2006 ICT order was silent about Weekly Procurement Process (WPP) input data errors because the WPP was not active when the order was issued. Audit staff thus believes the data reporting requirements should include not only AFC-related inputs but also WPP-related inputs, since the WPP is another service offered under Entergy's OATT and is subject to ICT's oversight, as well as data related to transmission planning.

The AFC values Entergy developed are important for determining (1) access to Entergy's grid by granting transmission service requests, (2) curtailment of transmission schedules, and (3) evaluation of bids by alternative suppliers to serve Entergy's retail load through participation in the WPP. Since implementation of the AFC process in 2004, Entergy has continued to experience AFC-related errors on its transmission system. While no data is available on errors that occurred before the launch of the ICT in November 2006,²² between November 1, 2006 and July 8, 2010, Entergy filed 66 error reports with the Commission containing 106 AFC-related errors.²³ The errors typically involved: (1) software, (2) data inaccuracy, (3) modeling, and (4) data loss. Entergy had no tracking mechanism for AFC-related errors before the ICT was launched in November 2006. Therefore, no data is available on errors that occurred before this time. Metrics that the ICT reported in its Annual Performance Reports show that Entergy continues to experience problems with inaccurate data and modeling assumptions, and complaints from transmission users.²⁴

Entergy has developed the following four formal procedures to address the identification, reporting, and correction of AFC-related errors: an exception log, Event Reporting and Tracking, a Paperless Reporting Condition System (PRCS) for issue identification and resolution tracking, and a Remedy action request system. These procedures, and the period for which they were used, can be summarized as follows:

²¹ Order Conditionally Approving ICT at P 9, 17.

²² Entergy had no tracking mechanism for AFC-related errors before the ICT was launched.

²³ Docket No. ER05-1065.

²⁴ See Attachment S from the ICT's 2007, 2008, and 2009 Annual Performance Reports, Docket No. ER05-1065.

- The exception log is an internal database that documents AFC-related errors. Entergy began maintaining this exception log to identify infractions of Commission regulations. Audit staff examined information in Entergy's exception log for the period January 31, 2007 through August 8, 2008.
- Entergy's Event Reporting and Tracking procedure (implemented in April 2008) is used to identify and document potential issues reportable to the Commission. This procedure describes the criteria that Entergy's Business Unit employees use when identifying and documenting issues that might be reportable to the Commission. Entergy revised this procedure on November 17, 2008 to incorporate requirements from its exception log. Entergy discontinued the exception log concurrently with this revision. On September 1, 2009, Entergy changed the name of its Event Reporting and Tracking System procedure to Evaluation of Issues Identified and revised it to incorporate the implementation of the PCRS, in July 2009.
- The PCRS procedure permits transmission employees to communicate identified issues associated with the loss or mismanagement of data, or posting of inaccurate or incomplete data used for the AFC process, transmission service requests, or OASIS postings. Some possible examples of conditions to be reported in the PCRS are self-assessments, areas of improvement, program weaknesses, procedure inadequacies, and self-reports of noncompliance with Commission requirements. Audit staff reviewed a log of Entergy's PCRS reports from the program's launch in July 2009 through January 2010. Each report summarizes the condition, a log of all corrective actions performed, whether a condition is reportable to the Commission, and if a problem has been resolved.
- Remedy is an application that allows Entergy employees to track software problems that need repair. Entergy uses Remedy to identify these problems, assign Entergy employees to fix them based on urgency, and summarize corrective actions taken. Remedy contains a log of all software changes on Entergy's system, which includes but is not limited to software changes made to fix AFC-related errors. While Remedy is an internal database only viewable by Entergy, the ICT has the ability to issue Remedy tickets to Entergy with recommended software changes. Audit staff reviewed Entergy's Remedy database for the audit period and observed that several Remedy entries detail software changes Entergy made to fix AFC-related errors that correspond with errors documented in Entergy's exception log or PCRS, then later reported to the Commission.

These procedures indicate that Entergy has taken some steps to strengthen its internal controls in an effort to reduce errors. Yet, despite these four procedures, Entergy continues to experience AFC-related errors.

AFC-related errors can be discovered by Entergy, the ICT, or transmission customers. When Entergy discovers AFC-related errors, Entergy has no obligation to report such errors to the ICT, and consequently the ICT may or may not be aware of the problem. When the ICT discovers an AFC-related error, it notifies Entergy immediately. The ICT tries to resolve problems manually, when feasible, to limit the impact to transmission customers. After reporting an error to Entergy, the ICT is responsible for following up until a problem has been resolved. When a potential AFC-related error is discovered by a transmission customer, the customer notifies the ICT via email, phone, or interactive software called IssueTrak. The ICT then researches the issue to determine if a potential error exists. If the ICT concludes a problem exists, it notifies Entergy and attempts to resolve the issues in the same way as outlined previously.

Entergy is required to report AFC-related errors to the Commission, but it is not required to conduct an impact analysis to determine the harm from such errors. Audit staff also observed that when Entergy rectified AFC-related errors, the ICT independently validated some of the errors to determine whether the remedy was sufficient to correct the problem. The ICT must report to the Commission whether Entergy fixed AFC-related errors or proposed a feasible solution to fix them. However, any recommended corrective action the ICT proposed to remedy AFC-related errors by itself does not compel Entergy to accept such corrective action in a timely manner.²⁵ While the ICT has sometimes recommended that Entergy perform a more robust fix after the company has already taken corrective actions associated with AFC-related errors, Entergy is not required to expeditiously implement the ICT's recommendation. The audit staff recognizes that there are procedures whereby disputes between the ICT and Entergy can be escalated to arbitration for resolution. These procedures might be protracted and potentially contentious. Therefore, the audit staff believes that the ICT prefers to adopt a more collaborative rather than confrontational approach. The ICT indicated that in most cases Entergy has adopted ICT-recommended action, but not as swiftly as the ICT might have wished.

In an interview between the ICT and audit staff, the ICT said it has a limited ability to exercise its authority to ensure the accuracy of AFC values when frequent data exchanges occur. During these frequent data exchanges, Entergy's changes to data inputs to the AFC process cannot be validated by the ICT before the AFC values are posted for

²⁵ See Entergy Service, Inc., FERC Electric Tariff, Third Revised Vol. No. 3, Original Sheet No. 583.

use by market participants. It is important that all users of the Entergy transmission system have accurate, comprehensible AFC values.

Failure to report all AFC-related errors

To determine whether Entergy reported all AFC-related errors to the Commission, audit staff analyzed all Entergy error report filings under Docket No. ER05-1065, all ICT quarterly performance reports filed with the Commission, and Entergy's internal Remedy database of software changes. Based on audit staff's analysis, Entergy did not report 20 errors that should have been reported to the Commission, as required by the Commission's Order Conditionally Approving the ICT.²⁶ Two of these errors were never reported to the Commission, although Entergy corrected the software problem. The ICT eventually reported 18 of the 20 errors in its quarterly performance reports.

For example, on June 28, 2007, Entergy filed a report with the Commission explaining an error that affected the way that RFCalc and OASIS Automation were processing resale requests.²⁷ These programs are used to calculate and post AFC data. On September 4, 2007 and September 24, 2007, the ICT notified Entergy about two separate errors resulting from the underlying issue Entergy reported on June 28, 2007. Audit staff noted that Entergy did not report these errors to the Commission as required by the Order Conditionally Approving ICT, even though the ICT reported the errors in its quarterly performance report filed with the Commission on December 31, 2007.²⁸ Audit staff believes that Entergy should have reported these errors to the Commission because they resulted in inaccurate reporting of AFC values.

Timeliness of AFC-related Error Reporting

Audit staff reviewed Entergy's error report filings in Docket No. ER05-1065 and ICT quarterly performance reports and found two AFC-related errors that the company failed to report to the Commission within 15 days of discovering the error, as required by the Order Conditionally Approving ICT. On September 28, 2009, Entergy identified incorrect AFC values for two flowgates, Nine Mile and Sabine, as a result of an internal

²⁶ *Id.* at P 110.

²⁷ Entergy Operating Services Inc., Company notified the Commission on June 28, 2007 in Docket No. ER05-1065 of certain recently reported OASIS Automation (OA) errors that have produced inaccurate data.

²⁸ ICT Quarterly Performance Report, Docket No. ER05-1065, December 31, 2007.

review conducted as a part of a transition from AREVA WebOASIS to OATi OASIS.²⁹ Entergy reported this error to the Commission on December 17, 2009, 80 days after discovering the error, a clear violation of the 15-day reporting requirement. In its report, Entergy said the values' impact could not be determined, but had the potential to affect transmission service requests in the Operating and Planning Horizons.

On February 23, 2007, the ICT notified Entergy of a software error concerning redirected transmission service.³⁰ When there was a redirect request with the status of "study" prior to an OASIS Automation resynchronization, the impact of that reservation on the flowgates would be removed during the resynchronization and therefore was no longer being evaluated. The ICT reported similar issues with redirected transmission service to Entergy two additional times on April 4, 2007 and June 1, 2007. The ICT determined that the software error resulted in the overselling of transmission service on some contract paths. Entergy eventually filed an error report with the Commission regarding this software error on June 15, 2007³¹, 98 days after the ICT originally notified Entergy of the issue which is also a clear violation of the 15-day reporting requirement.

Lack of Transparency in Error Reports

Audit staff reviewed all error reports Entergy filed³² and found the following problems: (1) the reports include inconsistent levels of detail; (2) the reports generally lack transparency; and (3) most reports do not indicate any quantitative or even qualitative indication of the impact that the errors have upon the ability to grant transmission service requests (TSRs). Accordingly, audit staff is making recommendations on a going-forward basis to provide greater transparency in the process. Staff recommends that greater detail be provided in Entergy's filings with the Commission as well as in its reporting of errors in other forums such as the ICT Users Group.

²⁹ Entergy Services, Inc. Report of AFC-Related Errors filed in Docket No. ER05-1065 on December 27, 2009.

³⁰ ICT Quarterly Performance Report, Docket No. ER05-1065, June 27, 2007.

³¹ Entergy Services, Inc. Operating Companies notifies FERC of certain recently reported OASIS software errors in Docket No. ER05-1065 on June 15, 2007.

³² Docket No. ER05-1065.

Some of the error reports filed initially after the ICT agreement went into effect included thorough details, such as:

- The cause of an error;
- When an error occurred;
- Who discovered the error;
- When an error was discovered;
- Who the error affected;
- Whether the error affected transmission service requests; and
- What corrective actions, if any, Entergy or its vendors took to fix the error.

However, many error reports, particularly recent ones, do not specify this information. For example, on March 16, 2010, Entergy reported its discovery of a transmission data error in an earlier version of WebOASIS that resulted in discrepancies in the posting of AFC values. Entergy's error report said that before March 3, 2010 WebOASIS had been:

“. . . configured to return capacity that is “DISPLACED” from a reservation redirected on a firm basis to the parent reservation from which the redirected reservation originated. Accordingly, the capacity available profile on the parent reservation that had been decremented to support the redirected reservation was incremented when the redirect reservation was “DISPLACED”. This change in available profile was not reflected in the capacity available value posted on Entergy's WebOASIS.”

As a result of this posting, on April 1, 2010, the City of New Orleans filed a limited protest with the Commission about the transparency of Entergy's AFC error reporting.³³ Audit staff discussed the issue with the City of New Orleans to better understand the concerns about the utility of Entergy postings. The City of New Orleans stated its concerns were shared by other market participants who had expressed appreciation for the City's bringing this matter to the Commission's attention. The City of New Orleans said the detail in an error report Entergy filed on March 16, 2010 was insufficient for Entergy's retail regulators and market participants to fully understand the cause(s) and ramifications of Entergy's errors.

Another example of the lack of transparency in Entergy error reports involves discrepancies in transmission facility ratings. Audit staff sampled internal emails Entergy provided in response to data requests and found 12 instances in which flowgate ratings calculated in the AFC model were different from actual flowgate ratings. These rating

³³ The City of New Orleans, April 1, 2010 Limited Protest, Docket No. ER05-1065-000.

discrepancies may have resulted in the reporting of inaccurate data on Open Access Same-time Information System (OASIS) and if so, Entergy should have reported them to the Commission. In its review of Entergy error reports, audit staff found a total of five errors in the following categories which may potentially impact facility ratings: incorrect monitored elements, improper configuration of flowgates, improper outage processing, and incorrect outage entry. However, these error reports do not provide enough information for audit staff to determine if Entergy filed them with the Commission in reaction to any of the 12 facilities' ratings discrepancies audit staff identified in Entergy's internal emails. For instance, one error report stated that several flowgates were improperly configured with the wrong direction convention, but the report did not disclose which flowgates were affected.³⁴ In the event that Entergy reported all 12 facilities' ratings discrepancies, it was done in a manner that was not useful for stakeholders to understand the impact.

Audit staff's concerns over the transparency of Entergy's error reports throughout the audit period are consistent with protests raised by stakeholders. Audit staff believes that Entergy's stakeholders could benefit if the company began providing greater clarity and detail in its error reports. This would allow market participants to understand the cause of any problems and their effect upon energy markets.

Audit staff believes that Entergy needs to improve its reporting of AFC-related errors. Also, an impact analysis should be performed for certain AFC-related errors to determine the effect on stakeholders. To reduce AFC-related errors or the magnitude of such errors, audit staff believes that the ICT's role and responsibilities should be enhanced to: (1) evaluate changes made by Entergy to data inputs for the AFC calculations before AFC values are posted, (2) validate the sufficiency of corrective actions taken to fix AFC-related errors, and (3) require Entergy to take additional corrective actions recommended by the ICT to fix and prevent AFC-related errors.

³⁴ Entergy Services, Inc., Improper Configuration of Certain Flowgates, Docket No. ER05-1065, November 14, 2007.

Recommendations

We recommend that Entergy:

1. Strengthen its procedures to report all AFC-related errors to the Commission and do so within the required timeframes;
2. Enhance existing procedures to provide the ICT with the necessary information in a timely manner to: (a) evaluate changes to AFC values before posting and (b) validate the sufficiency of corrective actions taken to fix AFC-related errors;
3. Enhance existing procedures to perform, in a timely manner, additional corrective actions the ICT directs to fix and prevent AFC-related errors; and
4. Improve the transparency and detail in error reports filed with the Commission. These more transparent error reports should include, at a minimum, the following information:
 - Date and time the error initially occurred;
 - Duration of time in which the incorrect configuration was in effect;
 - Cause of the error;
 - How ATC values may have been impacted (*e.g.*, increased or decreased);
 - How TSRs have been impacted, if applicable (*e.g.*, oversold, undersold, or denied);
 - Name of any market participants known to have been affected by the error; and
 - All corrective actions taken to fix the error (*e.g.*, software patch, workaround, or other solution), including who performed the corrective action (*i.e.*, Entergy or a vendor), and the date the corrective action was performed.

And that Entergy work with the ICT to:

5. Determine which type of AFC-related errors justify an impact analysis, and develop metrics to either quantify specific harm or provide an appropriate qualitative indicator, if specific harm cannot be determined.

2. Available Flowgate Capability Quality Control

Although Entergy has strengthened its quality control policies and procedures to ensure the accuracy of its data, including the data inputs for the Available Flowgate Capability (AFC), audit staff believes that they are still not adequate and need to be further strengthened. In addition, even the existing procedures are not being properly implemented. Entergy had AFC quality control procedures in place to monitor the accuracy of AFC input data, but failed to perform quality control checks for 20 days.

Pertinent Guidance

Entergy must notify the Commission, the ICT, and Entergy's Users Group within 15 days if Entergy discovers that it has lost data, reported inaccurate data, or otherwise believes that it has mismanaged data.³⁵ For any data errors reported by Entergy, the ICT must advise the Commission and Entergy's retail regulators in its next scheduled report as to whether Entergy has remedied the problem, and if not, whether and when Entergy proposes to implement an appropriate remedy.³⁶ The ICT must further inform Entergy's regulators as to whether it believes that Entergy's proposed remedy is adequate to remedy the data error that occurred and to avert any such data errors in the future.³⁷

Background

On January 1, 2005, Entergy implemented a quality control procedure to minimize data errors and improve system stability for hourly and daily AFC calculations performed using energy management service (EMS)-based models in the Operating and Planning Horizons. This quality control procedure requires Entergy to screen AFC data inputs for accuracy and notify data providers if problems are detected. These quality control checks include verifying whether: input data have been updated properly, values for input files are within reasonable limits, and AFC postings have been made properly on Open Access Same-time Information System (OASIS). In response to audit staff's data requests, Entergy said that such a systematic quality control procedure as had been implemented was necessary for Operating and Planning Horizon calculations because the data inputs for those calculations were updated frequently. Entergy also said missing or inaccurate data from some of the areas checked by the AFC quality control procedure may potentially impact AFC values.

³⁵ Order Conditionally Approving ICT at P. 110.

³⁶ *Id.*

³⁷ *Id.*

Audit staff examined the data logs kept under Entergy's quality control and found that the company did no record of performing quality checks on AFC data inputs for 20 days from August 22, 2008 through December 18, 2009. In response to a subsequent, follow-up data request, Entergy agreed that quality control on AFC input data was not performed on two days due to complications caused by Hurricane Gustav. However, Entergy stated "it is unknown at this time why AFC QC checks were not performed" on the remaining 18 days.

Audit staff has concerns regarding the effectiveness on the current quality control processes. In response to a data response, Entergy described nine reportable AFC-related errors it could not detect by means of its AFC data input quality control procedure because it had no process to detect those types of errors. Consequently, those errors were discovered by the ICT or transmission customers who conveyed the information to the ICT. Subsequently, the ICT informed Entergy of those errors and, after Entergy internally confirmed the errors, the company filed error reports with the Commission. In part, as a result of those undetected errors, audit staff believes that Entergy should consider further improving its AFC quality control processes.

Audit staff confirmed with the ICT the concern about the quality of the data used in AFC calculations. The ICT staff said Entergy develops data without ICT oversight or participation by the ICT staff. This is different than the manner in which the ICT can access data and independently test the Weekly Procurement Process (WPP) using networked computers. In the AFC data process, data is transferred twice daily and immediately affects calculations performed without any opportunity for the ICT to check data quality. The ICT believes that to better ensure quality control an *ex ante* review would be preferable. Currently the ICT does seek to implement a quality control process, but can do so only after the fact. Therefore while the ICT has the authority to ensure data accuracy there is currently no practical way in which the ICT can exercise this authority.

Audit staff believes robust quality control procedures are critical in minimizing the occurrence and adverse impacts of AFC-related errors. While Entergy has made efforts in this area, there is a need for enhanced processes and procedures. As noted previously, the ICT stressed to the audit staff that Entergy develops and transfers essential data to the ICT to calculate the ATC which does not allow the ICT to exercise its authority to validate the accuracy of the data. As noted, the quality control process performed by Entergy prior to transfer is allowing errors to go undetected. For these reasons, strengthening these procedures, or replacing them with stricter ones, is crucial to reduce AFC-related errors and facilitate the fair and equal access to transmission services by all transmission system users. Therefore, audit staff believes that Entergy should work jointly with the ICT to strengthen its current procedures to ensure AFC values are checked for quality before the ICT posts them.

Recommendations

We recommend that Entergy:

6. Increase the quality control of its data before transmitting it to the ICT. Instances when Entergy fails to perform its established quality control procedures should be noticed on Entergy's OASIS and reported to the Commission as a procedural error.

And that Entergy work with the ICT to:

7. Assess Entergy's quality control process to determine what further testing should be performed to reduce errors in the data and software used to perform AFC calculations; and
8. Create additional quality control procedures to be performed by the ICT to conduct necessary testing before the data is used in AFC calculations, unless reliability concerns prevent such *ex ante* review and validation.

3. Developing the Weekly Procurement Process

Entergy experienced significant delays in developing the Weekly Procurement Process (WPP). Entergy had to send the software back to the vendor over 75 times for modifications prior to the time at which the WPP was approved for use by the Independent Coordinator of Transmission (ICT). This resulted in significant delays with the implementation of the WPP. In addition to the delays, the WPP, as implemented, does not include all of the operational functionality initially proposed and approved, such as the ability to handle off-peak bids and point-to-point (PTP) transmission service. In addition the model requires significantly more manual intervention than originally had been envisioned. Audit staff also noted that:

- The cost of developing and implementing the WPP greatly exceeded the amounts initially budgeted for this project, and such cost overruns were caused by the protracted development period;
- Entergy capitalized certain legal and other costs for services provided by SPP and an outside law firm. Based on information gathered during this audit, some of the costs were associated with the preparation of tariff filings and developing control procedures for integrating the ICT functions into the WPP. These costs should have been expensed as incurred rather than capitalized as a cost of construction related to the WPP project;
- Entergy capitalized certain payroll and employee benefit and expenses as part of the WPP project. Audit staff conducted interviews with a sample of Entergy employees and determined that some of these costs should have been expensed as incurred rather than capitalized as part of the WPP project; and
- Entergy assigned transmission-related construction overhead to the WPP project. Entergy used a general transmission overhead rate that is applied to all transmission projects.

Based on its examination of costs capitalized as construction costs to the WPP project, audit staff determined that certain costs should have been expensed as incurred rather than capitalized. Audit staff's examination was based on sample interviews and review of limited documentation supporting the construction overhead charges as well as the legal and other costs provided by SPP and an outside law firm. Therefore, audit staff is recommending that Entergy undertake a comprehensive independent review of all legal costs, payroll and employee benefit and expenses, and transmission-related construction overheads to determine whether such costs should have been capitalized to the WPP project or expensed as incurred to the appropriate expense account.

Pertinent Guidance

The instructions to Account 107, Construction Work in Progress – Electric, states in part:

A. This account shall include the total of the plant balances or work orders for electric plant in process of construction.

The instructions to Account 928, Regulatory Commission Expenses, state in part:

A. This account shall include all expenses (except pay of regular employees only incidentally engaged in such work) properly includible in utility operating expenses, incurred by the utility in connection with formal cases before regulatory commissions, or other regulatory bodies, or cases in which such a body is a party, including payments made to a regulatory commission for fees assessed against the utility for pay and expenses of such commission, its officers, agents, and employees, and also including payments made to the United States for the administration of the Federal Power Act.

Electric Plant Instruction No. 3, states in part:

A. For Major utilities, the cost of construction properly includible in the electric plant accounts shall include, where applicable, the direct and overhead cost as listed and defined hereunder:

(2) Labor includes the pay and expenses of employees of the utility engaged on construction work, and related workmen’s compensation insurance, payroll taxes and similar items of expense. . . .

(17) “Allowance for funds used during construction” . . . includes the net cost for the period of construction of borrowed funds used for construction purposes and a reasonable rate of other funds when so used. . . .

General Instruction No. 9, Distribution of Pay and Expenses of Employees, states:

A. The charges to electric plant, operating expense and other accounts for services and expenses of employees engaged in activities chargeable to various accounts, such as construction, maintenance, and operations, shall be based upon the actual time engaged in the respective classes of work, or in case that method is impracticable, upon the basis of a study of the time actually engaged during a representative period.

Electric Plant Instruction No. 4, Overhead Construction Costs, states in part:

A. All overhead construction costs, such as engineering, supervision, general office salaries and expenses, construction engineering and supervision by others than the accounting utility, law expenses, insurance, injuries and damages, relief and pensions, taxes and interest, shall be charged to particular jobs or units on the basis of the amounts of such overheads reasonably applicable thereto, to the end that each job or unit shall bear its equitable proportion of such costs . . . retired.

B. As far as practicable, the determination of payroll charges includible in construction overheads shall be based on time card distribution thereof. Where this procedure is impractical, special studies shall be made periodically of the time of supervisory employees devoted to construction activities to the end that only such overhead costs as have a definite relation to construction shall be capitalized. The addition to direct construction costs of arbitrary percentages or amounts to cover assumed overhead costs is not permitted.

Account 923, Outside Services Employed, states in part:

A. This account shall include the fees and expenses of professional consultants and others for general services which are not applicable to a particular operating function or to other accounts. It shall include also the pay and expenses of persons engaged for a special or temporary administrative or general purpose in circumstances where the person so engaged is not considered as an employee of the utility.

Background

In Docket No. ER04-699-000, Entergy filed revisions to its Open Access Transmission Tariff (OATT) to establish the WPP. The WPP is designed to optimize the designation of network resources under the OATT to allow merchant generation and other wholesale suppliers to compete to serve Entergy's native load through bids submitted to Entergy Energy Management Organization business unit (EMO).³⁸ The Commission's evaluation of the WPP sought to quantify potential benefits by:

- Providing third-party suppliers the opportunity to serve Entergy's native load; and
- Using the offers by the generators, as well as operational information from Entergy, to minimize production costs, subject to system constraints, resulting in a

³⁸ *Entergy Services Inc, agent for Entergy Operating Companies submits proposed revisions to Entergy's Open Access Transmission Tariff, FERC Electric Tariff, Second Revised Volume 3, June 8, 2007, Docket No. ER05-1065-000 at P 290-91.*

more economic solution.

Timeline for Implementing WPP

In the Order Conditionally Approving ICT, the Commission among other things conditionally approved Entergy's proposal to implement a WPP.³⁹ In its May 27, 2005 filing to the Commission, Entergy stated that it expected the WPP to be operational approximately fourteen months after the date of the Order, which would have been June 24, 2007.⁴⁰ The Commission accepted Entergy's timeline.⁴¹ However, Entergy did not implement WPP until March 2009.⁴² The WPP development process is described in more detail below.

After Entergy consulted with many software vendors, it initially believed that it could implement all WPP functionalities within 14 months. Entergy selected New Energy Associates (later named Ventyx) to develop the WPP, based upon New Energy's commercial software (PROMOD IV), which is widely used in the power industry. However, the initial version of PROMOD IV did not include all of the proposed WPP functionalities nor was it designed to operate over a weekly horizon.

In the response for the Request for Proposal (RFP), New Energy was confident about meeting the proposed timeline. New Energy stated that on December 22, 2006 the WPP systems will be complete and ready for internal testing and training. New Entergy further projected that by March 5, 2007 market trials would commence with external users, and then, on May 7, 2007, full implementation of WPP would commence. However, as can be seen from the timeline of delays, these proposed dates, in which New Energy expressed such confidence, were not met.

Confusion regarding the actual operational readiness of the WPP software began to appear in the periodic status reports filed by Entergy. In the WPP status report filed by Entergy on June 8, 2007,⁴³ Entergy indicated that all of the software modules had been developed but production benchmark tests and market trials further were delaying the

³⁹*April 2006 Order* at P. 296.

⁴⁰*Id.*

⁴¹*Entergy Services, Inc.*, 126 FERC ¶ 61,242 (2009).

⁴² *Id.*

⁴³ *Status Report Regarding Implementation of the Weekly Procurement Process*, June 8, 2007, Docket No. ER05-1065-000.

implementation of the WPP. In this June 8, 2007 status report, Entergy indicated different types of software testing had been completed to ensure the WPP software were operating correctly, which include vendor unit tests, integration tests, benchmark tests, and user acceptance tests.

Audit staff understood this report to mean that full functionality had been developed (*i.e.*, all software modules were developed) and that the testing of operation of the software was under way.

Entergy concluded its June 8, 2007 report with the estimate that the WPP would become operational following the completion of the testing phase which would be on August 6, 2007 under the “best case” scenario, or by September 24, 2007 under a more conservative estimate.⁴⁴

On September 17, 2007, Entergy filed another status report suggesting it could not meet the September 24 deadline that it specified in the prior status report.⁴⁵ Specifically, Entergy stated that the software had been fully developed, software testing had been performed, and four weeks of market trials had been completed, but both Entergy and the ICT had identified certain modeling, software, and process issues during market trials. Once the additional market trials were completed, production readiness testing was the final test before the model could become operational. Entergy did not give a new deadline for completion of the WPP – rather, Entergy promised to file an additional status report when the next set of market trials were completed successfully. Entergy, however, did not make a filing indicating that market trials were completed successfully.

Audit staff found the terminology in these reports to be difficult to understand, particularly in light of subsequent events and filings. The status reports appeared to indicate that software had been developed and tested to provide the functionality required by the WPP. The status report also indicated that the WPP software was in “market trials” and was nearly complete. Audit staff understands that “market trials” involve operation of the model using the actual bid data of the market participants and data from the EMO that has been masked to prevent the disclosure of confidential Entergy data to market competitors. Nonetheless, it appeared from the status report that a fully functional WPP software package was drawing close to completion.

⁴⁴ *Id.*

⁴⁵ *Status Report Regarding Implementation of the Weekly Procurement Process*, September 17, 2007, Docket No. ER05-1065-000.

On January 31, 2008, Entergy proposed a number of amendments to its OATT, Attachment V – WPP.⁴⁶ These changes included the application of “soft constraints,” the elimination of conditional network resources, and the modification to evaluate Point-to-Point (PTP) service only on an “all-or-none” basis. Additionally, the proposed start-up date for the WPP was postponed to May 17, 2008. However, the Commission did not accept Entergy’s proposal to evaluate PTP transmission service only on an “all-or-none” basis, requiring Entergy to continue its development and further delaying the operational date to October 11, 2008.⁴⁷ Additionally, the Commission added the requirement that the ICT must be satisfied that the model will function as intended and must give its final endorsement before operation may begin.

On August 29, 2008, Entergy filed a proposed amendment to Attachment V to reflect the new implementation date of the WPP.⁴⁸ Entergy explained that because the WPP models and software did not successfully complete simulation trials, the ICT was unable to support an October 2008 effective date for the start-up of the WPP. The language in the tariff indicated that the WPP would take effect on such date determined by the ICT and Entergy’s Weekly Operations business unit and approved by the Commission. The Commission accepted this amendment and required Entergy to file a software development progress report in January 2009 detailing the reasons for the continued delay in the WPP and the steps being taken to resolve the remaining issues that were postponing the start-up of the WPP.

On January 12, 2009, Entergy filed a software development progress report.⁴⁹ In this report, Entergy indicated that it had retained a consultant to assist in the review and audit of the algorithms and underlying logic of the model, identified a number of software improvements which it implemented, and uncovered a number of minor software coding issues. Additionally, Entergy indicated that it would make a section 205 filing to further modify Attachment V.

⁴⁶ *Entergy Operating Companies submits proposed revisions to Attachment V of their Open Access Transmission Tariff, FERC Electric Tariff, Third Revised Volume 3 under ER08-513*, January 31, 2008, Docket No. ER08-513-000.

⁴⁷ *Entergy Services, Inc.*, 123 FERC ¶ 61,125 (2008).

⁴⁸ *Entergy Operating Companies submits proposed revisions to Attachment V of their Open Access Transmission tariff, FERC Electric Tariff, Third Revised Volume 3*, August 29, 2008, Docket No. ER08-513-000.

⁴⁹ *Software Development Progress Report of Entergy Services*, January 12, 2009, Docket No. ER08-513-000.

On January 16, 2009, Entergy proposed to amend Attachment V to limit supplier offers in the WPP to on-peak periods and eliminate PTP transmission service in the WPP. The ICT gave its final endorsement of the modified WPP on February 27, 2009, dependent upon the Commission approval of the recently proposed revisions to Attachment V. The Commission accepted the revisions on March 17, 2009, and the WPP began accepting bids for the operating week of March 28, 2009.⁵⁰ The WPP as implemented did not include off-peak bids or PTP transmission service.⁵¹

Cost of WPP Development

Audit staff evaluated the cost associated with the development and implementation of the WPP. Entergy initially budgeted \$8.2 million in 2004 to develop the WPP; however, the originally estimated budget continued to grow until the WPP was implemented. The budget increased to \$15.2 million in 2006, \$20 million in 2007, \$22.6 million in 2008, and finally \$25 million in 2009. The actual cost booked by Entergy to develop the WPP was \$24.8 million. The cost of developing the WPP consisted of:

- | | |
|--|-----------------|
| • Contract work | \$11.1 million |
| • Payroll and employee benefit and expenses | \$ 5.5 million |
| • Capital Suspense | \$ 4.25 million |
| • Allowance for funds used during construction | \$ 3.3 million |
| • Service Company Billings | \$.5 million |

As the WPP was being developed, Entergy charged the development costs to Account 107, Construction Work in Progress – Electric. Entergy accrued an AFUDC on this project from November 2004 to March 2009. On March 23, 2009, the completed cost of the WPP project was transferred from Account 107 to Account 101, Electric Plant in Service. As described below, audit staff is concerned that some costs were improperly capitalized to the WPP project that should have been expensed.

⁵⁰ *Entergy Services, Inc.*, 126 FERC ¶ 61,242 (2009).

⁵¹ *Entergy Operating Companies submits proposed revisions to Attachment V of their Open Access Transmission Tariff, FERC Electric Tariff, Third Revised Volume 3*, January 16, 2009, in Docket No. ER09-555-000.

Contract Work

The contract work relating to the WPP entailed the hiring of outside vendors to develop the functionality required by the WPP. Specifically, the contract work charged to the WPP project relating to software and hardware included Security Constrained Unit Commitment (SCUC) model engine development, software automation, consulting on design vendor evaluation, testing, and support. As outlined in response to audit staff's data requests, other contract work billed to the WPP project included costs associated with: (1) an outside law firm preparing tariff filings and providing other legal services, (2) SPP for support in the development of and filings for the ICT function in the WPP, and (3) project administration services provided by PMO Link, Inc.

Audit staff is concerned that Entergy charged to Account 107 (*i.e.*, capitalized) about \$1.05 million in legal costs for an outside law firm to provide support in preparing tariff filings and other legal services for the implementation of the WPP. Entergy also charged to Account 107 \$1.9 million for services provided by SPP which included (1) developing control procedures for ICT functions related to the WPP and (2) the development and filing of tariffs with the Commission. In addition, Entergy accrued AFUDC on these legal costs and services provided by SPP.

Based on information supplied by Entergy, audit staff determined that all legal costs incurred relating to the preparation of tariff filings before the Commission for the implementation of the WPP should have been expensed as incurred rather than capitalized to the WPP project. . Instead, such legal expenses are related to formal cases before the Commission and are properly includable in Account 928. Furthermore, audit staff determined it was also inappropriate for Entergy to capitalize costs for services provided by SPP for developing control procedures for ICT functions related to the WPP and the development and filing of tariffs with the Commission. These costs should have been directly expensed when they were incurred to the appropriate expense account. The SPP costs that are related to formal cases before the Commission are properly includable in Account 928, while the other SPP costs that are related to the general operation of the company are properly includable in Account 923. In addition, Entergy should not have accrued AFUDC on these improperly capitalized costs.

Subsequent to the completion of audit staff's fieldwork, Entergy stated that the legal costs incurred were not solely related to the preparation of tariff filings with the Commission and some of the costs were properly capitalized to Account 107. Based on additional information provided by Entergy, audit staff recommends Entergy conduct an independent review of the legal costs capitalized as part of the WPP project and determine whether such costs were properly capitalized as part of the WPP project.

Payroll and Employee Benefits Expense

Eighty-eight employees of Entergy directly charged the WPP project for payroll and employee benefits and expenses. These employees work for various Entergy organizations. Audit staff could not determine whether it was appropriate for 88 Entergy employees to directly charge to the WPP project for their time because the core group responsible for developing and implementing the WPP within Entergy, Entergy's Weekly Operations group, consists of a very few individuals. During the course of the audit, audit staff interviewed a sample of the 88 employees to get a better understanding of the services provided by these employees and how they tracked the time charged to the WPP. Specifically, audit staff interviewed seven employees selected at random that directly charged the WPP project for payroll and employee benefits and expenses. Audit staff determined that the work charged to the WPP project by three information technology employees appeared to contribute directly to the construction of the WPP. However, interviews with four other employees revealed that their time should have been expensed rather than capitalized.

Audit staff interviewed two employees that worked in the internal audit department. These individuals' time was charged to the WPP project for developing a preliminary audit risk analysis of the WPP project. The purpose of the risk analysis was to identify potential areas of risk to be audited in the future once the WPP had been developed and implemented. The majority of the time that was capitalized consisted of employee interviews aimed at fact-gathering and understanding the WPP as a whole. The third employee worked in the corporate finance division and was responsible for reviewing the WPP investment proposal. This employee reviews proposals for all Entergy investment that exceed \$15 million to identify any major problems before it is formally presented to the risk committee. The fourth employee worked as a secretary in the corporate quality control department. During the interview, the employee had a difficult time associating responsibilities to the construction of the WPP as the majority of her work was not project-specific. Entergy should have directly expensed rather than capitalized these costs since the work performed was unrelated to the construction of the WPP. Also, Entergy should not have capitalized AFUDC on these improperly capitalized direct charges.

Entergy employees were not required to describe on their timesheets the work they directly charged to the WPP project; rather, it was the responsibility of Entergy managers to verify that employees correctly charged their time. In other words, Entergy accepted the charges from these employees as valid costs to be included as part of the cost of developing the WPP project with limited verification. The verification consisted simply of approving such charges if Entergy management had reason to believe each employee should be making a charge to the WPP project. The verifications were not formally documented. Audit staff is concerned that Entergy did not employ strong enough verification procedures or controls in place to determine whether the charges by these 88

employees should have been charged to the WPP project. Accordingly, audit staff recommends Entergy conduct an independent review of the payroll and employee benefits and expenses capitalized as part of the WPP project and determine whether such costs were properly capitalized. Further, Entergy must strengthen its internal controls over labor charged to construction projects to ensure that only costs with a proven relationship to construction are capitalized.

Construction Overheads

Entergy charged two types of capital suspense to the WPP project: engineering and supervision (E&S) and administrative and general (A&G).⁵² Entergy assigned E&S and A&G to the WPP project by applying a budgeted rate (*i.e.*, percentage) to actual E&S and A&G amounts. Entergy told audit staff that rates used to assign E&S and A&G to the WPP project are reviewed and modified quarterly by its Finance Operations Center, if necessary. When asked to explain the rationale behind the E&S overhead rate, Entergy stated that the E&S rate is consistent overall to similar function-specific capital projects. In this case, the WPP is treated for accounting purposes as a construction project within the transmission function business unit. Therefore, the E&S charges relate to the salaries and benefits of Entergy's transmission function employees. Given audit staff's concerns with the capitalization of other costs in the WPP, audit staff believes that the overhead costs warrant additional study. Accordingly, audit staff recommends Entergy includes a review of construction overheads as part of the independent review to determine whether the overhead costs have a definite relationship to the WPP project.

⁵² Capital suspense is a category of Entergy's construction cost that includes overhead services allocated to all construction projects. According to Entergy's Capital Suspense Accounting Policy, the E&S and A&G costs include engineering, supervision, general office salaries and expenses, construction engineering and supervision by others than the accounting utility, law expenses, insurance, injuries and damages, relief and pensions, taxes and interest.

Recommendations

We recommend that Entergy:

9. Conduct an independent review of the following costs charged to the WPP project to ensure that the costs are properly chargeable as a component of construction cost in accordance with Electric Plant Instructions contained in the Uniform System of Accounts. The review should include:
 - Legal work;
 - Payroll and employee benefits and expenses;
 - Services provided by SPP; and
 - Construction overheads;
10. Provide audit staff, within 30 days of the issuance of the Final Audit Report, an engagement letter specifying the scope of the independent review;
11. File the results of the independent review with the Commission no later than 90 days from the date of the Final Audit Report;
12. Record and file, with supporting documentations, all correcting entries made as a result of the independent review; and
13. Adjust formula rate billings, as appropriate, and file a refund analysis with the Commission within 30 days.

4. Accuracy of Flexibility in the Weekly Procurement Process Model

The level of flexibility has been overstated (*i.e.*, beyond what is necessary to ensure low-cost reliable service to Entergy's native load) in the model used in the Weekly Procurement Process (WPP). Specifically, the flexibility constraint used in modeling the WPP was overstated by 600 megawatts for the period of June 20, 2009 to October 10, 2009 due to an error in the model input data provided by Entergy that limited third parties' ability to serve Entergy's native load. Additionally, there are indications that the manner in which flexibility is modeled has errors beyond the impact of this 600 megawatt overstatement. Since the level of flexibility has a direct effect on the success of the model, the manner in which flexibility is modeled may have restricted competition by limiting third parties' ability to compete to serve Entergy's native load.

Pertinent Guidance

The Commission provided input to Entergy on the WPP in a 2003 guidance order as follows:

“[The] WPP [is] intended to facilitate the continued integration of merchant generation and wholesale suppliers into the procurement process Entergy uses to serve its native load customers and to establish additional mechanisms for granting short-term firm transmission service.”⁵³

“Under the proposed Weekly Procurement Process, merchant generators and other suppliers that are not Entergy affiliates may submit bids to the Entergy Transmission Function to compete against EMO to serve part of Entergy's native load. The Entergy Transmission Function would compare the bids (taking security, reliability constraints, must-take provisions, and ancillary service requirements) into consideration and determine a least-cost procurement.”⁵⁴

“On a short-term basis, the costs that Entergy can avoid are its variable costs. Thus, it claims that under the proposed auction, its Transmission Function will accept a bid to provide short-term energy if the costs of the bid are less than the variable costs of Entergy's existing network resources. We agree that this is an appropriate decision guide for purchases. Furthermore, for merchant generators needing to recover some fixed costs in sales under the auction, we would expect that a competing merchant generator, with newer, more efficient gas-fired

⁵³ *Id.* at P 1.

⁵⁴ *Id.* at P 8.

generators, would be able to compete against Entergy's older generators and bid its variable costs plus some additional amount that would contribute to its fixed costs.”⁵⁵

The Commission provided further guidance to Entergy on the WPP in the 2006 order conditionally approving the ICT proposal as follows:

“The WPP is designed to allow merchant generation and other wholesale suppliers to compete to serve Entergy’s native load customers through bids submitted to Entergy’s Weekly Operations.”⁵⁶

Attachment V, Section 3.4, Resource Flexibility of Entergy’s OATT, states in part:

3.4.1 Each WPP Participant may specify the total amount of flexible resources (MW) following the close of the WPP that must be expected to be available to the WPP Participant during the WPP Operating Week to meet the requirements of its Network Load.

3.4.2 Flexible resources are resources that can be de-committed or dispatched down or up under the terms of the offer during the WPP Operating Week. EMO may specify the notice provisions required for its flexible resource requirement.

3.4.3 In determining the level of flexible resources it requires, EMO shall determine the amount of flexibility required to account for load following requirements, generator imbalances, third-party schedules, qualifying facility put rights, and load forecast errors, and to provide sufficient flexibility to permit EMO to make economy purchases. EMO shall make such determination based on recent operating history and expected conditions projected out to the end of the applicable WPP Operating Week.

Attachment V, Section 4.2.4.2, of Entergy’s OATT states in part:

Weekly Operations shall establish, and the ICT shall post on OASIS, a separate \$/MWh amount for each of the following soft constraints included in the optimization runs: (a) intra-hour flexibility, (b) daily flexibility, (c) hourly flexibility, (d) line flow limits, (e) AGC, (f) hourly reserves, (g)

⁵⁵ *Id.* at P 33.

⁵⁶ 104 FERC ¶ 61,336 at P 1-2 (2003).

intra-hour reserves, (h) WPP Participant load balance, (i) plant generation, (j) maximum starts for a generator, and (k) load pocket requirements.

Attachment V, Section 3.0, Cost Information, Load Information, and Offers from Third Parties of Entergy's OATT, states in part:

3.1.1.1 EMO will provide cost information to Weekly Operations for the following generating resources that EMO expects to be available for scheduling during the WPP Operating Week:

3.1.3.1 Subject to Section 3.1.3.2, cost data submitted by a WPP Participant [EMO] for its existing Network Resources shall reflect the projected variable production costs of running the applicable resources.

3.2 Loads and Operating Reserves: The forecast of hourly Network Load for each WPP Participant [EMO] for the WPP Operating Week shall be developed on the same basis as the forecasted hourly Network Loads are developed for use in the AFC process. Each WPP Participant [EMO] shall provide Weekly Operations and the ICT with the WPP Participant's [EMO's] Operating Reserve obligations expected to apply during the WPP Operating Week.

3.3.1 Each supplier seeking to sell energy to a WPP Participant [EMO] through the WPP shall submit an offer to such WPP Participant [EMO] in accordance with any rules established by the WPP Participant [EMO] and consistent with the requirements of the WPP.

Background

As discussed above, the WPP is intended to facilitate the continued integration of merchant generation and wholesale suppliers into the procurement process Entergy uses to serve its native load customers. The fundamental logic behind the WPP is to provide merchant generators and third-party suppliers a means to submit bids and compete to serve Entergy's native load each week.

By means of the WPP, third-party suppliers have the opportunity to replace Entergy's legacy oil and gas units as designated network resources for a given week through the WPP. As outlined by the Commission in its order providing guidance on the WPP, third parties compete against Entergy's older, less-efficient generators by submitting bids from its new, more efficient generators.⁵⁷ Since the third parties submit offers from more efficient generating units, the Commission anticipated a bid to be at a

⁵⁷ *Id.* at P 33.

price that includes the third-party's variable cost (including start ups), plus an additional amount toward its fixed costs.

In actual operations, Entergy commits and dispatches its legacy units in a manner that allows operating flexibility. The units are committed for firm capacity purposes but dispatched at low operating levels to allow the injection of unscheduled QF power and the procurement of low cost economy energy in short term energy markets (*i.e.*, daily and hourly). If either QF power or economy power is not available, then the legacy units can be ramped up to higher operating levels to meet the system demands. In addition these units are available to operate at higher levels for other unforeseen operating conditions that may materialize over the commitment period such as the unexpected loss of a base-load unit or unanticipated changes in system load.

Within the WPP modeling there is an attempt to pattern the model's commitment and dispatch of the simulated generation resources to provide such operating flexibility. In order to capture this real-time flexibility, the model employs modeling techniques that the software developers believe will properly account for and value flexibility of operations to the Entergy system. The particular technique employed in the WPP is termed the "flexibility constraint."

The WPP model is designed to provide an optimized solution that minimizes production costs while adhering to generator operating characteristics, bid offer structure, and the constraints of the Entergy system. System constraints in the WPP software are both "hard" and "soft." Hard constraints are those that cannot be violated by the model and are therefore inelastic. Soft constraints may be violated by the model in the optimization runs based upon penalty values developed by the Energy Management Organization business unit (EMO). The flexibility constraint is considered a soft constraint and can be changed by manual examination and manipulation of the model results to an extent permissible and unilaterally determined by the EMO.

Through audit staff's independent analyses and discussions with members of Entergy's EMO business unit, the staff of Entergy's Weekly Operations business unit, and the employees of the Independent Coordinator of Transmission (ICT), it is clear that violations of the flexibility constraint are the most frequent reason for not accepting economic bids.

The Flexibility Constraint

The flexibility requirement value can have a significant impact on the WPP results. Consequently, the accuracy of the flexibility requirement is tied directly to the model's economics. If the model constraint has a level of flexibility higher than what is needed in real-time, then it is possible that economic third-party offers were improperly excluded in the WPP and, therefore, the model solution was not optimized. On the other

hand, if the model constraint has a level of flexibility lower than what is needed in real-time, then it is possible that economic third-party offers were improperly included in the WPP – to the detriment of system reliability. Accordingly, the accuracy of the flexibility requirement value is directly related to the accuracy and success of the WPP.

Under the terms of the current tariff, EMO has the sole authority to calculate and provide all input data to the WPP model, including the required level of flexibility. Under the OATT, flexibility should be considered when evaluating alternative power suppliers to account for load-following requirements, generator imbalances, third-party schedules, qualifying facility put rights, load forecast errors, and to provide sufficient flexibility to permit the EMO to make economy purchases during the WPP Operating Week. However, the specific level of flexibility required is not specified in the OATT, so Entergy has total discretionary authority over the level specified in the model.

The audit team is concerned that the EMO's discretion to introduce flexibility for purposes other than reliability concerns⁵⁸ (e.g. to allow economy energy purchases, or perhaps to favor its own legacy units purported ability to provide flexibility) presents conflict of interest concerns. As long as Entergy is the entity registered to ensure reliability, the EMO's primary role of ensuring adequate flexibility is appropriate for reliability-related flexibility. However, the manner in which alternative economy power purchases are modeled by means of an exogenously produced flexibility variable may create a bias favoring economy energy over the WPP bids. Such an approach appears to violate the principle of creating effective competition between the alternative power suppliers and Entergy's own legacy units.

To forecast system conditions and develop inputs for the calculation of flexibility, the EMO uses a weekly production cost model. Once the production cost model is run, flexibility values are developed using formulas and uploaded to the WPP model. From March 23, 2009 to June 20, 2009, the EMO used a manual process to calculate the formulas and input values to the WPP. On June 20, 2009, Entergy implemented a new production cost model developed by Ventyx known as the Generation Management Resource Optimizer (Resource Optimizer) as well as a program application developed by Science Applications International Corporation (SAIC) to automate the process of calculating and uploading flexibility values.

⁵⁸ Audit staff is not contesting the need for the responsible entity for ensuring reliability to ensure that the WPP appropriately considers reliability concerns in the selected mix of generation resources. At the current time the responsible entity for reliability is Entergy.

Flexibility Calculation - 600 Megawatt Error

The audit team became aware that the Entergy EMO has in fact run the WPP with an additional 600 megawatts of flexibility beyond the level EMO had intended for the period of June 20, 2009 to October 10, 2009.

In September 2009, more than six months after the WPP was implemented, the ICT noted that the SCUC model was producing significant hourly flexibility requirement violations. As a result, the ICT performed a sensitivity analysis to identify the cause of the excessive violations. The ICT determined that the model could not solve this problem with the given values for hourly flexibility, and requested that the EMO compare unit commitment schedules from the production cost model used to develop the flexibility requirement.

In its review of commitment schedules, the EMO determined that starting with the WPP operating week of June 20, 2009, the hourly flexibility requirement was set 600 megawatts (MW) higher than the EMO had intended. In its investigation, the EMO determined the error stemmed from the EMO's implementation of the new production cost model and programming application – implemented on June 20, 2009.

The EMO determined that when it replaced the manual process for calculating flexibility formulas with an automated programming application, the hourly flexibility formula contained a “sign” error: Instead of subtracting out a specific component, the component was erroneously added. EMO's investigation into the error concluded that the error increased the hourly flexibility requirements by 600 MW compared to the level it intended to submit.

Audit staff inquired about the software implementation process used for the new software. Entergy claims that, after SAIC delivered the new software, EMO employees tested the model by reviewing the flexibility values produced by the programming application. EMO determined that the flexibility requirements appeared consistent with the ranges of hourly flexibility requirements for previous WPP operating weeks. However, audit staff conducted an independent analysis of the values and determined the flexibility values being produced were not consistent with recent operating history.

Audit staff sampled the WPP operating week beginning June 6, 2009 (two weeks before the implementation of the new software) as well as two weeks during the period before the correction of the 600 MW calculation error (between June 20, 2009 and October 10, 2009). Upon comparison of these values, on average, the hourly flexibility requirement value was set 997 MW higher using the new programming application during those two weeks than for the week of June 6, 2009. Furthermore, audit staff notes that, on average, the 600-MW error resulted in more than a 15 percent increase in the flexibility requirement value for every hour.

In its response to audit staff's data request, Entergy asserted that some changes in the flexibility requirement values were expected due to the concurrent replacement of the production cost model and minor refinements made to the flexibility calculation. However, Entergy officials also said that refinements made were immaterial, because they affected the daily flexibility calculation only; the calculation of hourly flexibility was not changed.

EMO corrected the hourly flexibility requirement calculation and, beginning with the WPP run for the operating week of October 10, 2009, the corrected program has been used.

To determine the impact this error had on the model's results, audit staff requested that Entergy re-run the WPP model using the correct hourly flexibility levels for a 25 percent sample of WPP Operating Weeks from June 20, 2009 to October 10, 2009. In a phone conference discussing this issue, Entergy resisted re-running the model on three grounds: (1) it would be mere "idle curiosity;" (2) it was too expensive; and (3) the results would be inconclusive because the impact was "indeterminate." Sensitive to concerns about incurring unnecessary expenses, audit staff asked the basis upon which the cost estimates were based and an explanation of why relaxing flexibility would not be expected to allow a higher likelihood of acceptance of bids. When Entergy could not support its contentions, audit staff followed up with a request to re-run the model for part of the time.

This table summarizes the impact the correction of the error had on the model's results:⁵⁹

Operating Week	Change in Number of Bids Accepted	Savings Lost Due to Flex Error
A	3	\$212,100
B	2	\$286,512
C	2	\$33,857
D	5	\$785,505
TOTAL	12	\$1,317,974

⁵⁹ The estimated savings are based upon the Commission-approved methodology for estimating savings obtained under the WPP.

This sample indicates that:

- Greater participation in the WPP would have been possible had the overstated flexibility requirement not been imposed in the WPP modeling; and
- The impact of the flexibility requirement in allowing WPP bids to be accepted is profound and clearly demonstrated.

In addition, audit staff believes the existence of this significant error demonstrates that the new programming application for the WPP was insufficiently reviewed and tested before implementation. This raises serious concerns about EMO's ability to perform quality control over the software developed for the WPP. It also suggests that the ICT has a sufficient understanding of the WPP to proactively identify problems and address them in a timely manner.

Components of Flexibility

As part of its proactive approach to identifying issues in the WPP, the ICT conducts high-level "sanity checks"⁶⁰ of the flexibility requirement being imposed by Entergy in the WPP by determining whether the data supplied by the EMO permits Entergy's own generation resources to provide the necessary level of flexibility before incorporating third-party bids. The ICT employees indicated that on several occasions Entergy's own units were unable to satisfy the flexibility requirement and the test failed. The fact that the data fails such a simple, base-level test indicates that either (1) the required flexibility has been inflated or (2) that the data being used in the determination of the flexibility variable is inconsistent with the data that is being used in the WPP.

Audit staff notes that EMO's inability to satisfy the flexibility requirements with its own resources is a recurrent problem in the WPP modeling. This fact has led to a technique to mitigate the problem by adjusting the initial flexibility requirement used in the EMO run (Run 0), with a lower requirement in the run in which third party bids are introduced (Run 1). The purpose of this technique is to avoid penalizing the integration of third party bids in Run 1 for EMO's inability to satisfy the flexibility requirement with its own units. While audit staff believes that this practice does provide a degree of mitigation, it should not be used as a justification for not resolving the underlying problem of accurately modeling flexibility.

Under the terms of the OATT, the EMO is solely responsible for compiling all input data for the WPP model, including flexibility and the specification of the EMO

⁶⁰ ICT staff indicated that the check involved examining the unloaded generation on the EMO units.

generation resources to meet this flexibility objective. The ICT is not authorized to approve the model inputs and therefore simply performs high level cursory reviews of the data before the WPP model is run. Accordingly, the ICT does not have the authority to review and oversee the operation of the production cost model used to develop the majority of the input data. Under the present structure, the ICT is doing all that is within its authority in this regard. Entergy is responsible for ensuring that all model input data is accurate. However, audit staff noted that the ICT, not Entergy, identified the flexibility calculation error. The identification process was indirect and based upon an analysis of model results, rather than addressing the inputs to the model directly. Given these circumstances, audit staff believes Entergy must strengthen its controls over the EMO's input data.

Recommendations

14. We recommend that Entergy strengthen its controls over the data the EMO uses in the WPP model.

5. Accuracy of the Weekly Procurement Process Results

The Weekly Procurement Process (WPP) model contained a bias in logic for at least the period from March 23, 2009 to September 2, 2009 that may have caused the results of the WPP to be inaccurate. The logic bias existed in the model's complex process of properly evaluating and integrating bid cost structure into the WPP model and became a difficult problem to resolve. Entergy became aware of this bias as early as September 2008⁶¹ but failed to adequately address the issue until the ICT formally requested the model logic be tested and verified in August 2009. Entergy and the ICT implemented an interim process on September 2, 2009 and deployed a permanent software fix on November 18, 2009.

Pertinent Guidance

Attachment V, Section 4.2.4.5 of Entergy's OATT, states in part:

For all other soft constraint violations, other than violations related to a supplier's offer parameters, Weekly Operations and the ICT each will analyze whether it believes that (a) accepting the results of the WPP would compromise system reliability, (b) accepting the results of the WPP would significantly increase transmission loading relief events, or (c) the tradeoff between exceeding a soft constraint and denying service through the WPP is not reasonable. Weekly Operations and the ICT will discuss Weekly Operations' conclusions in this regard and the ICT's independent analysis. If after such discussions Weekly Operations believes that accepting the results of the WPP would compromise system reliability, significantly increase TLR events, or result in an unreasonable tradeoff between exceeding a soft constraint and denying service through the WPP, then no offers will be accepted or transmission service granted through the WPP for the applicable WPP Operating Week, and transmission service will revert to the service available prior to implementation of the WPP for that week.

Attachment V, Section 6.2 of Entergy's OATT, states in part:

The ICT shall review all information provided to it in accordance with Section 5 of this Attachment V. The ICT also shall review for WPP Implementation and WPP modeling.

⁶¹ Based upon a confidential risk assessment performed by a team of Entergy's consultants, audit staff believes that this bias has been known by Entergy since September 2008.

Background

Beginning in April 2009, after the WPP results were finalized for the applicable WPP operating week, the ICT began running sensitivity analyses for that week's model results. The purpose of the analysis was to proactively identify potential issues in the WPP that may warrant further investigation. In the sensitivity analyses, the ICT selectively removes offers that were selected by the model to determine whether production costs could be further reduced by forcing the model to change its selection of bids offered.

In August 2009, the ICT observed instances during their sensitivity analyses which indicated that the WPP software logic may be flawed. Accordingly, the ICT formally requested that the modeling logic be tested and verified. The ICT noted that the model was selecting offers that may not have maximized production cost savings due to the structure of the bids. This was not an instance in which the production cost of the selected bids was increased above the level that would exist absent the acceptance of the results (*i.e.*, the results of Run 0, which solves for the optimal Entergy commitment without WPP bids), but rather that the bid selections in Run 1, the model solution which includes the WPP bids, did not result in a solution which was globally optimal. In such a circumstance, a comparison of the Run 1 to Run 0 model results would not achieve the greatest possible savings, and might favor a more costly bidder over a lower cost bidder.

When Entergy's total system load began to fall after the summer peak and natural gas prices fell, the ICT identified the potential bias in the WPP model logic through its sensitivity analysis. As a result, the ICT informed Entergy's Weekly Operations business unit of the potential bias in the WPP logic in August 2009. Accordingly, the ICT and the Weekly Operations business unit began further testing and exploration of the issue.

Upon further examination, the ICT and Entergy's Weekly Operations business unit confirmed that the structure of certain bids might, under specific conditions, create a bias that would favor a selection of one bidder over another. However due to the "hold-harmless" provision of the WPP, the bias should never result in a selection that would increase and transfer modeled costs to retail loads.

The ICT and Weekly Operations determined that, as the summer progressed and the Entergy system experienced peak loads, the impact of any logic bias was considerably masked by an increasingly greater number of bids selected, hindering the ICT from identifying the issue sooner through its sensitivity analyses. It is unknown whether the failure to identify the bias earlier resulted in fewer bids being selected and adversely affect the power suppliers as a group.

The ICT and the Weekly Operations business unit implemented an interim process for running the WPP on September 2, 2009. This process was deemed "interim" since it

would be used only for the period during which the issue was investigated, and a permanent software modification could be proposed and adequately tested. In the interim, before performing the final SCUC run, each supplier offer was tested individually to determine whether the offer was economic on a stand-alone basis. All economic offers were then included in Run 1.

The Weekly Operation business unit and Ventyx worked to develop a permanent solution to address the model's bias and communicated the information to Ventyx to develop a permanent software fix. Ventyx delivered the modified version of the WPP SCUC model to Entergy on November 9, 2009.

Entergy's Weekly Operations business unit and the ICT conducted extensive testing of the WPP SCUC model and determined that the potential bias in the model had been reduced but not entirely eliminated by the improved software. The new version was implemented, and the interim process was discontinued on November 18, 2009. However, because the potential for bias was not totally eliminated, Entergy indicated to the Commission that it intended not to publicly post the full nature of the modeling errors that had been discovered and fixed.

Audit staff is concerned that the participants in the WPP may lose confidence in the process and reduce their participation. Potential suppliers are not provided access to software algorithms that determine bid selection and, in large part, may structure their bid strategy upon a trial-and-error bid submission process. If Entergy alters the underlying selection process, then any prior knowledge of the selection process, gained through the bid process, is lost. Bidders are therefore subject to increased risk during their future bidding process. Entergy's increasing the risk in this manner will likely lower participation over time. Since Entergy believes that the bidders should not be informed of the changes made to the selection process, Entergy is increasing the risk to bidders. The length of time before the logic bias was fully investigated and corrected is troubling and raises several major concerns:

- The ICT, rather than Entergy, demonstrated a willingness to proactively monitor, analyze, and seek correction of model errors; and
- The ICT appears to understand the model and be in a position to direct appropriate changes.

Recommendations

We recommend that Entergy:

15. Develop a procedure for Weekly Operations to perform detailed sensitivity analyses of model results each week; and
16. Schedule a weekly conference call with the ICT to discuss and compare analysis results to identify any potential software and modeling issues.

6. Use of Secondary Network Transmission Service

Entergy's marketing function improperly reserved secondary network transmission service eight times to support off-system sales during the audit period.

Pertinent Guidance

Entergy's OATT, Part III, Network Integration Transmission Service – Preamble states that “network integration transmission service also may be used by the network customer to deliver economy energy purchases to its network load from non-designated resources on an as-available basis without additional charge. Transmission service for sales to non-designated loads will be provided pursuant to the applicable terms and conditions of Part II [point-to-point transmission service] of the tariff.”

Entergy's OATT, Section 28.4, Secondary Service, states:

The network customer may use the transmission provider's transmission system to deliver energy to its network loads from resources that have not been designated as network resources. Such energy shall be transmitted, on an as-available basis, at no additional charge.

In Order No. 890, the Commission stated that a network customer or transmission provider inappropriately using network transmission service to support off-system sales should be subject to unreserved use penalties.⁶²

Background

Entergy's Open Access Transmission Tariff (OATT) provides secondary network transmission service to its network customers to serve network load from nondesignated network resources on an as-available basis at no additional charge. However, a network customer can reserve secondary network transmission service only to serve its designated network load. In other words, a network customer cannot reserve secondary network service to support a sale to nondesignated load. A sale to nondesignated load is referred to as an off-system sale.

The audit staff's analysis determined that Entergy's marketing function reserved and confirmed eight secondary network transmission service requests from June 2007 to

⁶² See *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 118 FERC ¶ 61,119 at P 842 (2007) at P 816 and P 817, Order 890-A, 121 FERC ¶ 61,297 (2007) at P 431, and Order No. 890-B, 123 FERC ¶ 61,299 (2008).

January 2010 to deliver energy across Entergy's transmission system from Entergy to non-designated loads. These eight reservations encompassed 13 hours.

Specifically, Entergy's marketing function confirmed seven secondary network transmission service requests on Entergy (EES) to the Louisiana Generating, LLC (LAGN) transmission path, representing 843 MWh, and one on EES to the City of Conway (CNWY) transmission path, representing 300 MWh. Entergy did not have any designated network load in the LAGN or CNWY control areas; therefore it intended to reserve the secondary network transmission service to support off-system sales. Of the eight confirmed requests, three were scheduled for energy delivery to LAGN, representing 202 MWh.

Entergy explained that its marketing function acted as a designated agent to submit these secondary network transmission service requests on behalf of other network customers (*i.e.*, LAGN and CNWY) using these network customers' transmission service. However, Entergy acknowledged in a written response to an audit staff data request that it did not have any written agreement with other network customers such as LAGN that designated Entergy's marketing function as a Network Integration Transmission Service (NITS) agent to permit Entergy's marketing function to exercise another network customer's rights and perform another network customers' obligations under the NITS agreement.

Audit staff's review of applications and agreements for NITS determined that neither CNWY nor LAGN designated Entergy's marketing function as its agent with respect to its NITS agreement. In fact, in its NITS agreement, CNWY designated Constellation Energy Commodities Group, Inc. as its NITS agent. Similarly, NRG Power Marketing, LLC, owned by NRG Energy, Inc., acts as an agent on behalf of LAGN to reserve and schedule secondary network transmission service – and LAGN is also owned by NRG Energy, Inc.

Entergy's marketing function should have requested point-to-point (PTP) transmission service instead of secondary network transmission service, since it intended to use the transmission service for sales to nondesignated loads. Audit staff determined that by improperly reserving secondary network transmission service, Entergy's marketing function avoided paying PTP transmission charges and obtained higher curtailment priority. Audit staff calculated the avoided PTP transmission charges totaling \$4,435 based on rates for hourly non-firm point-to-point transmission service.

Recommendations:

We recommend that Entergy:

17. Set up controls to prevent marketing function employees from reserving secondary network service to serve off-system sales and provide the set controls to audit staff for review;
18. Develop training programs for its marketing function employees responsible for reserving and/or scheduling secondary network service to ensure that secondary network service is only reserved to serve Entergy's native load customers, unless reserved on behalf of another network customer pursuant to an executed agent agreement. Entergy should provide this training program to audit staff for review;
19. Develop a training program for its transmission function employees responsible for approving transmission schedules to ensure NITS customers, including Entergy's marketing function, properly use secondary network service. Entergy should provide this training program to audit staff for review;
20. Pay from its marketing function the avoided PTP charges and submit supporting documentation showing all calculations; and
21. Arrange to notify all parties to existing NITS agreements that if they desire to grant any other party, including but not limited to Entergy, the right to act as their agent, that there must be an executed agent agreement in place prior to allowing another party to exercise their rights and perform their obligations under the NITS agreement. Such a condition should also be inserted into the standard NITS agreement to be used in future NITS agreements between parties using the Entergy transmission system. Entergy should file the revised NITS agreement with the Commission.

7. Reporting of Transmission Capacity Reassignment

Entergy did not report 12 reassignments of transmission capacity in its Electric Quarterly Report (EQR) filings to the Commission. Further, Entergy did not report accurate information for 30 reassignments in its EQR filings.

Pertinent Guidance

In Order No. 890, the Commission established a new requirement, as clarified in Order Nos. 890-A, and 890-B, regarding the reassignment of transmission capacity.⁶³ Under the new requirement, a transmission provider must have a transmission capacity reassignment agreement with each assignee receiving capacity, and that agreement must be reported in the transmission provider's EQR filings.

Further, the Commission clarified that this reporting requirement applies to all transmission capacity reassignments made on and after May 14, 2007, which was the effective date of Order No. 890. The transmission providers that previously had not reported capacity reassignments were required to revise and re-file their EQRs by October 31, 2008.⁶⁴

Background

Audit staff's review of reassignments of transmission capacity supplied by Entergy determined that Entergy failed to report 12 reassignments of transmission capacity in EQR filings from the effective date of Order No. 890 to December 31, 2009, representing 18 percent of total reassignment transactions.⁶⁵

Also, Entergy reported inaccurate information for 30 reassignments in the 2nd Quarter 2007 through 4th Quarter 2009 EQR filings. The inaccurate information involved many EQR data fields including quantity, rate, and transaction beginning and ending dates.

⁶³ Order No. 890 at P 816 and P 817, Order 890-A at P 431, and Order No. 890-B at P 84.

⁶⁴ *Notice providing Guidance on the filing of Information on Transmission Capacity Reassignments in Electric Quarterly Reports*, FERC Stats. & Regs. ¶ 61,244 (September 18, 2008).

⁶⁵ Entergy has not reported 20 capacity reassignments since May 14, 2007, the effective date of Order No. 890. Audit staff determined 12 unreported capacity reassignments since the effective date of Order No. 890-A (March 17, 2008).

Entergy stated that its failure to report reassignments was caused by the automation software of Areva's e-terra solutions Open Access Same-time Information System (OASIS), which did not recognize these reassignments when Entergy employees queried the OASIS during its preparation of EQR filings.

Audit staff determined that all 12 unreported reassignments occurred before Entergy's transition to a new OASIS.⁶⁶ However, of the 30 reassignments that were inaccurate, nine occurred after the new OASIS commenced operation in September 2009.

Recommendations

We recommend that Entergy:

22. File all unreported transmission capacity reassignments in its EQR as required by Order No. 890;
23. Correct inaccurate reassignment information, and update EQR filings;
24. Update processes and procedures for filing an EQR to ensure that accurate information is reported in its EQR filings. Entergy should provide updated procedures to audit staff for review; and
25. Develop controls to ensure all transmission capacity reassignments are completely and accurately reported in its EQR filings. Entergy should provide test results of controls to audit staff for review.

⁶⁶ Entergy migrated from the Areva's e-terra solutions OASIS system to the webOASIS application hosted by Open Access Technology International, Inc. in September 2009.

V. Areas of Reliability Concern

Audit Staff identified two specific reliability areas of concern which were the subject of March 18, 2010 Commission orders. Entergy should consider taking actions proactively to address these concerns, in order to enhance the reliability of the Bulk-Power System (BPS). In a January 2009 guidance order, the Commission advised that if a NERC or Regional Entity compliance audit team “learns about a situation that does not appear to involve a current or ongoing violation of a Reliability Standard requirement, but instead represents an area of concern that could become a violation, we expect the team to notify the registered entity of the situation, discuss it with the entity, and document such discussion in the compliance audit report.”⁶⁷ Consistent with this advice, audit staff is documenting their concerns in areas that, at least, currently expose Entergy to reliability risks and that may lead to violations of Reliability Standards. Audit staff believes that Entergy’s failure to address these issues proactively could lead to future non-compliance with Reliability Standards. The two areas of concern involve: (1) Entergy’s interruption of non-consequential load in response to single contingency events; and (2) Entergy’s evaluation of protection system non-operation for single contingency events.

1. Interruption of Non-Consequential Load in Response to Single Contingency Events

Audit staff found that in planning its system to respond to a single contingency event, Entergy currently relies on curtailment of load that is not directly served by elements that are removed from service as a result of the single contingency.

Pertinent Guidance

The TPL series of Reliability Standards is intended to ensure that the transmission system is planned and designed to meet an appropriate and specific set of reliability criteria.⁶⁸ Reliability Standard TPL-002-0 specifically addresses system performance under contingency conditions involving the failure of a single element, known as a single contingency.⁶⁹ These specific requirements for system performance under single contingency conditions are set forth in Category B of Table I of the Reliability Standard.

⁶⁷ *Compliance with Mandatory Reliability Standards*, 126 FERC ¶ 61,038 at P13 (2009).

⁶⁸ Order No. 693, FERC Stats. & Regs. ¶ 31,242 at P 1683 (2006).

⁶⁹ The NERC Glossary defines “contingency” as “The unexpected failure or outage of a system component, such as a generator, transmission line, circuit breaker, switch or other electrical element.”

Table I, which is entitled “Transmission System Standards – Normal and Emergency Conditions,” identifies different categories of contingencies that planners must use to test the system and the required system performance based on the type of contingency. Pursuant to TPL-002-0, for contingencies in Category B of Table I (“Events Resulting in the Loss of a Single Element”), an entity registered as a Transmission Planner or a Planning Authority (Entergy is registered for both functions) must ensure that the transmission system remains stable and that both thermal and voltage limits remain within applicable ratings. Table I further states that a Category B contingency must not result in cascading outages or loss of demand, or curtailment of firm transfers. The statement prohibiting loss of demand is supplemented by footnote (b) of Table I, which states:

Planned or controlled interruption of electric supply to radial customers or some local Network customers, connected to or supplied by the Faulted element or by the affected area, may occur in certain areas without impacting the overall reliability of the interconnected transmission systems. To prepare for the next contingency, system adjustments are permitted, including curtailments of contracted Firm (non-recallable reserved) electric power Transfers.

In Order No. 693, when approving TPL-002-0 as mandatory and enforceable, the Commission provided guidance relating to footnote (b) of Table I on the practice of shedding firm load that is not directly served by the elements that are removed from service as a result of a contingency, also known as “non-consequential load,”⁷⁰ for single contingency events. The Commission stated (emphasis added):

Based on the record before us, we believe that *the transmission planning Reliability Standard should not allow an entity to plan for the loss of non-consequential load in the event of a single contingency*. The Commission directs the ERO to clarify the Reliability Standard. Regarding the comments of Entergy and Northern Indiana that the Reliability Standard should allow entities to plan for the loss of firm service for a single contingency, the Commission finds that their comments may be considered through the Reliability Standards development process. However, we strongly discourage an approach that reflects the lowest common denominator.^[71] The Commission also clarifies that an entity may seek a

⁷⁰ Consequential load is the load that is directly served by the elements that are removed from service as a result of a contingency. Order No. 693 n. 461.

⁷¹ Here, at n.462, the Commission referred to Order No. 672 at P 329.

regional difference to the Reliability Standard from the ERO for case-specific circumstances.^[72]

Following commencement of this audit, the Commission on March 18, 2010 reaffirmed its commitment to eliminating the use of non-consequential load shedding for single contingencies by ordering NERC to submit by June 30, 2010 a modification of Table I, footnote (b) of TPL-002-0 that complies with the Commission's directive in Paragraph 1794 of Order No. 693.⁷³ Subsequent requests for rehearing have been denied, but the Commission has granted NERC an extension of time requiring that the revised version of TPL-002-0 be submitted no later than March 31, 2011.⁷⁴ The Commission noted in its order on rehearing that:

We believe that a regional difference, or a case-specific exception process that can be technically justified, to plan for the loss of [non-consequential] firm service 'at the fringes of various systems' would be an acceptable approach. Thus, the Commission did not dictate a single solution as NERC and others now claim. In any event, NERC must provide a strong technical justification for its proposal.^[75]

After it is approved by the Commission as mandatory and enforceable, this revised Reliability Standard presumably will prohibit the use of non-consequential load shedding for single contingencies, subject to any regional differences, exception processes or other technically justified differences that the Commission approves.

⁷² Order No. 693 at P 1794.

⁷³ *North American Electric Reliability Corp.*, 130 FERC ¶ 61,200 at P 10 (2010).

⁷⁴ *North American Electric Reliability Corp.*, 131 FERC ¶ 61,231 (2010).

⁷⁵ *Id.* at P 21.

Background

As part of its approval of the ICT proposal, the Commission required Entergy and the ICT to jointly submit to the Commission and state regulators a report detailing the differences between the 2009 ICT Base Plan and the 2009 -2011 Entergy Construction Plan (Differences Report). This report was submitted in Docket No. ER05-1065-000 on May 8, 2009. These plans represent the set of transmission upgrades that Entergy and the ICT each believe are required in order to meet their understanding and application of the relevant planning criteria and Commission-approved transmission planning Reliability Standards (*i.e.*, the TPL series).

Category 1 of the Differences Report reveals that ten projects included in the 2009 ICT Base Plan were specifically excluded in the 2009-2011 Entergy Construction Plan based upon the application of the ICT's planning criteria enhancements related to the shedding of non-consequential load. Category 1 of the Differences Report highlighted an obvious difference between Entergy and the ICT with regard to the usage of non-consequential load shedding. Entergy's position is that footnote (b) gives transmission planners the discretion to allow for interruptions of non-consequential firm load and for interruptions of consequential firm load following a single contingency.

Since the issuance of the Differences Report, Entergy has agreed to build the contested projects, but maintains that it need not, and has in fact not, altered its planning criteria.

Although Entergy has pledged to reduce the use of non-consequential load shedding for single contingencies during the 2010 planning cycle, Entergy has indicated that it does not plan on fully abandoning the use of non-consequential load shedding for single contingencies until 2013. Projections provided by Entergy show 284.77 MW of non-consequential load at risk during the summer of 2010. This amount should be reduced to 85.33 MW during the summer of 2012 based on Entergy's current 2010-2012 Construction Plan.

Although Entergy has set 2013 as its self-imposed deadline for eliminating the use of non-consequential load shedding for single contingencies, the Commission's March 31, 2011 deadline for NERC's filing of a modification of footnote (b) may produce a revised Reliability Standard that prohibits non-consequential load shedding for single contingencies, possibly subject to particular exceptions, that will be mandatory and enforceable before 2013, or Entergy's current schedule could be delayed. Audit staff is concerned that Entergy's current transmission planning practice of using non-consequential load shedding for single contingencies may not comply with NERC's revised Standard incorporating the directed modification of footnote (b). Audit staff recommends that Entergy take a proactive approach to compliance with respect to this issue by accelerating its phase-out of planning for non-consequential load-shedding for

single contingencies so as to ensure that Entergy will be in compliance with the forthcoming Reliability Standard when, or even before, it becomes mandatory and enforceable.

Recommendations

We recommend that Entergy:

26. Submit a yearly report to audit staff on the amount and locations of non-consequential load at risk for single contingency events and efforts Entergy has undertaken to reduce this risk of load loss; and
27. Submit a schedule for reducing and eliminating planning for the use of non-consequential load shedding for single contingencies to audit staff so as to be in compliance with the Reliability Standard containing the directed modification to footnote (b) at or before its effective date.

2. Evaluation of Protection System Non-Operation for Single Contingency Events

In its planning assessments, Entergy includes in its base case studies the effects of proper operation of existing and planned primary protection that may be activated in response to a single contingency event. However, it does not currently perform a study that takes into account the effect of backup or redundant protection systems that may be activated at the instant of a single contingency event, particularly if a single point of failure exists that could disable the primary and backup protection systems.

Pertinent Guidance

Reliability Standards TPL-001-0.1, TPL-002-0, TPL-003-0 and TPL-004-0 require annual “valid assessments” designed to determine if, taking into account planned changes in transmission and generation configuration, the system will adequately perform at all demand levels for a range of forecasted system demands over the course of certain time horizons. The planners perform these assessments through a series of computer simulation studies and other analyses.

A Transmission Planner and Planning Authority, such as Entergy, studies system performance by testing for the “contingencies” set forth in TPL Table I. The table establishes system performance requirements for four groups of contingencies designated as Categories A through D, depending on the number of system elements that are forced out of service as a result of the contingency. The modeling of each category of contingencies A through D is separately addressed in TPL-001-0 through TPL-004-0, respectively. Each of these Standards also sets forth, in its Requirement R1.3 and related sub-requirements, the scenarios that the planner must simulate in the models that apply the contingencies for the assessment to be “valid.”

TPL-002-0 requires that the planners model the performance of various scenarios when the system experiences Category B contingencies.⁷⁶ The modeling scenarios for Category B contingencies are set forth in Requirements R1.3.1 through R1.3.12.

Requirement R1.3.10 of TPL-002-0 states that planning assessments must “[i]nclude the effects of existing and planned protection systems, including any backup or redundant systems.” The Commission did not specifically address Requirement R1.3.10 when approving TPL-002-0 in Order No. 693 as mandatory and enforceable.

⁷⁶ Category B applies to contingencies resulting in the loss of a single element, defined as generator, transmission circuit, transformer, or single DC pole, with or without a fault.

On November 17, 2009, while this audit was in progress, NERC filed a petition in Docket No. RM10-6-000 requesting approval of its interpretation of Requirement R1.3.10 of TPL-002. NERC developed the interpretation in response to a request submitted to NERC by PacifiCorp on January 12, 2009.

On March 18, 2010, in response to NERC's filing, the Commission issued a Notice of Proposed Rulemaking in which the Commission proposed to reject NERC's proposed interpretation of Requirement R1.3.10 of TPL-002 and, instead, proposed an alternative interpretation of the provision. The Commission's proposed interpretation would require that the simulation account for the "effects of existing and planned protection systems, including any backup or redundant systems," by incorporating in a Transmission Planner's base case model the non-operation of the primary protection system as an existing condition on the system. The Commission explained that:

We propose to reject NERC's proposed interpretation of Reliability Standard TPL-002-0, Requirement R1.3.10. NERC proposes to interpret that simulations to assess the impact of single contingency operation "do [] not require an assessment of the Transmission System performance due to a Protection System failure or Protection System misoperation" to be in compliance with Requirement R1.3.10 of Reliability Standard TPL-002-0. NERC's proposed interpretation miscategorizes non-operation of non-redundant primary protection systems as protection system failure, which is addressed in TPL-003-0 and TPL-004-0. However, pursuant to TPL-002-0, planners are required to study the effects of existing and planned protection systems, including backup and redundant systems. Accordingly, by categorizing the non-operation of non-redundant primary protection systems as a protection system failure, NERC's proposed interpretation misses studying the effects of backup and redundant protection systems pursuant to Requirement R1.3.10 of TPL-002-0. Rather, for the reasons discussed below, we believe that the Requirement R1.3.10 of TPL-002-0 requires that planners study, in their system assessments, the non-operation of primary protection systems in order to ascertain whether and how reliance on the as-designed backup or redundant protection systems affects reliability. Accordingly, we propose an interpretation of Requirement R1.3.10 of Reliability Standard TPL-002-0 consistent with our understanding.

In support of our proposed interpretation, we explain that planning assessments are developed through base case simulations. We then distinguish a contingency from the base case, and conclude that the non-operation of a non-redundant primary protection system is not a contingency. Finally, we explain that normal clearing of a contingency

depends on the protection system that operates to clear the contingency, and that only by modeling the non-operation of non-redundant primary protection systems in the base case would the planner include the effects of existing and planned protection systems, including backup or redundant systems. For these reasons, our proposed interpretation would require modeling of the non-operation of primary protection systems to be in compliance with Requirement R1.3.10 of Reliability Standard TPL-002-000, and not by the requirements to be in compliance with Reliability Standards TPL-003-0 and TPL-004-0.^[77]

The Commission proposed that the interpretation of R1.3.10 discussed in the NOPR would apply prospectively from the effective date of any Final Rule and that no entity will be subject to financial penalties for having operated in a manner inconsistent with this proposed interpretation prior to the effective date of any Final Rule.⁷⁸ Numerous parties have filed comments and protests in response to the Commission's proposed interpretation.

Background

Audit staff found that Entergy's practice in implementing R1.3.10 is consistent with the NERC-approved interpretation of that provision of TPL-002-0. However, Entergy's practice is inconsistent with the interpretation proposed by the Commission. Entergy, as a matter of practice, only models the effects of primary protection on the performance of its system for Category B events, regardless of whether redundant primary protection exists. Additionally, Entergy states that it designs its protection systems to ensure that no single contingency event will lead to more than one breaker-to-breaker element out of service absent a protection system failure.

Entergy's practice of solely modeling the effects of primary protection will only guarantee compliance with TPL-002-0 R1.3.10, as the Commission proposes to interpret it, in cases where redundant primary protection is available. Entergy installs independent and redundant primary protection for facilities that operate at 345 kV or above. On facilities operating below 345 kV, Entergy in some instances does not apply redundant primary protections but rather one primary protection in addition to local backup and remote protection. The longer fault clearing times associated with local backup and remote protection are thus not considered by Entergy for Category B contingencies with respect to these facilities operating below 345 kV.

⁷⁷ *Interpretation of Transmission Planning Reliability Standard*, FERC Stats. & Regs. ¶ 32,655 at P 15-16 (2010).

⁷⁸ *Id.* at P 27.

As an additional consequence of the Commission's proposed interpretation of Requirement R1.3.10, planners would have to model protection systems that have "single points of protection system failure" by recognizing that the protection system may rely on remote backup protection, rather than local backup or redundant protection, in the case of a Category B contingency required to be studied pursuant to TPL-002-0. A single point of protection system failure can arise in cases where the primary protection and its local backup are not independent, such that non-operation of the primary protection also renders the local backup inoperable. For these protection systems, the backup protection that the model must account for is the remote protection that will operate in the event of the non-operation of the primary and local backup protection.

Entergy has not yet performed an analysis to identify all single points of protection system failure on its system. Until single points of failure are identified and their effects incorporated into protection system modeling used in planning studies, Entergy's planning studies are not consistent with the Commission's proposed interpretation.

For the reasons stated above, Entergy's current planning practices do not identify elements in its Protection System that could result in degradation of system reliability and will not satisfy TPL-002 Requirement R1.3.10 if the Commission's proposed interpretation becomes final. This will remain the case, should the proposed interpretation become final, until such time as Entergy performs appropriate analyses that are not included in its existing studies or implements a modification to its protection systems such that the modified systems are covered by the existing studies.

Audit staff acknowledges that the overwhelming majority of comments the Commission has received on its proposed interpretation of R1.3.10 disagree with the proposed interpretation and suggest that the potential costs of complying with the proposed interpretation, if made final, could be very large. Nevertheless, audit staff believes that Entergy could demonstrate a very strong proactive approach to compliance by taking steps to implement the proposed interpretation of R1.3.10 at this time, rather than waiting for the Commission's ultimate determination on its proposed interpretation.

Even more importantly, such steps should improve reliability, as NERC suggested in a March 30, 2009 industry advisory on events that resulted from a single point of protection system failure.⁷⁹ In that advisory, NERC stated that three significant disturbances of the Bulk Electric System since 2004 resulted from single failures of a protection system component. NERC recommended that:

⁷⁹ Industry Advisory: Protection System Single Point of Failure (March 30, 2009), viewable at www.nerc.com/fileUploads/File/Events%20Analysis/A-2009-03-31-10.pdf.

Transmission Owners, Generation Owners, and Distribution Providers owning protection systems installed on the Bulk Electric System are advised to address single-points-of-failure on their protection systems when identified in routine system evaluations to prevent N-1 transmission system contingencies from evolving into more severe or even extreme events. These entities are additionally advised to begin preparing an estimate of the resource commitment required to review, re-engineer, and develop a workable outage and construction schedule to address single points of failure on their protection systems.

The NERC advisory states that advisories are designed to improve reliability by disseminating critical reliability information and that the advisory is not the same as a reliability standard. The audit staff nevertheless believes that Entergy's commitment to follow this advisory pending the issuance of a final determination on the proposed interpretation bearing on single points of protection system failure would demonstrate a significant commitment by Entergy to compliance and to strengthening the reliability of its system.

Recommendations

28. We recommend that Entergy follow the recommendation in NERC's March 30, 2009 advisory on single points of protection system failure. Entergy could further consider developing an action plan with a schedule. Upon the completion of the process, Entergy should provide the initial analysis, the assessments and any action plan to audit staff for review.

VI. Other Matters

1. QF Puts

The large amounts of unscheduled injections of qualifying facility power (QF puts) create operational issues that impact transmission access in the Entergy service area. It is for this reason that the treatment of QF power in the Weekly Procurement Process (WPP) process significantly impacts the selection of alternative bidders. Of particular concern is the manner in which the WPP attempts to deal with the need for operational flexibility, both from reliability and economic perspectives. Therefore, a better understanding and potential management of the risks associated with QF puts should be implemented.

Background

In the Entergy footprint there are many large industrial loads that have constructed significant cogeneration facilities. These facilities are economically efficient and benefit society because they allow a more efficient utilization of natural gas as both an input in an industrial process (*i.e.*, steam) as well as being used to create electric power for the load of the host and also to sell to third parties. Crediting the fuel used for the steam process against the costs of generation creates an effective heat rate which is extremely low, making these units among the lowest variable cost units available. Under current Commission policy,⁸⁰ qualifying facilities (including qualifying cogenerators) that do not have access to competitive markets can require that the power they produce be purchased by utilities at a cost that reflects the costs that the utility would otherwise have incurred to meet its load obligations (*i.e.*, the avoided cost). Currently in the Entergy region the existing transmission infrastructure provides limited opportunities for this QF power to be fully integrated within the region or to be transmitted to alternative competitive markets outside the Entergy footprint. As a result, significant volumes of QF power are put onto the transmission grid of Entergy on an unscheduled basis.

The injection of large volumes of unscheduled QF power requires Entergy to operate its system in such a manner as to both allow this power to be produced and also to provide reliable power to its loads. Combining these two requirements in a least-cost

⁸⁰ The Energy Policy Act of 2005 significantly amended the purchase requirements of PURPA. As amended, Section 210(m) of PURPA authorizes the FERC to waive the obligation of an electric utility under Section 210 of PURPA to purchase the electricity offered to it by a QF (under a new contract or obligation) if the FERC finds the QF has nondiscriminatory access to one of three defined categories of competitive wholesale electricity markets. The statute permits such waivers to a particular QF or on a “service territory-wide basis.”

manner, while complying with all relevant regulations, is a complex issue. For example, as was discussed previously in this audit report, the flexibility of operations of the Entergy system is an issue in the WPP. At present, the WPP logic includes a requirement that flexibility of network generation resources be adequate to respond to the anticipated volatility of the QF puts. There must be units available online with sufficient capacity to respond to swings in the output from QF plants. The WPP modeling needs to properly treat the costs of providing this flexible capacity as well as the costs of providing the power that would replace or be displaced by the QF power. This treatment is essential in determining the optimal mix of network resources to commit and dispatch. Audit staff has examined the issue of QF puts in the course of this audit and believes that there are several key areas that could be explored to improve upon the manner in which QF puts impact the WPP. Efforts need to be made to:

- Reduce or better manage the volatility of the QF unscheduled deliveries of power; and
- Increase transmission infrastructure to allow for more efficient utilization of QF power.

Reducing or Managing Volatility

The attention being paid to the integration of variable output alternative energy projects currently under way in the electric power grid could and should be applied to QF puts as well. One technique that has shown itself very useful is the development of accurate models to predict the output from variable output renewal resources. Since much of the power produced by QFs follows an industrial process that may not match the electric power output to the needs of the Entergy loads, increased accuracy of forecasting QF output would clearly serve the best interests of all parties. The audit team notes that recently Entergy did make efforts to have QF generators submit scheduled output to Entergy to assist in this process. However, QFs have no obligation under PURPA to provide advance schedules of their power sales.

Providing advanced notice of anticipated deliveries could reduce uncertainty, enhance reliability, and more efficiently integrate the loads. Volatility might also be managed via alternative pricing mechanisms. Providing proper price signals would not only serve to better reflect the concept of “avoided costs,” but could also alter behavior by those QF facilities that have the ability to respond to price incentives.

Initiatives of this nature would reduce the need for an exogenously determined, flexibility constraint. Reducing the impact that this variable has upon the WPP outcomes would enhance participation of WPP suppliers and increase the opportunity to achieve the goals of the WPP.

Increased Transmission Infrastructure

The QF issues in the Entergy region also reflect the lack of a robust transmission system. Some areas in which QF power has developed have limited transmission infrastructure to effectively integrate the power. The current transmission capacity limits the efficient utilization of this least-cost resource. .

To resolve the transmission upgrade issues, audit staff believes that greater involvement of the ICT, as an independent entity capable of addressing complex and contentious issues, is an important element. Absent such an entity, the degree of distrust and questioning of motives and incentives may well thwart effective action. Audit staff has witnessed that the ICT, in its short life, has begun to involve greater stakeholder participation and confidence. It has done this directly and it has done this by means of its many working groups and committees. However there is a need for the ICT to be perceived as more independent, willing and able to address the concerns of the stakeholder community. With an enhanced role of an entity, such as the ICT, that is independent, displays greater transparency, and is responsive to the stakeholders, the likelihood for progress is enhanced.

Recommendations

We recommend that Entergy and the ICT work together to:

29. Explore ways in which enhanced forecasting of QF puts can be achieved and incorporated in the WPP; and
30. Examine cost-effective transmission expansion planning options to better integrate the QF puts.

2. Entergy's Actions in Response to NERC Reliability Alerts

Key Entergy staff, with important responsibilities for assuring the reliable operation of the Bulk-Power System, are either unaware of NERC alerts relevant to their functions or fail to give them due consideration. For example, several manager-level protection system experts were unaware of NERC's Protection System Single Point of Failure Advisory that had been issued on March 30, 2009, and took no action on at least two other Advisories.

Background

NERC alerts are broadly distributed to users, owners, and operators of the BPS in North America utilizing the NERC compliance registry. NERC alerts are critical to ensuring the reliability of the BPS and are divided into three distinct levels as follows:

1. Advisories – purely informational and not a response to NERC, intended to advise certain segments of the owners, operators and users of the BPS of findings and lessons learned;
2. Recommendations – specific actions that NERC is recommending be considered on a particular topic by certain segments of owners, operators, and users of the BPS according to each entity's facts and circumstances;
3. Essential Actions – specific actions that NERC has determined are essential for certain segments of owners, operators, or users of the BPS to take to ensure the reliability of the BPS.

When issuing advisories, NERC specifically states that, “[a]n Industry Advisory provides information to Registered Entities on specific, timely topics for the benefit of BPS reliability. This Advisory is not the same as a reliability standard, and your organization will not be subject to penalties for failure to address this Advisory. NERC is making this information available for such use as your organization deems appropriate in accordance with Rule 810 of NERC's Rules of Procedure; no particular response is necessary.”

NERC advisories are not mandatory reliability standards, however, NERC does not issue such advisories without due consideration. All issues addressed within the advisories represent real and critical threats to the reliability of the BPS. Many of these threats were a cause or contributor to significant disturbances to the BPS identified through NERC's event analysis or compliance processes.

Audits staff's analysis of these issues indicates three advisories that are of particular concern to the audit team:

- First, Entergy reserved any action on one protection system single point of failure advisory issued on March 30, 2009, which advised transmission owners, generator owners, and distribution providers owning protection systems installed in the BPS to address single points of failure on their protection systems to prevent N-1 transmission system contingencies from evolving into more severe or even extreme events. The Advisory specifically cited three disturbances where single points of failure in protection systems had led to significant loss of generation, loss of load, and cascading outages. Entities were advised to begin preparing an estimate required to review, re-engineer, and develop a workable outage and construction schedule to address single points of failure on their protection systems. Entergy chose not to take any action until NERC issued an industry-wide survey, which NERC has not yet done.
- Second, Entergy subject matter experts (SMEs) were not made aware of the power flow and dynamics modeling Advisory through Entergy. The Advisory addressed updating the power flow and dynamics models used in studies for determining thermal and dynamic system limitations necessary to ensure that simulations yield accurate results. Entergy SMEs learned of the Advisory through their participation in SERC committees; they were not informed of the Advisory by Entergy. Although Entergy challenges the receipt of this advisory from NERC, the distribution, however, indicated it was sent to all Transmission Operators and Planning Authorities. Entergy is registered for both of these functions.
- Third, Entergy did not give due weight to one advisory dealing with unexpected loss of generation due to low voltage. This advisory encouraged Generator Owners and Operators to review their under-voltage protection schemes and ensure that they were properly modeled to prevent unexpected tripping of generation. This type of event actually occurred during the Florida Blackout of 2008 and was one of NERC's motivations in preparing the alert. However, in an internal email to respond to this advisory, an Entergy manager of generation operations indicated that "Until mandated to do something in an approved standard we do not plan on doing this work."

In addition to these concerns regarding specific advisories, audit staff has concerns related to the procedure by which Entergy distributes NERC alerts. Prior to February 1, 2010, Entergy did not have a procedure for distribution of NERC alerts. However, even

the current procedure does not appear adequate. Audit staff review of the procedure effective February 1, 2010 indicates that this procedure is inadequate for the following reasons:

- The distribution list omits four of the eleven manager-level subject matter experts interviewed by audit staff. Failing to include several of these high level managers on the distribution list for NERC alerts undermines what should be the intent of the procedure, which is to get NERC Alerts into the hands of those who actually plan and operate the BPS.
- Entergy's procedure fails to prescribe any specific actions that should be taken in response to an Alert. Although the procedure discusses the preparation of a response to NERC for Recommendation and Urgent Action alerts it makes no mention of any analysis or other actions that should be undertaken in response to an Alert.

Staff is encouraged that Entergy has established procedures to ensure Advisories get into the hands of appropriate engineering staff. However, audit staff has remaining concerns that need to be addressed.

Recommendations

We recommend that Entergy:

31. Enhance formal policies and procedures to ensure the following: (1) that all NERC Alerts are provided to the appropriate technical personnel in a timely manner, and (2) that Entergy's technical experts produce a written evaluation of each Alert, including its applicability to Entergy and related action plans, to management; and
32. Complete a written evaluation, including applicability and any corrective action plans, of the following Advisories: (1) Protection System Single Point of Failure; (2) Unexpected Loss of Generation Due to Low Voltage on the System; and (3) Power Flow and Dynamics Modeling.

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Entergy Services, Inc.

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Docket No. PA10-1-000

*ENTERGY SERVICES, INC. RESPONSE
TO DRAFT AUDIT REPORT OF OCTOBER 14, 2010*

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October 22, 2010

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UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Entergy Services, Inc.

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Docket No. PA10-1-000

*COMMENTS OF ENTERGY SERVICES, INC.
ON THE OFFICE OF ENFORCEMENT, DIVISION OF AUDITS'
OCTOBER 14, 2010 DRAFT AUDIT REPORT*

Entergy Services, Inc. (“Entergy”) hereby provides its response to the Draft Audit Report (hereafter, “Draft Audit Report”, “Audit Report”, or “Report”) dated October 14, 2010.

EXECUTIVE SUMMARY

This proceeding concerns one of the most wide-ranging audits conducted in recent years by Commission Staff. On October 1, 2009, the Division of Audits (“DoA”) and Office of Electric Reliability (“OER”) (together, “Audit Staff”) commenced an audit of, *inter alia*, compliance with Entergy’s Open Access Transmission Tariff (“OATT”); the role of the Independent Coordinator of Transmission (“ICT”); implementation of the Availability Flowgate Methodology (“AFC”); development and implementation of the Weekly Procurement Process (“WPP”); and compliance with the mandatory reliability standards of the North American Electric Reliability Corporation (“NERC”). To probe these matters, Audit Staff propounded hundreds of interrogatories, issued extensive document production requests, and interviewed more than 50 Entergy employees.

Entergy appreciates Audit Staff’s hard work on these complex issues and its willingness to work constructively to narrow disputes, particularly those relating to its recommendations. Although Entergy disagrees with many of Staff’s specific factual findings, we can agree, in whole or in part, with *all* of Staff’s 32 recommendations. These recommendations—many of which concern the complex software issues associated with the AFC and WPP programs—are consistent with our continuing effort to improve these processes. As Audit Staff indicates, “Entergy has taken steps to address their quality control processes and procedures,” but there remains “room for improvement.” Audit Report at 1. We agree with this statement and therefore support Staff’s recommendations that provide, *inter alia*, for:

- Enhancing procedures to provide the ICT timely information regarding AFC values and to perform corrective actions to errors that the ICT identifies;
- Increasing the quality control of AFC data submitted to the ICT;
- Strengthening procedures to report errors in the calculation of AFCs and improving the transparency of AFC error reports;

- Strengthening the controls over the data that is provided as inputs to the WPP; and
- Developing a procedure to provide detailed sensitivity analyses of the WPP model results each week.

It is also important to underscore that, in addition to these improvements, Entergy has supported the Entergy Regional State Committee (“E-RSC”) process for considering broader changes, including potential membership by Entergy in a Regional Transmission Organization (“RTO”). The E-RSC recently approved two structural changes (each supported by Entergy) that would give the E-RSC, upon a unanimous vote, the authority to direct Entergy to make section 205 filings respecting transmission cost allocation and to add transmission projects to its construction plan. In addition, the E-RSC is working collaboratively with the Commission to sponsor a cost-benefit analysis of potential RTO membership, including the SPP RTO and the Midwest Independent System Transmission Operator RTO.

As noted above, however, we continue to disagree with many of the factual findings that support Audit Staff’s recommendations. Some of these disagreements were perhaps unavoidable given the complexity of the issues investigated. However, others reflect our objections to Staff’s characterizations of certain software errors and related problems as hindering “equal access” and as suggesting the need for greater “independence.” Audit Report at 1. We remain committed to improving our processes, but cannot agree with such characterizations. As we explain in detail below, Audit Staff’s criticisms fail to appreciate several important facts, including that (i) the AFC process has greatly expanded the amount of transmission service provided on the Entergy system since it was implemented, (ii) the WPP has facilitated significantly increased integration of merchant generation resources, (iii) errors that occurred in the AFC and WPP programs are not reflective of “independence” concerns because similar errors have plagued RTOs as well,¹ and (iv) Entergy’s ability to detect and report errors is a sign of a strong compliance program, not a weak one. *Compliance with Statutes, Regulations, and Orders*, 125 FERC ¶ 61,058 at P 20 (2008) (“*Policy Statement on Compliance*”) (“[i]mplementation of an aggressive compliance program and strong direction by senior management to search out and report regulatory compliance issues may result in an increase of violations self-reported to the Commission”).

Despite our strong disagreements with these findings, Entergy does not believe that it would be productive to litigate them given that Entergy has agreed to adopt all of Audit Staff’s recommendations. The public interest would not be served by delaying the implementation of these recommendations until the underlying factual disputes are resolved. We also note that any

¹ Letter Order, *New York Indep. Sys. Operator, Inc.*, 126 FERC ¶ 61,100 at PP 2, 18 (Feb. 9, 2009) (Expressing concerns over “lengthy delay” in reporting “input errors” that “resulted in increased uplift charges of approximately \$10.9 million.”); *See also Consol. Edison Co. of New York, Inc. v. FERC*, 347 F.3d 964, 968, 971 (D.C. Cir. 2003) (concerning “NYISO tariff violations and market design flaws,” “ar[is]ing from software problems”); *See, e.g., California Indep. Sys. Operator Corp.*, 126 FERC ¶ 61,221 at PP 3, 35 (noting concerns that “CAISO’s systems, software and tools have not been fully tested and that US DOE is not confident that MRTU will function properly” even after “more than six years of . . . redesign [of] the CAISO markets”), *order on reh’g and clarification*, 129 FERC ¶ 61,241 (2009).

broader concerns regarding “independence” issues are better considered in the context of the E-RSC processes for evaluating, *inter alia*, the benefits of RTO participation. The E-RSC provides a more productive forum for considering these issues than divisive litigation.

Entergy therefore urges the Commission, upon receipt of Audit Staff’s final report and this response, to adopt the recommendations, as discussed herein, and hold that no further proceedings are necessary to resolve the underlying factual disputes. In the typical audit, the Commission would issue an order noting these disagreements and giving the audited company 30 days to respond. 18 C.F.R. §41.1(b). As indicated, however, Entergy does not believe that further litigation of the disputed factual findings would be productive in this case and, in fact, would only delay implementation of the agreed-upon recommendations. Entergy therefore recommends that the Commission simply issue an order that adopts the recommendations as discussed herein.²

If, however, the Commission determines that further proceedings would be in the public interest, we note that it cannot, by regulation, decide these factual disputes in an initial order. 18 C.F.R. § 41.1(b) (“[a]ny initial order . . . shall note, *but not address on the merits*” disputes over findings or recommendations) (emphasis added). Although the Commission did not follow this approach in a recent case,³ we underscore our reservation of rights under Part 41 in the event the Commission intends to make findings on the disputed factual issues—a course we urge it not to take for the reasons discussed above.

Finally, we request that Audit Staff file our response in PA10-1-000 at the same time it files its final Audit Report. Because Audit Staff is barred from having off-the-record communications with the Commission in this matter (and certain matters concerning the ICT and WPP), the normal process—where Audit Staff circulates its report and the company’s response to the Commissioners and then the Commission issues an initial order—cannot occur. We therefore assume that Audit Staff will simply file its final Audit Report in the public docket for PA10-1-000 and, when it does so, we request that it attach our response as well.

² We also note that, by agreeing to Audit Staff’s recommendations, we are not, in any way, admitting to violations of any Commission order, regulation or tariff.

³ *Western Electricity Coordinating Council*, 132 FERC ¶ 61,149 (2010) (ruling on disputed findings without providing the 30 days notice provided in Section 41.1(b)).

ARGUMENT

I. Overview of the ICT and WPP

Both the ICT and WPP represent significant efforts—indeed, in the case of the WPP, virtually unprecedented efforts—by a utility outside an RTO to establish independent oversight and monitoring of its transmission system. Thus, before responding to Audit Staff’s specific findings, it is useful to review how Entergy—working with the Commission, its retail regulators, and its stakeholders—developed the ICT and WPP processes.

Entergy first formally proposed what ultimately became the ICT and WPP in 2003,⁴ but that proposal itself was a continuation of prior efforts. Since 1998, Entergy has supported and pursued the establishment of an independent entity to operate its transmission system.⁵ Entergy did not take these steps in a vacuum.⁶ Rather, ICT/WPP development has been a collective and iterative process. Both the ICT and WPP are products of multiple proceedings and technical conferences at the Commission, stakeholder meetings, and meetings with both Commission and State regulator technical staff. Stakeholder input and Commission review has occurred at every step of the way. We will not delve into these various filings and Commission orders in detail—they presumably are as well-known to Audit Staff and to the Commission. But it will be helpful nonetheless to summarize the lengthy public record.

On June 10, 2003, Entergy filed a declaratory order petition seeking guidance on the major elements of the WPP.⁷ On September 30, 2003, the Commission issued its guidance order and also directed Commission Staff to hold a technical conference.⁸ Incorporating the Commission’s guidance, input received at the technical conference, and input received at stakeholder meetings, Entergy filed an expanded WPP proposal on March 31, 2004.⁹ Consistent with the Commission’s instructions, numerous technical conferences and extensive discussions subsequently were held between Entergy and its customers and retail regulators throughout the remainder of the year.

⁴ Petition for Declaratory Order, *Entergy Servs., Inc.*, Docket No. EL03-132-000 (June 10, 2003) (“2003 WPP Petition”).

⁵ See Transmittal Letter, *Entergy Servs., Inc.*, Docket No. ER04-699-000, at 3 (Apr. 1, 2004) (“2004 WPP Proposal”).

⁶ *Id.* at 4. A history of Entergy’s extensive efforts to improve access to transmission service on Entergy’s system is included in *Entergy Services, Inc.*, 115 FERC ¶ 61,095 at PP 4-21 (2006) (“April 2006 Order”), *order on reh’g*, 116 FERC ¶ 61,275 (2006), *order granting clarification in part*, 119 FERC ¶ 61,013 (2007), *order on reh’g and clarification*, 122 FERC ¶ 61,216 (2008).

⁷ 2003 WPP Petition, *supra*.

⁸ *Entergy Servs., Inc.*, 104 FERC ¶ 61,336 (2003).

⁹ 2004 WPP Proposal, *supra*.

Responding to those discussions, Entergy proposed further ICT enhancements and sought additional Commission guidance on January 3, 2005.¹⁰ On March 22, 2005, the Commission approved the latest ICT, subject to certain specific modifications and conditions.¹¹ In response, Entergy submitted amended ICT and WPP proposals on May 27, 2005,¹² which the Commission conditionally approved (for a minimum term of four years) on April 24, 2006.¹³ Entergy thereafter made a number of compliance filings, which the Commission addressed in various orders.¹⁴

The ICT was installed on November 17, 2006, and enhancements have continued—with continued Commission *and* ICT oversight. On the one hand, as the Commission has recognized, “it is undisputed that having the ICT in place . . . has had a positive impact by providing increased transparency on, and non-discriminatory access to, the Entergy system.”¹⁵ At the same time, Entergy continues to explore potential reforms to the ICT structure (including the ICT’s stakeholder process) that could provide additional benefits to Entergy’s customers. Entergy also has been exploring possible alternatives to the ICT arrangement, such as whether participation in an RTO would provide even greater benefits. Commission Staff and Entergy’s retail regulators have had significant involvement in those processes.

Of course, the rollout of any new and unique system such as the WPP is no simple task. Entergy estimates that the Company, its software vendors, consultants and the ICT have spent over 116,000 man-hours to test and develop the WPP software (not including time spent by in-house and outside legal counsel). Over 120 people were involved in these efforts, some on a full-time or near full-time basis. Prior to WPP implementation, approximately 4000 tests runs were performed for the Security Constrained Unit Commitment (“SCUC”) software alone. By the time the WPP was implemented, 76 separate versions of the SCUC software had been developed by Ventyx Energy, LLC (“Ventyx,” formerly named New Energy Associates), the software vendor for the SCUC. Each version was extensively tested by the ICT, Entergy, and Ventyx.

Nonetheless, as actual implementation went forward, unexpected problems and delays occurred. The Draft Audit Report focuses on these inevitable consequences of rolling out a new and unprecedented procurement model, and we respond to Audit Staff’s findings and conclusions below. The point here, however, is that Entergy expeditiously responded to the

¹⁰ Petition for Declaratory Order, *Entergy Servs., Inc.*, Docket No. EL05-52-000 (Jan. 3, 2005).

¹¹ *Entergy Servs., Inc.*, 110 FERC ¶ 61,295, *order on clarification*, 111 FERC ¶ 61,222 (2005).

¹² Transmittal Letter, *Entergy Servs., Inc.*, Docket No. ER05-1065-000 (May 27, 2005).

¹³ April 2006 Order, *supra*.

¹⁴ *Entergy Servs., Inc.*, 119 FERC ¶ 61,187 (2007), *order on reh’g and clarification*, 122 FERC ¶ 61,216 (2008) (“May 2007 Order”); *Entergy Servs., Inc.*, 117 FERC ¶ 61,055 (2006) (“Oct. 2006 Order”).

¹⁵ *Entergy Servs., Inc.* 126 FERC ¶ 61,227 at P 79, *order on clarification*, 127 FERC ¶ 61,225 (2009).

problems as they arose *and kept the Commission and the ICT informed*. Thus, for example, Entergy made two filings to change the WPP as initially filed and approved by the Commission. First, on January 31, 2008, Entergy filed changes to better allow the SCUC to reach a dispatch solution.¹⁶ The Commission approved those changes on May 5, 2008.¹⁷

Second, on January 16, 2009, Entergy filed changes to the WPP that were recommended by the ICT after the ICT completed a review of the WPP structure as filed at that time.¹⁸ In particular, the ICT concluded that the WPP structure is in significant respects more complex than the energy markets that have been implemented by RTOs. The ICT ultimately recommended adoption of two changes to the WPP structure: (1) limiting supplier offers in the WPP to on-peak periods and (2) eliminating WPP point-to-point transmission service. The Commission accepted the Entergy's ICT-inspired OATT amendments on March 17, 2009.¹⁹

While these filing were pending, Entergy, the ICT, and Ventyx developed and tested the WPP software with the changes proposed in those filings. Among the additional testing, market trials were performed between February 14, 2009 and February 20, 2009. On February 27, 2009, the ICT submitted a letter to the Commission providing its final endorsement of the WPP with the filed changes.²⁰ The ICT certified that with those changes all WPP models and processes had been fully developed and tested, all criteria for WPP start-up were satisfied, and that all items that had to be completed prior to implementation had been completed. The WPP went live during the week of March 23, 2009.

II. *Audit Staff Concerns Regarding Independence*

The Audit Report expresses concern in several places about the lack of “independence” in the administration of the AFC and WPP programs. We explain below why these concerns are misplaced—including the fact that the ICT already has most of the authority Staff believes it should have—but note, at the outset, that Audit Staff's conclusions appear to rest principally on “concerns” expressed by market participants in interviews with staff. Report at 75 (“[T]here is a need for the ICT to be *perceived* as more independent, willing and able to address the *concerns* of the stakeholder community”) (emphasis added); *id.* at 19 (“Audit staff also assessed the

¹⁶ Transmittal Letter, *Entergy Servs., Inc.*, Docket No. ER08-513-000 (Jan. 31, 2008).

¹⁷ *Entergy Servs., Inc.*, 123 FERC ¶ 61,125 (2008). In response to the Commission's conclusion that “some amount of flexibility reflecting the tradeoff between exceeding a constraint and completely denying service through the Weekly Procurement Process in reasonable,” *id.* at P 30, Entergy filed amendments to implement the additional flexibility threshold on January 16, 2009, which the Commission approved on March 17, 2009. *Entergy Servs., Inc.*, 126 FERC ¶ 61,242 (2009).

¹⁸ Transmittal Letter, *Entergy Servs., Inc.*, Docket No. ER09-555-000 (Jan. 16, 2009) (“January 2009 Transmittal Letter”).

¹⁹ *Entergy Servs., Inc.*, 126 FERC ¶ 61,227 (2009).

²⁰ Letter from Southwest Power Pool, *Entergy Servs., Inc.*, Docket No. ER08-513-000 (Feb. 27, 2009).

degree of *confidence* that this software and the ICT’s oversight and involvement has provided to participants”) (emphasis added); *id.* at 56 (“Audit staff is concerned that the participants in the WPP may lose *confidence* in the process. . . .”) (emphasis added).

We do not see the fairness in an audit of stakeholder “concerns.” The fact that a market participant—whose duty is to maximize its own profits, not the public interest—has a “concern” about transmission access or power procurement is not a basis for a finding that independence is necessary. Order No. 890 held that independence is not required simply because market participants would prefer it.²¹ We do, however, see the due process problems with this approach because the substance of these conversations with market participants was never disclosed to Entergy.

We have the same objection to vague assertions that merchant generators “face significant obstacles” to obtaining transmission service because the system is not “robust” enough. *Id.* at 15 (“entities desiring transmission service into, through, or out of the Entergy footprint faced significant obstacles in securing firm reliable transmission service”); *id.* at 75 (“The QF issues in the Entergy region also reflect the lack of a robust transmission system”). Every generator on the Entergy system has the right to request OATT service, including firm transmission service that is supported by any necessary transmission upgrades. That is the law under Order Nos. 888 and 890. The real issue is *who should pay for those upgrades* and, on that issue, the Commission has approved participant funding for the Entergy System. *Entergy Servs., Inc.*, 115 FERC ¶ 61,095 (2006) (“April 2006 Order”). The Audit Staff may not agree with participant funding, but that is not a reason to turn a dispute over pricing into a suggestion that Entergy does not provide fair and open access.

Importantly, Audit Staff’s report does not include evidence of undue discrimination, but rather only identifies *errors* or *delays* in implementation of the AFC and WPP processes. We dispute many of these findings below, but the point here is that quality control and error reduction are not “independence” issues. RTOs have experienced the same types of errors in the implementation of their complex software programs. *New York Indep. Sys. Operator, Inc.*, 126 FERC ¶ 61,100 at PP 2, 18 (2009) (expressing concerns over “lengthy delay” in reporting “input errors” that “resulted in increased uplift charges of approximately \$10.9 million.”); *New York Indep. Sys. Operator, Inc.*, 126 FERC ¶ 61,100 (2009); *New York Indep. Sys. Operator, Inc.*, 115 FERC ¶ 61,026 (2006); *Exelon Generation Co., v. Southwest Power Pool, Inc.*, 101 FERC ¶ 61,226 (2002); *see also Consol. Edison Co.*, 347 F.3d at 968, 971 (concerning “NYISO tariff violations and market design flaws,” “ar[ising] from software problems”). Indeed, software errors and other errors implementing OATTs have never been found to be a basis to implement or expand independence over the subject matter at issue. *E.g.*, *Tenaska Power Servs. Co. v. Midwest Indep. Transmission Sys. Operator, Inc.*, 106 FERC ¶ 61,230 (2004); *Williams Energy*

²¹ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, FERC Stats. & Regs. ¶ 31,241 at PP 567-68, 624, 1099, 1138-40, *order on reh’g*, Order No. 890-A, 121 FERC ¶ 61,297, *order on reh’g*, Order No. 890-B, 123 FERC ¶ 61,299 (2008), *order on reh’g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on clarification*, Order No. 890-D, 129 FERC ¶ 61,126 (2009).

Mktg. & Trading Co. v. Southern Co. Servs., Inc., 101 FERC ¶ 61,144 (2002); *Idaho Power Co. v. PacifiCorp*, 95 FERC ¶ 61,148 (2001); *Powerex Corp. v. Western Area Power Admin.*, 95 FERC ¶ 61,241 (2001).

Entergy is not suggesting that the potential for greater independence should not be considered in the right forum. There is more independence today in the provision of transmission service on the Entergy system than on any major transmission system operating outside an RTO. Moreover, Entergy fully supports the E-RSC process that is considering potential RTO membership. Entergy has also supported providing the E-RSC, even prior to completion of the RTO studies, authority to direct Entergy to include additional transmission projects in its construction plan and to file changes in its transmission cost allocation methods. We therefore do not oppose considering the potential for greater independence in the proper forum. Our point here is that the errors and delays identified by Audit Staff are simply that—errors and software delays—that merit improvements in quality control and related processes, but are not evidence of undue discrimination.

III. AFC

A. Available Flowgate Capability-Related Errors on Entergy's System

1. Summary of Audit Staff Recommendations and Findings

The Draft Audit Report identifies the error reports that Entergy has previously filed with the Commission and makes two compliance-related findings regarding the reporting of such errors. Report at 21. First, the Draft Audit Report states that Entergy failed to report 20 AFC-related errors to the Commission. Second, the Draft Audit Report finds that Entergy failed to report two AFC Errors within the 15-day deadline established by the Commission's April 2006 Order conditionally accepting the ICT proposal. Based on this finding the Draft Audit Report recommends that Entergy "strengthen its procedures to report all AFC-related errors to the Commission within the required timeframe." *Id.* at 30.

In addition, the Draft Audit Report makes a number of other findings that are not instances of non-compliance with regulatory requirements, but that Audit Staff believes justify modifications to existing processes and procedures. These findings include Audit Staff's belief that: (i) AFC error reports lacked sufficient detail; (ii) Entergy is not compelled to accept the ICT's recommended corrective actions for data or software errors; and (iii) the ICT has limited ability to exercise its authority to review data inputs before incorporated into AFC calculations. *Id.* at 21. Based on these findings, the Draft Audit Report recommends that Entergy:

- Enhance existing procedures to provide the ICT information in a timely manner to: (a) evaluate changes to AFC values before posting and (b) validate the sufficiency of corrective actions taken to fix AFC-related errors.
- Enhance existing procedures to perform, in a timely manner, additional corrective actions the ICT directs to fix and prevent AFC-related errors.

- Improve transparency and detail in error reports filed with the Commission with certain identified information.
- Allow the ICT to determine which type of AFC-related errors justify an impact analysis and develop metrics to either specify specific harm or provide an appropriate qualitative indicator, if specific harm cannot be determined. *Id.* at 30.

As discussed further, while Entergy does not agree with many of the factual findings that serve as the basis for these recommendations, Entergy is willing to agree to the recommendations subject to the technical and practical limitations described below.

2. *Response to Audit Staff Findings*

a. *The Draft Audit Report's Finding that Entergy Failed to Report Twenty-Two AFC Errors Is Incorrect.*

Under the April 2006 Order, Entergy is required to notify the Commission, the ICT, and Entergy's users Group within 15 days if Entergy discovers that it has (1) lost data; (2) reported incorrect data; or (3) believes it has otherwise mismanaged data.²² In the Draft Audit Report, Audit Staff states that Entergy failed to report twenty (20) AFC-related errors to the Commission. However, with the exception of two events, the Draft Audit Report fails to identify which errors Audit Staff believes should have been reported. *Id.* at 21, 30. The Draft Audit Report does state that two (2) of these events were never reported to the Commission and the remaining eighteen (18) AFC-related events were reported by the ICT in the ICT's quarterly report.²³

Because the Draft Audit Report fails to identify which errors Audit Staff believes should have been reported, Entergy requested additional information from Audit Staff. In a separate document, Audit Staff identified the 20 events it believes should have been reported. The basis for identifying and classifying these 20 events as "errors" is not described in the Draft Audit Report. In many instances it appears that Audit Staff referenced sections of the ICT's Quarterly Reports but did not evaluate whether the events described therein meet the reporting requirements under the April 2006 Order or Audit Staff's own interpretation of those requirements. As described below, in most instances, either Entergy did report the events or the events did not constitute reportable errors under the April 2006 Order.

²² See April 2006 Order, 115 FERC ¶ 61,095 at P 10.

²³ Report at 25, 30. The Draft Audit Report also states that "Entergy has no obligation to report [AFC errors] to the ICT, and consequently the ICT may or may not be aware of the problem." *Id.* at 25. This statement is incorrect. The Commission's April 2006 Order Conditionally Approving the ICT explicitly requires Entergy to "notify the Commission, *the ICT* and Users Group within 15 days if Entergy discovers that it has lost data, or reported inaccurate data, or otherwise believes that it has mismanaged data." See April 2006 Order, 115 FERC ¶ 61,095 at P 110 (emphasis added). Further, the Commission's Order requires "[t]he ICT and IT experts from Entergy [to] meet quarterly with the Users Group so both Entergy and the ICT are made aware of any problems." *Id.* at P 109.

Entergy has previously provided a spreadsheet that responds to each of the events that the Staff indicated it believed should have been reported to the Commission. As that analysis shows, the 20 events identified by Audit Staff can be categorized as follows:

- Five (5) of these events were, in fact, reported to the Commission in Docket No. ER05-1065.
- Thirteen (13) of the remaining events were not reportable based on the April 2006 Order. In the majority of these circumstances, the event did not constitute a reportable event because (1) the error was discovered in testing, which did not affect AFCs in real-time; (2) the result was a known design component of the AFC software or models, which did not constitute an error, or (3) no data error occurred because certain data files, not used for AFC calculation, are provided for informational purposes only and do not constitute reportable errors if they contain inaccurate data. In none of these events was data lost, inaccurately reported, or mismanaged, pursuant to the Commission's reporting requirements.
- The remaining two (2) events took place in 2007 and neither Entergy (nor Audit Staff) have sufficient information to determine whether the events described constituted reportable AFC Events. (We note that, in an earlier draft, Staff identified 22 events, of which it alleged that were four unreported, and now identifies only 20, of which two are alleged to be unreported. We do not know which events Staff has deleted and the foregoing categorization is therefore made using our best judgment.)

Audit Staff's conclusion that two events that should have been reported were actually never reported at all to the Commission is incorrect. Those two events were not reported because they did not involve lost data, a report of inaccurate data, or otherwise mismanaged data. As an example of the type of event that Audit Staff believes Entergy should have reported, one of these events involved a network connection issue that, for a period of hours, temporarily prevented the ICT from accessing certain internet web addresses due to network address changes. The connection issue was resolved when the ICT was apprised of the new network configuration. The event did not result in Entergy losing data or reporting inaccurate data, and had no impact on AFC values or the granting of transmission service. Even under Audit Staff's interpretation of the April 2006 Order, *see* Report at 23 ("Audit staff interprets the reporting criteria . . . to cover all data that the ICT relies upon to grant and deny Transmission Service Requests"), this event does not qualify as reportable.

Even if Audit Staff disagrees with Entergy's assessment above, the Audit Report should note there is no evidence that these instances reflect any bad faith or deliberate attempt on Entergy's part to under report errors. It bears noting that since the reporting requirement went into effect Entergy has made considerable efforts to comply with the error reporting requirement in good faith. No other utility in the country of which we are aware is subject to such requirements and the criteria themselves are not always clear. To manage the difficulties presented by such a requirement, Entergy developed, and subsequently modified and improved, specific procedures for ensuring that data-related issues are evaluated for reportability and that an auditable trail is created for such evaluations. Pursuant to those procedures, through July

2010, Entergy has filed 66 reports with the Commission identifying 106 separate issues. These reports demonstrate that Entergy has reported insignificant, as well as significant, errors to the Commission, and has not attempted to artificially limit the number of reports filed. For example, of these 106, approximately 18 involved OASIS posting issues which did not impact any AFC calculations; 39 errors could have potentially affected AFC, but of those, 19 were present in the AFC process for periods of a day or less. These efforts collectively demonstrate that, to the extent certain events should have been reported but were not, such mistakes were made in good-faith without any intent to under-report AFC-related errors. The Commission has recognized that aggressive detection and reporting are evidence of a strong compliance program, not a weak one. *Compliance with Statutes, Regulations, and Orders*, 125 FERC ¶ 61,058 at P 20 (2008) (“*Policy Statement on Compliance*”) (“[i]mplementation of an aggressive compliance program and strong direction by senior management to search out and report regulatory compliance issues may result in an increase of violations self-reported to the Commission”).

In any event, consistent with our commitment to quality control and compliance, Entergy is willing to agree to Staff’s recommendations regarding improvements to reporting procedures as discussed in the recommendations section below.²⁴

- b. *The Two AFC Error Reports Identified As Untimely by the Draft Audit Report Were Immediately Filed With the Commission as Soon as Entergy’s Review Concluded That One Event Was Reportable and the Other Review Could Not be Completed in Time.*

The Draft Audit Report identified two AFC Errors as being submitted beyond the April 2006 Order’s 15-day time frame for reporting data-related errors. As explained below, in both instances, Entergy did not report the event within 15 days of first learning of the event because it initially appeared that the event was not reportable. When Entergy subsequently concluded that one event was reportable and its analysis of the other event was going to be further delayed, it reported each event to the Commission within 15 days of reaching that conclusion.

One of the AFC error reports identified as being submitted beyond the 15-day time frame concerns the failure of OASIS Automation (an AFC software application) to capture redirected TSRs in “study” mode during resynchronizations. Report at 27. Entergy and the ICT discussed this issue on February 23, 2007 and on April 4, 2007,²⁵ but Entergy did not deem the event

²⁴ In October 2007, Entergy improved its procedures for logging data-related events and evaluating those events for reportability. The revised procedure ensures that information related to events that are determined not to be reportable is retained so that an auditable trail is available as to Entergy’s rationale for the reportability determination. This procedure has helped to minimize instances where reportability decisions cannot be reconstructed.

²⁵ Consistent with the April 2006 Order the ICT (not Entergy) is the party responsible for granting and denying transmission service requests. OASIS Automation is the software application that applies AFC values to individual TSRs, and the ICT (not Entergy) is now the primary user of this software application. Because the ICT is now the primary user of this application, it is to be expected that the ICT will discover errors that Entergy does not given the ICT’s use of that application.

reportable at that time because no data had been lost, reported inaccurately, or otherwise appeared to have erroneously impacted AFC values or TSRs. As explained by the ICT's Quarterly Report, "a simple manual work around of hot keying a reservation back to received status could be used to force OA to recalculate the request."²⁶ Entergy and the ICT agreed that a manual work around would be implemented by the ICT to prevent the software issue from impacting TSRs, pending the completion of a software modification being developed by AREVA, the software vendor. However, on June 1, 2007, the ICT notified Entergy that the manual work-around was no longer capable of mitigating any impact on TSRs or AFCs. According to the ICT, the manual work around had been effective, but it had become increasingly difficult to implement, and by June it no longer effectively resolved the issue. Based on that new information, Entergy determined that a reportable error had now occurred, and Entergy reported the issue to the Commission on June 15, 2007, within 15-days of determining that this software issue was actually reportable under the April 2006 Order.

For these reasons, Entergy does not agree that it failed to timely report the issue described above within the April 2006 Order's 15-day time frame. Entergy initially (and reasonably) determined that the issue was not reportable because no data had been lost, reported inaccurately, or otherwise appeared to have been erroneously impacting AFC values or TSRs. As soon as Entergy learned that AFC values and TSRs may have been impacted, Entergy reevaluated the issue, began developing a report to the Commission and ultimately filed that report within 15 days of determining the issue constituted a reportable error.

The second event identified by the Audit Report as untimely filed concerns Entergy's reporting of a Network Resource Designation ("NRD") values associated with two generation facilities. *Id.* at 26-27. The NRD values are a software configuration parameter that act as a "back-stop" to prevent the automated dispatch logic in the AFC software from dispatching network resources above the amount of the applicable OASIS reservations, as reduced by any applicable undesignations.²⁷ To the extent the automatic dispatch logic dispatches a unit at a lower output level, the NRD value is not used to adjust the dispatch or otherwise calculation AFC values. On September 28, 2009, in the course of conducting quality control tests related to installing new AFC software components, Entergy discovered that the NRD values for two facilities were not correct. Because the NRD values did not result in Entergy losing data, Entergy began evaluating whether these settings actually impacted AFC values and would thus

²⁶ See *Indep. Coordinator of Transmission (ICT) for Entergy Quarterly Report, March 1, 2007 to May 31, 2007*, Docket No. ER05-1065-000 at 39 (June 27, 2007).

²⁷ Order No. 890 required that the calculation of AFC values take into account instances where all or part of a network resource is temporarily undesignated, but directed NAESB to develop standards for how such undesignations should be taken into account in AFC calculations. See Order No. 890 at PP 1541, 1543; Order No. 890-A at P 949. Although NAESB had not developed the undesignation standards at that time, the ICT requested that Entergy develop a process for addressing undesignations prior to the completion of the NAESB standards. Entergy agreed and the NRD values are part of the process that Entergy developed.

still be reportable.²⁸ Entergy concluded its preliminary analysis on December 6, 2009. Although Entergy had not uncovered any instance where the incorrect NRD values impacted AFC values or TSRs, Entergy decided that conclusively determining that was the case would require additional analysis and time. Rather than complete that analysis, Entergy decided to file an AFC Error report with respect to the NRD values out of an abundance of caution. The report was filed on December 19, 2007. However, on January 4, 2010, Union Power Partners (“UPP”) filed a Motion for Leave to File Comments and Comments regarding Entergy’s December, 17, 2009 report, seeking more information about that report.²⁹ Given the request for additional information, Entergy changed course and decided to complete the analysis discussed above. After comparing the unit commitment files and power flow models for the month, Entergy determined that there were no instances where the incorrect NRD values were used or in any way impacted AFC calculations or TSRs because the relevant generating facilities had not been dispatched above the correct NRD values. Entergy provided this information to the ICT on April 13, 2010, and the ICT included this information in the First Quarter Report on March 31, 2010. The ICT also included this information in a presentation to stakeholders at the SPC Meeting on May 12, 2010. No stakeholders requested additional information from Entergy on this issue. Because no data was lost, reported inaccurately, or otherwise erroneously impacted AFC values or TSRs, Entergy does not believe that this event ultimately turned out to be a reportable event.

Regardless, to the extent the Draft Audit Report’s finding are based on the assumption that Entergy must report data-related events to the Commission even if Entergy has not had the opportunity to conduct an inquiry into whether a reportable error actually occurred, Entergy does not agree that such an interpretation of the Commission’s order is reasonable. To the extent Audit Staff believes that Entergy should have moved more quickly to evaluate these issues, it bears noting that these are the only two events—out of a total of 106 reported errors—where Entergy’s evaluation of reportability caused it to report an issue outside of the 15-day time period. These facts demonstrate that any delay in reporting these two instances were the result of Entergy’s good-faith efforts to evaluate the relevant circumstances. Given the complexity of AFC calculations and TSR evaluations and the extent of Entergy’s efforts to manage the reporting process, these instances are not indicative of a significant compliance failure on Entergy’s part. Nevertheless, as discussed in the recommendations section, Entergy has no objection to further improving its existing processes and procedures related to error reporting.

²⁸ Since the NRD values are not used unless the automatic dispatch logic attempts to dispatch these units above a specified level, and since the two units involved are not base load units, it was likely that the NRD values had no impact on AFC values or TSRs.

²⁹ See Motion for Leave To File Comments and Comments of Union Power Partners, L.P., *Entergy Servs., Inc.*, Docket No. ER05-1065-000 (Jan. 4, 2010) (“UPP Comments”).

- c. *The Draft Audit Report’s Characterization of the ICT’s Authority and Entergy’s Implementation of ICT Corrective Actions is Inaccurate.*

With respect to the ICT’s authority to propose corrective actions regarding the AFC process, the Draft Audit Report states that, “any recommended corrective action the ICT proposed to remedy AFC-related errors by itself does not compel Entergy to accept such corrective action. . . .” *Id.* at 25. The Draft Audit Report also states that, “the ICT indicated that in most cases Entergy has adopted [sic] ICT recommended action, but not as swiftly as the ICT wished.” *Id.* Both of these statements paint an inaccurate picture of the ICT’s authority and interactions with Entergy.

First, the assumption in the Draft Report that the ICT lacks authority to compel software changes to the AFC process is inconsistent with the plain language of Entergy’s OATT and the FERC’s approval of the ICT arrangement. Section 8.3 of the Transmission Service Protocol appended to Attachment S of the Entergy OATT states (emphasis added):

The ICT will have authority to direct the Transmission Provider to modify the AFC Software, Base Case Models or data inputs to ensure that the AFC values are calculated in a manner consistent with the AFC Criteria posted on OASIS. If the ICT and the Transmission Provider cannot agree on a modification to the AFC Software, Base Case Models or data inputs proposed by the ICT under this section, the ICT’s position shall control and serve as the basis for evaluating TSRs pending resolution of any such disagreement. To the extent the ICT directs a modification under this section, the ICT shall also have the authority to direct the resynchronization of AFC values after the modification is implemented.

In the April 2006 Order, the Commission further stated, “the ICT will have authority to direct Entergy to modify *the AFC software*, Base Case Models or data inputs to ensure that the AFC values are calculated in a manner consistent with the AFC criteria posted on OASIS. If the ICT and Entergy cannot agree on a modification to *the AFC Software*, Base Case Models or data inputs proposed by the ICT, the ICT’s position shall control and shall be used to evaluate transmission service requests pending resolution of any such disagreement.” Report at 25. Audit Staff’s suggestion that the ICT does not have the ability to require Entergy to adopt a particular corrective action is incorrect.³⁰

Second, Entergy has adopted all corrective actions that the ICT has directed Entergy to take—not “most” as the Draft Audit Report suggests. To the extent the ICT has determined that a specific corrective action must be taken to correct an AFC error, Entergy has implemented those corrective actions. Otherwise, the ICT would have been obligated under Attachment S to the Entergy OATT to file a report with the Commission describing the disagreement. No such reports have been filed, and the ICT itself informed Audit Staff of this fact in writing, stating that:

“There have been no disputes between the SPP-ICT and Entergy in the granting of transmission access that have required implementation of the dispute resolution process described in Attachment S.”³¹ To be sure, in some instances, Entergy has persuaded the ICT that a proposed action was technically infeasible or otherwise problematic and the ICT has agreed and withdrawn the request. Audit Staff seems to suggest that there is something improper with the ICT and Entergy reaching agreement on proposed corrective actions. *See id.* To the contrary, there is nothing wrong with such actions and the tariff language approved by the Commission, in fact, requires Entergy and the ICT to use informal dispute resolution procedures to prevent disagreements from being filed with the Commission.³²

The Draft Audit Report also states that, “[i]n an interview between the ICT and audit staff, the ICT said it has a limited ability to exercise its authority to ensure the accuracy of AFC values when frequent data exchanges occur.” *Id.* at 25. Based on this interview, the Draft Audit Report recommends that Entergy “provide the ICT with the necessary information in a timely manner to . . . evaluate changes to AFC values before posting . . .” *Id.* at 9.

The Draft Audit Report is unclear as to the scope of Staff’s concern, but Entergy’s understanding is that this concern is limited to AFC calculations that take place in the Operating and Planning Horizons (*i.e.*, days 1-31 for which AFC values are calculated). In the Operating Horizon, which includes all hours of the current day and (after noon on the current day) all hours for the next day, AFC values are recalculated and posted on an *hourly* basis. As part of this recalculation process (referred to as “resynchronization”), certain data inputs are updated during each hourly resynchronization (*e.g.*, transmission reservations, schedules, transmission outages, etc.), while other data inputs are incorporated into each hourly resynchronization but are only updated once or twice per day (*e.g.*, customer dispatch, load forecast, base model, etc.). In the Planning Horizon, which picks up at the end of the Operating Horizon and runs through day 31, AFC values are recalculated and posted four times per day. Data inputs that are updated during each hourly resynchronization in Operating Horizon are updated four times per day in the Planning Horizon, while the other data inputs are updated once or twice per day (*e.g.*, customer dispatch, load forecast, base model, etc.).

As this discussion demonstrates, the challenge associated with reviewing data inputs prior to impacting AFC values is *not* that Entergy has failed to timely provide the ICT with information. Instead, the challenge is that the frequency of resynchronizations of AFC values in the Operating and Planning Horizons and certain data input updates in those horizons occurs too frequently for the *ex ante* review that Staff now proposes. Thus, Audit Staff’s recommendation that the ICT evaluate all data input changes *prior* to those data inputs being incorporated into posted AFC values is not practical given the current data update frequencies established by the Entergy OATT and related business practices. Entergy does agree that the data inputs that are updated once or twice per day possibly could be reviewed by the ICT prior to incorporation into

³¹ See ICT Response to Data Request 9.

³² See Entergy OATT, Attachment S, § 4; *see also* April 2006 Order, 115 FERC ¶ 61,095 at P118.

AFC values and has no objection to the ICT doing so. However, in order to comply with a literal reach of this recommendation, Entergy potentially would have to modify its OATT and/or business practice documents to reduce the frequency of such calculations and updates. While we are willing to consider modifications to allow the ICT to review data input changes prior to posting AFC values, these technical limitations must be taken into account.

These statements highlight the problems with relying on un-transcribed and unsupported statements supposedly made by third-parties. Although the Audit Staff relies on these statements as the sole basis for Recommendation Nos. 2 and 3, the Draft Audit Report never identifies any specific instance where Entergy failed to make a corrective action the ICT determined was necessary to address an AFC error or timely provide the ICT with sufficient information to evaluate a corrective action or data input change impacting AFC values. Nor does it appear that Audit Staff has conducted any independent analysis or review to evaluate whether any delays in implementing corrective actions were associated with the AFC software vendors, rather than Entergy itself. Audit Staff's findings therefore have no discernible support.

d. *The Draft Audit Report's Discussion of the "Long-History" of AFC Errors On Entergy's System Is Not Balanced.*

The Draft Audit Report notes a "long history" of AFC-related errors on Entergy's transmission system. *Id.* at 21. The Draft Audit Report has failed to consider or acknowledge the following.

First, the number of errors, compared to the number of inputs, is extraordinarily small. There are millions of AFC inputs made every month, yet Staff has identified only a very small number of errors over the entire audit period. Specifically, the Operating and Planning horizon includes, on average, approximately 151,844 variable inputs each day, or 4.5 million a month. Moreover, the model changes each week and has approximately 22,000 components. It appears that Staff believes that this dynamic and complex process can operate error-free, but we do not understand the basis for that assumption.

Second, it is not clear why Staff appears to believe that the ICT, because it is independent, would eliminate all such errors. The SPP RTO operates an AFC program and it is not clear to us whether Staff investigated whether SPP has experienced AFC errors—and, importantly, whether it even has compliance processes as robust as Entergy to detect those errors or any obligation to report them. The Draft Audit Report specifically notes that Audit Staff did not audit SPP's compliance with its ICT-related responsibilities. Without such a review, we do not understand the basis for Staff's belief that the ICT is inherently superior in this area. We also note that many RTOs have experienced periodic and continuing errors (*e.g.*, NYISO) because of the complexity of the software programs being used. The Report also fails to recognize that no other utility or RTO has a requirement to report data errors to FERC that is comparable to the requirements established in the April 2006 Order. Thus, Staff has no basis for concluding that the level of errors found in Entergy's AFC process is any more or less than those present in other complex software processes on other transmission systems.

Third, Staff also fails to recognize that the fact that Entergy detected and reported this small number of errors is a sign of a strong compliance program, not a weak one. As the

Commission found in the Policy Statement on Compliance, “[i]mplementation of an aggressive compliance program and strong direction by senior management to search out and report regulatory compliance issues may result in an increase of violations self-reported to the Commission.” *Policy Statement on Compliance*, 125 FERC ¶ 61,058 at P 20. This is particularly disappointing because Entergy has expended significant resources to upgrade, modify and improve its AFC programs and processes over the past few years. Among other things, Entergy provided Audit Staff with the report of an independent software expert that oversaw (along with the ICT) a two-year effort to (i) “recertify” the core elements of the AFC software, (ii) update and enhance the business rules, requirements documentation, and associated software testing procedures, (iii) replace the software application that caused many of the software errors, and (iv) implement additional software functionality required to comply with new requirements mandated by Order No. 890. Entergy committed approximately \$11 million to ensure that these efforts met industry standards, but these facts are not even mentioned in the Draft Report despite the information provided to Audit Staff.

e. *The Draft Audit Report’s Claim That AFC Errors Have Limited Access to Entergy’s Transmission System is Unsupported and Incorrect.*

In the Executive Summary section of the Draft Audit Report, Audit Staff states that it, “believes the AFC-related and other data errors have frustrated and hindered equal access to Entergy’s transmission system.” Report at 1. Nowhere in the Draft Audit Report, however, does Audit Staff identify any support for this assertion. Moreover, this claim is not supported by actual data regarding the level of transmission service granted through the AFC process.

Under Order Nos. 888 and 890, public utilities are not required to use complex software such as AFC models to grant or deny transmission service. Public utilities that use more simplified procedures are less prone to “errors” because their calculations do not process nearly as much data nor are they updated as quickly. Yet, because of these limitations, they can also be less accurate. By contrast, Entergy’s AFC software has *4.5 million inputs per month* and hence is designed to provide an accurate and current depiction of the transmission system—yet, of course, it is also more prone to more errors because of the sheer number of inputs and calculations in the algorithms. Audit Staff did not consider this basic difference in its criticisms of Entergy.

In fact, the data is clear that Entergy has provided an increasing amount of transmission service on its system (in total megawatt hours) since the implementation of the AFC Process, as compared to prior years. Entergy has granted, on average, over 180,000 GWh of short-term service per year from 2004 through 2010 in the AFC process, compared to less than half that per year in 2002 and 2003.³³ Customers have confirmed only about 60% of this service. The chart

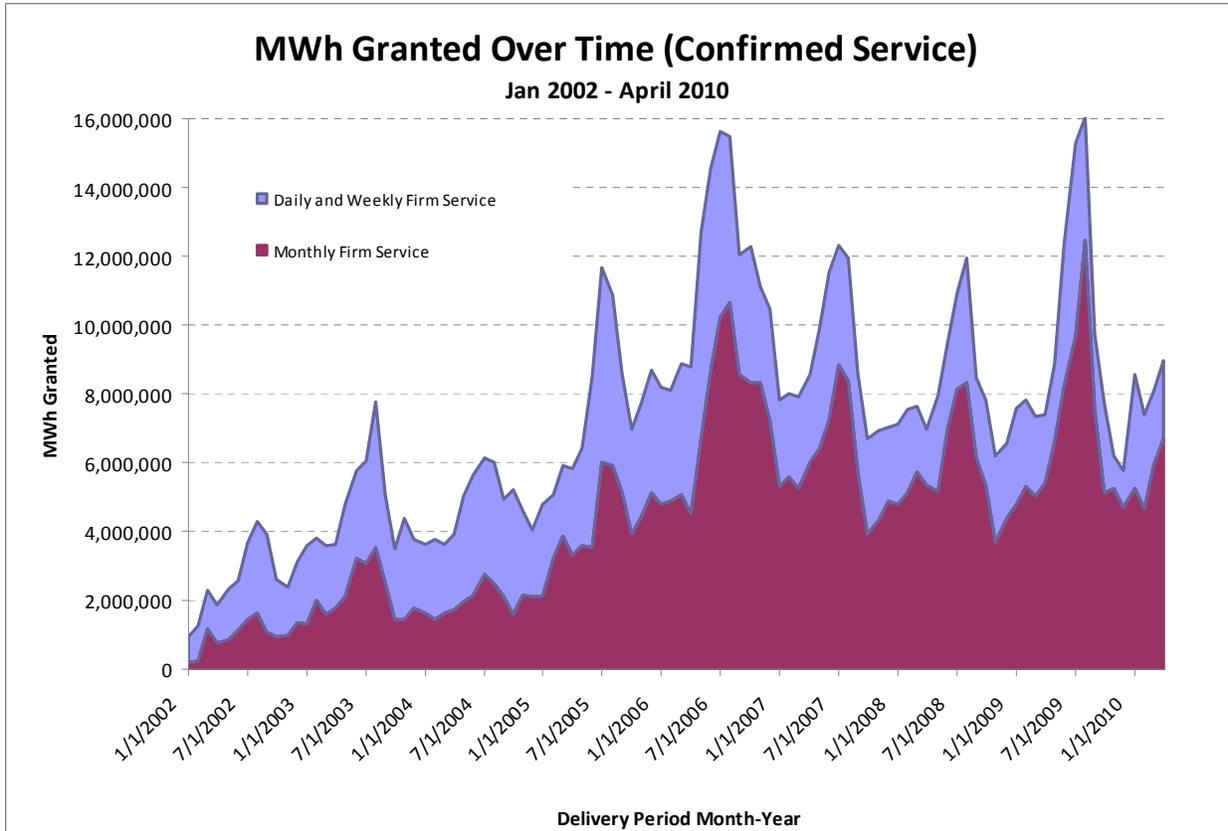
³³ The chart reflects all short-term firm TSRs posted to the Entergy OASIS over that period and that had a final status of "confirmed". Service was split into two categories - monthly service (a term of one month or more, but less than a year), and daily and weekly service (a term less than one month). Non-firm service is not included in the chart. Long-term service is granted through the System Impact Study process whereas the
(cont'd)

below reflects this increase in short-term service. In addition to the increase volume of short-term service, Entergy, on average, has granted and confirmed over 90,000 GWh per year of long-term service from April 2004 through April 2010.³⁴ Accordingly, Entergy is providing more transmission service than it ever has. Thus, to the extent that the AFC Errors may have impacted transmission service sold on the Entergy system, the errors have not reduced the total amount of transmission service that Entergy has provided its customers over the last five years. Entergy has granted on average over 180,000 GWh of short-term service per year from 2004 through 2010 in the AFC process, compared to less than half that per year in 2002 and 2003. Customers have confirmed only around 60% of this service.

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monthly and weekly service after April 2004 was granted through the AFC process, and between April 2003 and April 2004, through the GOL process. The confirmed transmission service granted over this period is represented in the chart as the MWhs of service in each month of the term of the granted service, irrespective of the date the service was studied/granted. For example, a TSR granted in June of 2005 for 100MWs of monthly service for August 2005 will be represented in the chart as $100\text{MW} \times 30.4\text{days} \times 24\text{hs} = 72,960\text{MWhs}$ in August 2005.

³⁴ A number of long-term TSRs are not included in this number. The excluded TSRs are: (1) TSRs associated with the "conversion" of pre-Order 888 service to transmission service under the OATT; and (2) TSRs for conversion of service from existing network resources used by South Mississippi Electric Power Association ("SMEPA") from "network" to point-to-point service with the creation of the separate SMEPA balancing area. These transactions were removed because they did not represent new service but rather conversion of existing service to equivalent service under the OATT.



Further, there is no indication from the data Entergy has collected that the presence of errors in the AFC models reduced the overall availability of transmission service. There are a number of reasons why the data above is consistent with these conclusions. First, in many cases, the AFC Errors were posting or archiving issues, of short duration, or only affected a few flowgates. For example, 18 AFC errors were posting or archiving errors. While certain AFC Errors were of long duration, 19 of the 39 errors that could have affected AFC values existed for one day or less. Thus, in many instances, AFC Errors had little opportunity to impact the aggregate amount of transmission service sold on the Entergy system because they did not impact Base Case modeling or processing, they lasted a short period of time, and/or they affected a limited set of flowgates or TSRs. Indeed, there is no evidence to indicate the AFC errors that did impact the granting of service reduced the overall availability of transmission capacity.

Furthermore, the data above is consistent with the fact that, even when a TSR is denied (for whatever reason), Customers frequently submit a subsequent TSR (often for the same source or sink) which is often then granted.

- f. *The Draft Audit Report's Concerns Regarding Transparency of the AFC Error Reports Are Not Compliance Issues and Fail to Take Into Account the Other Transparency Mechanisms Established in the April 2006 Order.*

In the Draft Audit Report, Audit Staff identified three issues with respect to the level of information included in AFC error reports. The Draft Audit Report states that: (1) the reports include inconsistent levels of detail; (2) the reports generally lack transparency; and (3) most reports do not indicate any quantitative indication of the impact that the errors have upon the ability to grants transmission service requests. Report at 27. Audit Staff recommends that Entergy include the following information in its AFC Reports on a going forward basis: (a) date and time the error initially occurred; (b) duration of time in which the incorrect configuration was in effect; (c) cause of the error; (d) how ATC values may have been impacted (*e.g.*, increased or decreased); and (e) all corrective actions taken to fix the error (*e.g.*, software patch, workaround, or other solution), including who performed the corrective action (*i.e.*, Entergy or a vendor), and the date the corrective action was performed. Audit Staff also recommended that AFC error reports state: (f) how TSRs have been impacted, if applicable (*e.g.*, oversold, undersold, or denied); and (g) name of any market participants known to have been affected by the error.

Entergy's understanding is that Audit Staff does not consider these findings or the failure to include this information in prior error reports to be instances of non-compliance. For example, the Draft Audit Report appears to recognize that the additional detail sought by Audit Staff regarding market impact is not required under the Commission's order approving the ICT. *See id.* at 21. Similarly, the April 2006 Order already requires the ICT to provide information regarding corrective actions in reports to stakeholders and regulators.³⁵ With respect to Staff's concern regarding inconsistent levels of detail, the short time-frame allowed for these reports often precludes Entergy from providing the detail sought by Audit Staff and accounts for why the reports would include varying levels of detail, *i.e.*, the level of complexity and scope of the issue often determine the amount of information that can be developed within a 15-day period. Thus some variation between the information in individual reports is to be expected.

The Draft Audit Report also fails to recognize that the April 2006 Order specifically established other transparency mechanisms that address Audit Staff's concerns. As mentioned above, the Commission directed the ICT to address matters related to error reports in its quarterly reports.

³⁵ *See* April 26 Order, 115 FERC ¶ 61,095 at P 110 (“The ICT must advise the Commission and Entergy’s retail regulators in its next scheduled report as to whether Entergy has remedied the problem and, if not, whether and when Entergy proposes to implement an appropriate remedy. . . . The ICT must further inform Entergy’s regulators as to whether it believes that Entergy’s proposed remedy is adequate to remedy the data error that occurred and to avert any such data errors in the future.”).

The April 2006 Order also establishes the ICT Users' Group process as a forum for transmission customers to seek additional information regarding errors.³⁶ Although Entergy is willing to agree Staff's recommendations in one form or another on a going forward basis, this willingness should not be taken as any belief that the improvements recommended by Staff reflect any failure on Entergy's part to comply with the requirements of the April 2006 Order.

Entergy agrees to include items (a) through (c) in its AFC error reports on a going-forward basis to the extent that information is available during the 15-day time period. Entergy anticipates that there may be instances where this information is not available within the 15-day time period. In those instances, rather than delaying the filing of an error report, Entergy will include the available information in the error report and then provide any remaining information to the ICT Users Group when available. With respect to (e), Entergy will also include information regarding corrective actions to the extent available, but we anticipate that such information will not always be available in the 15-day time period depending on the time required to develop and implement longer-term corrective actions.³⁷

With respect to items (d), (f) and (g), Entergy cannot agree to supply this information in the AFC error reports because such an analysis cannot be completed within the 15-day time period and, depending on the circumstances surrounding individual errors, may not be possible in any timeframe. Nevertheless, Entergy does agree that such information (to the extent the necessary analysis is feasible and practical) can be provided by Entergy pursuant to Recommendation No. 4 or the ICT pursuant to Recommendation No. 5. That information would be provided as part of the ICT Users Group process, rather than through specific error reports subject to the 15-day time frame.

With respect to Recommendation No. 5, Entergy's understanding is that this recommendation is limited to the analysis described in (d), (f) and (g). Entergy has no objection to the ICT evaluating feasibility and performing that analysis. Entergy believes that the analysis identified in (d) and (g) will be feasible in many instances, but doubts that the same will be true for (f). As we have discussed with Audit Staff, the AFC Process is based on large numbers of power flow models that incorporate thousands of data points and are resynchronized on a continuing basis. Any error may have cascading impacts on subsequent TSRs that cannot be quantified. Therefore, it is often not possible to know how TSRs are impacted by a particular error if at all.

3. *Response to Audit Staff Recommendations*

As discussed above, Entergy's response to the recommendations is as follows:

³⁶ See *id.* at PP 106-112, 304 (establishing the ICT Users Group as a forum to address errors and corrective actions).

³⁷ The Commission's order approving the ICT already requires the ICT to include such information in its quarterly reports to stakeholders and regulators and thus additional information can be provided at that time. See April 2006 Order, 115 FERC ¶ 61,095.

- Recommendation No. 1: Entergy should “[s]trengthen its procedures to report all AFC-related errors to the Commission and do so within the required timeframes.” Report at 30. *Entergy agrees to the recommendation.*
- Recommendation No. 2: Entergy should “[e]nhance existing procedures to provide the ICT with the necessary information in a timely manner to: (a) evaluate changes to AFC values before posting and (b) validate the sufficiency of corrective actions taken to fix AFC-related errors.” *Id.* *Entergy agrees to the recommendation subject to the technical limitations discussed above and with respect to Recommendation Nos. 6, 7, and 8.*
- Recommendation No. 3: Entergy should “[e]nhance existing procedures to perform, in a timely manner, additional corrective actions the ICT directs to fix and prevent AFC-related errors.” *Id.* *Entergy agrees to the recommendation.*
- Recommendation No. 4: Entergy should “[i]mprove the transparency and detail in error reports filed with the Commission. These more transparent error reports should include, at a minimum, the following information:
 - (a) Date and time the error initially occurred;
 - (b) Duration of time in which the incorrect configuration was in effect;
 - (c) Cause of the error;
 - (d) How ATC values may have been impacted (*e.g.*, increased or decreased);
 - (e) How TSRs have been impacted, if applicable (*e.g.*, oversold, undersold, or denied);
 - (f) Name of any market participants known to have been affected by the error; and
 - (g) All corrective actions taken to fix the error (*e.g.*, software patch, workaround, or other solution), including who performed the corrective action (*i.e.*, Entergy or a vendor), and the date the corrective action was performed.

Id. *Entergy agrees to provide the information listed in Recommendation No. 4 in the various time frames and fora described above (e.g., 15-day reporting, ICT Users Group and quarterly reporting).*

- Recommendation No. 5: The ICT should “[d]etermine which type of AFC-related errors justify an impact analysis, and develop metrics to either quantify specific harm or provide an appropriate qualitative indicator, if specific harm cannot be determined.” *Id.* *Entergy agrees to the recommendation subject to the discussion above.*

B. Available Flowgate Capability Quality Control

1. Summary of Audit Staff Recommendations and Findings

In the Draft Audit Report, Audit Staff recognizes that Entergy has “strengthened its quality control policies and procedures to ensure the accuracy of its data, including the data inputs for the Available Flowgate Capability” *Id.* at 31. The Draft Audit Report, however, also finds that: (i) Entergy did not implement an existing quality control procedure on 20 days;

and (ii) nine AFC-related errors could not have been detected by means of the quality control process used to evaluate data inputs to EMS-based models. *Id.* at 32.

For these reasons, the Draft Audit Report concludes that Entergy's procedures should be further enhanced. The Draft Audit Report recommended that Entergy increase the quality control of data inputs used in the Operating and Planning Horizons before transmitting that data to the ICT. Audit Staff also proposes that instances where Entergy fails to perform its established quality control procedures should be noticed on Entergy's OASIS and reported to the Commission. With respect to the ICT, the Draft Audit Report recommends that Entergy work with the ICT to: (i) assess Entergy's quality control process to determine what further testing should be performed to reduce errors in the data and software used to perform AFC Calculations; and (ii) create additional quality control procedures to be performed by the ICT to conduct necessary testing before the data is used in AFC calculations, unless reliability concerns prevent such *ex ante* review. *Id.* at 33.

2. *Response to Audit Staff Findings*

a. *The Draft Audit Report Overstates the Extent to Which Entergy's Daily Quality Control Process Was Not Implemented During the Audit Period.*

The data input quality control process referred to in the Draft Audit Report is a specific quality control process designed to minimize data errors and improve system stability for the hourly and daily AFC calculations performed using EMS-based models in the first seven days of AFC calculations. This quality control process focuses on dynamic data inputs (*i.e.*, data that update very frequently) and outputs of AFC process. It is executed on each business day by an engineer ensuring that the inputs and outputs used are accurate, and that the AFC process is provided with current data. Data checks are executed with regard to unit commitment data, load forecast data, outage data, zonal import limit data, powerflow options, response factor calculations, and reservation modeling of reservations from independent power producers and qualifying facilities. After all data checks are complete each day, an e-mail is sent to an AFC quality-control dedicated email address that identifies any error or anomaly discovered in the daily data checks. All errors or anomalies that are discovered are logged and evaluated for reportability and appropriate corrective action. In December 2009, Entergy initiated a project to fully automate the quality control process described above. The automated process will include more checks on AFC inputs and outputs than done currently. The automated process will monitor the AFC process 24 hours per day, 7 days per week.

While the Draft Audit Report (at 32) identifies 20 days where Entergy did not implement this quality control process during the period from August 22, 2008 through December 18, 2009, the Draft Audit Report fails to point out that Entergy actually provided Audit Staff with log data from this quality control process for a much broader period of time, *i.e.*, for the 959 business days during the approximate three-year period from November 1, 2006 through December 30, 2009. The sole basis for identifying the more limited period in the Draft Audit Report appears to be the fact that the first instance where the process was not implemented was on August 22, 2008 and the last was on December 18, 2009. However, Audit Staff's identification of this more limited period effectively inflates the frequency at which such instances occurred. The limited

data set should not be evaluated outside the context of the full data set provided by Entergy—to do so overstates these events.

As the Draft Audit Report recognizes, two of the twenty days where this process was not implemented occurred while Entergy’s staff was conducting restoration activities after Hurricane Gustav. The remaining 18 days represent less than 2% of the total number of days over which the quality control process was intended to be implemented. While Entergy has not retained records indicating whether the quality control process was implemented on the remaining 18 days, or if not why it was not implemented on those days, the fact that these days comprised less than 2% of the total number of days the process should have been implemented on demonstrates that such occurrences were extremely rare. Furthermore, it bears noting that such instances are not violations of the OATT. Nothing in the OATT addresses technical matters such as quality control frequency, and the Commission’s enforcement policies have previously recognized that companies are entitled to a certain level of discretion when implementing similar types of procedures.³⁸

b. *The Draft Audit Report’s Characterization of Entergy’s Quality Control Process is Inaccurate and Incomplete.*

The AFC quality control process referenced in the Draft Audit Report is only one aspect of Entergy’s overall AFC quality control processes and procedures. As noted above, the data input quality control process referred to in the Draft Audit Report applies to the EMS-based models used to calculate AFC values over the first seven days. Entergy has separate data input quality control processes for the time period extending beyond the first seven days through the full eighteen-month horizon for which AFC values are calculated. Moreover, Entergy’s AFC-related quality control efforts are not limited to data inputs but also address data retention and software testing and documentation.

Entergy has also undertaken extensive efforts to improve the AFC Process and related quality control procedures. Entergy’s efforts have included: complete replacement of one of the core AFC applications that caused a significant number of errors; a comprehensive program to recertify the AFC software under the oversight of outside software consultant; and training to limit human errors associated with the AFC Process. Entergy has described each of the initiatives below in several data responses already submitted to Audit Staff.³⁹ However, because

³⁸ *Policy Statement on Compliance*, 125 FERC ¶ 61,058 at P 9 (2008) (describing the Commission’s view that “market participants are in the best position to assess their regulatory risks and to devise the optimum mix of measures that will provide the best conditions for ongoing compliance”). In this case, Entergy implemented a quality control process designed to generally run every business day. The fact that on 20 days (out of 959 total business days) Entergy personnel may not have implemented this process for various reasons (such as hurricane restoration activities for example) does not reflect a failure to exercise that discretion reasonably.

³⁹ See RFI 20 (Bates No. ESI-030274, and supporting attachments); RFI 248 (Bates No. ESI-062188, with supporting attachments); RFI 249 (Bates No. ESI-062192); and RFI 250 (Bates No. ESI0062193, with supporting attachments).

the Draft Audit Report does not address these efforts in any detail, Entergy provides the following information.

In August 2007 Entergy's senior management directed that the AFC software applications should be comprehensively reviewed by a single task force to update and improve the AFC software and related testing and quality control procedures. The task force was responsible for updating system requirements, business rules and software testing procedures, as well as conducting "end-to-end" and "regression" testing for the different AFC software applications and related support processes. The task force was also assigned responsibility for implementing the additional requirements related to AFC calculations and OASIS operations mandated by Order No. 890.

This task force became known as the AFC Systems Capability Team ("AFC Capability Team"). TBU's senior management directed the AFC Capability Team to retain the services of two outside, independent experts to assist with the project. Accordingly, Entergy retained Structure Group Consulting, LLC ("Structure Group") to serve as the outside consultant for software documentation and "end-to-end" testing, and a contractor from PMO Link ("PMO") to serve as the overall program manager to oversee the various project sub-teams. Together, Entergy, Structure, PMO and the ICT would work together to design and implement the testing and verification procedures for the various AFC software applications.

The AFC Capability Project commenced in August 2007 and ran through 2009. With the assistance of the Structure Group and PMO Link, the AFC Capability Team made significant improvements to the AFC Process, including developing and/or implementing:

- an updated software testing process;
- personnel training on software testing policies and procedures;
- improved processes to identify current AFC-related regulatory rules and requirements;
- improved documentation for AFC systems and related processes;
- a new user's guide(s) for AFC Systems;
- a new testing environment, including the dedicated server called "Test Director," for AFC Systems that can be reused for other applications and similar projects to create additional value;
- controls for monitoring the performance of AFC Systems and related processes; and
- enhanced configuration management programs to ensure proper documentation and testing of future changes to AFC Systems and related processes.

After deciding that it was more efficient to replace one of the AFC software applications (OASIS Automation), Entergy successfully implemented a replacement OASIS system (OATI's

WebTrans and WebOASIS applications) representing a significant upgrade to Entergy's previous system. The transition to OATi software was implemented on September 29, 2009.

In addition to the above, the Structure Group independently reviewed Entergy's testing and documentation procedures during the AFC Capability Project and provided test certification across major functional areas representing the core AFC related applications. The Structure Group "certified" RFCalc and PowerGem in November 2008. The Structure Group certified webTrans and webOASIS in September 2009. Entergy ultimately committed \$11 Million to implement these improvements and ensure that they met industry standards. In addition to the AFC Capability Project, in February 2009, two groups within the TBU (Transmission Regulatory Compliance and IT) separately reviewed the AFC errors that had been reported to FERC over the period from February 2007 through March 2009, to identify the common causes of errors and develop a mitigation plan in order to reduce AFC related errors associated with non-core AFC software applications and human errors. The first effort in this regard is the "MSS-EMS Application Compliance" project. While the AFC Capability Project focused on the "core" AFC applications, the MSS-EMS project is focusing on the AFC Process's non-core (or "support") applications and will apply the same methodology used by the AFC Capability Project, as revised to reflect the lessons learned. The second program specifically targeted the reduction of human errors in Entergy transmission processes, including AFC Process errors. The training program is provided to a significant number of Entergy personnel, including all transmission operations personnel. Similarly, when Entergy hires new transmission personnel, human performance training is provided. Entergy's human performance training focuses on the most common ways in which human error occurs, and provides tools that personnel can employ to minimize the possibility of human error. All individuals in the Transmission Business Unit who were identified for training completed the training in 2009.

Although Entergy described these initiatives and others in several data responses to Audit Staff, the Draft Audit Report does not address these efforts in any detail and thus provides an incomplete picture of Entergy AFC quality control efforts.

c. *The Draft Audit Report's Characterization of the AFC Data Input Process and the ICT's Authority are Incorrect.*

The Draft Report states that, "while the ICT has the authority to ensure data accuracy there is currently no practical way in which the ICT can exercise this authority." Report at 32. This conclusion appears to be based on the notion that, because the AFC data inputs are updated as frequently as twice per day, the ICT has no opportunity to review AFC data inputs before the fact. *See Id.* ("Currently, the ICT does seek to implement a quality control process but it can only do so after the fact."). The Draft Audit Report also claims that, "ICT staff said Entergy develops data inputs without ICT oversight or participation by ICT staff." *See id.*

While Entergy agrees that the update frequency does present challenges to quality control efforts as discussed below, Entergy does not agree that the ICT lacks the authority to perform a before the fact, *ex ante* review. Such a finding is inconsistent with the authority provided to the ICT under the current OATT provisions. For example, Section 3.1, 3.3.3, 4.1, 4.3.2 and other sections of Attachment C to the Entergy OATT each describe the authority of the ICT to review

data inputs and evaluate the reasonableness of AFC values created by those data inputs. Section 3.1 of Attachment C is typical and states:

“Under Sections 6 and 8 of the Transmission Service Protocol, the Transmission Provider is responsible for supplying data inputs and information necessary for creating hourly, daily and monthly base case models. *The ICT will be responsible for reviewing and validating the data inputs, information and base case models.* For purposes of this Section 3, the responsibility of the ICT to "review and validate" shall mean that *the ICT will take reasonable steps to ensure that the data inputs are properly loaded and reflected in either RFCalc or the Transmission Provider's modeling processes and that the resultant AFC values (i) reasonably reflect the application and product of RFCalc or the Transmission Provider's modeling processes and (ii) are reasonably consistent with the current topology of the Transmission System.*”

(Emphasis added). This language was developed by the ICT itself. *See, e.g., SPP Answer at 4, Entergy Servs., Inc., Docket No. ER05-1065 (June 25, 2007).*

In short, there is nothing in the scope of the ICT’s authority that prevents the ICT from performing whatever quality control procedures (*ex ante* or otherwise) it deems appropriate. To date, the ICT has chosen not to implement *ex ante* procedures, but Entergy has no objection if the ICT wants to modify its approach going forward.

The problem is *not* that the ICT lacks sufficient authority or that Entergy develops data inputs without ICT oversight or review. The problem is that in certain horizons data inputs are updated so frequently that before-the-fact reviews are not possible for all data inputs and calculations, without requiring significant changes to the updating process and frequency. The Draft Audit Report fails to recognize the significance of this point and does not give due weight to the importance of the updating frequency of AFC values and certain data inputs. Although Audit Staff appears to believe that data inputs are only updated twice per day, this assumption is incorrect for a number of data inputs.

As noted above, in the Operating Horizon, which includes all hours of the current day and (after noon on the current day) all hours for the next day, AFC values are recalculated and posted on an *hourly* basis. As part of that resynchronization process, certain data inputs are updated on an *hourly* basis (*e.g.*, transmission reservations, schedules, transmission outages, etc.), while other data inputs are incorporated into each hourly resynchronization but are only updated once or twice per day (*e.g.*, customer dispatch, load forecast, base model, etc.). In the Planning Horizon, which picks up at the end of the Operating Horizon and runs through day 31, AFC values are recalculated and posted four times per day. Data inputs that are updated during each hourly resynchronization in Operating Horizon are updated four times per day in the Planning Horizon, while the other data inputs are updated once or twice per day (*e.g.*, customer dispatch, load forecast, base model, etc.).

As this discussion demonstrates, the challenge is that the frequency of resynchronizations of AFC values in the Operating and Planning Horizons and certain data input updates in those horizons occurs too frequently for the *ex ante* review that Staff now proposes. Entergy does

agree that the data inputs that are updated once or twice per day possibly could be reviewed by the ICT prior to incorporation into some (but not all) resynchronizations and has no objection to the ICT doing so. These technical limitations must be taken into account when developing revised procedures related to Recommendation Nos. 6, 7, and 8.

While strongly disputing the Draft Audit Report's AFC findings, Entergy agrees to Recommendations Nos. 7 and 8 subject to any technical limitations presented by data inputs that are incorporated directly into AFC models from field data (such as outages) and other sources.⁴⁰ Audit Staff must recognize that with the limitations provided by an hourly update in the Operating Horizon, and with the update taking approximately 30-35 minutes of each hour, a viable consideration for achieving these recommendations is to reduce the number of updates conducted in the Operating Horizon. For all practical purposes, it may not be possible for the ICT to create additional quality control procedures for certain data inputs and maintain the current update frequency that currently exists in the Operating Horizon. With respect to Recommendation No. 6, Entergy agrees to continue to work with the ICT in order to improve its AFC-related Quality Control procedures that would apply prior to transmitting data to the ICT subject to these technical limitations. Entergy does not agree, however, that the Commission's April 2006 Order requires it to report instances where it does not perform quality control procedures. Nevertheless, Entergy has no objection to notifying the ICT of such instances and the ICT can decide whether to include in its Quarterly Reports or discuss during the ICT Users Group meetings.

3. *Response to Audit Staff Recommendations*

- Recommendation No. 6: Entergy should “[i]ncrease the quality control of its data before transmitting it to the ICT. Instances when Entergy fails to perform its established quality control procedures should be noticed on Entergy’s OASIS and reported to the Commission as a procedural error.” Report at 33. *Entergy agrees to notify the ICT of any such events.*
- Recommendation No. 7: Entergy should work with the ICT to “[a]ssess Entergy’s quality control process to determine what further testing should be performed to reduce errors in the data and software used to perform AFC calculations.” *Id.* *Entergy agrees to this recommendation subject to the technical limitations described above.*
- Recommendation No. 8: Entergy should work with the ICT to “create additional quality control procedures to be performed by the ICT to conduct necessary testing before the

⁴⁰ Under Section 3.6 of Attachment C and as the result of Entergy’s past commitments to Stakeholders, Entergy continually updates (*i.e.*, resynchronizes) the power flow models used in the AFC Process. The power flow models in the Operating Horizon and Planning Horizon are resynchronized hourly and daily, respectively. The power flow models used in the Study Horizon are resynchronized not less than twice per month. Entergy believes that the frequency of the resynchronizations in the Operating, Planning and Study Horizon exceed what is required under the applicable FERC regulations and NERC reliability standards.

data is used in AFC calculations, unless reliability concerns prevent such *ex ante* review and validation.” *Id.* *Entergy agrees to this recommendation subject to the technical limitations described above.*

IV. WPP

A. Developing the Weekly Procurement Process

1. Summary of Audit Staff Recommendations and Findings

The Report outlines findings related to the WPP’s development with regard to the following issues: timeline for implementing the WPP, cost of WPP development, contract work, payroll and employee benefit expense, and construction overheads. In the section describing the timeline for implementation, the Report describes Entergy’s efforts in securing a vendor for the project, the development of the necessary software, software testing, and communications and filings with the Commission. More specifically, the Report describes a process where the Commission either approved those filings or provided specific directives for Entergy and the ICT with regard to implementing the WPP. The Report does not make any specific findings or recommendations with regard to the implementation timeline. Report at 37-43.

However, with regard to the cost of WPP development, the Report expresses concern that “some costs were improperly capitalized to the WPP project. . . .” *Id.* at 40. Specifically, the Report maintains that certain legal and SPP costs directly associated with the WPP development should not have been capitalized in Account 107, but rather charged to Account 928. *Id.* at 40. Additionally, the Report maintains that Entergy should not have accrued AFUDC on these capitalized costs. The Report also calls into question the amount of payroll expense charged to the WPP and whether employees appropriately charged their time to the WPP project. Lastly, the Report questions whether construction overheads have “a definite relationship” to the WPP. *Id.* at 43.

Ultimately, the Report recommends that Entergy (1) conduct an independent review of the costs charged to the WPP for the legal work, services provided by SPP, payroll and employee benefit expenses, and construction overheads to ensure those costs were accounted for properly; (2) provide audit staff within 30 days of the Final Audit Report an engagement letter specifying the scope of the independent review; (3) file the results of the independent review with the Commission within 90 days from the date of the Final Audit Report; (4) record and file with supporting documentation, all correcting entries made as a result of the independent review; and (5) adjust formula rate billings, as appropriate, and file a refund analysis with the Commission. *Id.* at 44.

2. Response to Audit Staff Findings

As a preliminary, but important matter, and as we previously have explained on several occasions to Audit Staff, all costs related to the WPP were recently put into rates via Entergy’s annual rate update submission on May 28, 2010 in Docket No. ER10-1367. Pursuant to the annual update procedures outlined in Schedule 7 and Attachment H to the Operating Companies’ OATT, Entergy’s OATT customers have an opportunity to seek discovery on the annual update. We are currently in the process of responding to that discovery. Once the discovery period

closes, customers have the option to review issues with Entergy in an effort to resolve any open issues; if that is not addressed to the customer's satisfaction, they have the option to file a Complaint with the Commission. For these reasons, Entergy does not believe WPP project costs are properly within the scope of the audit.

The Report also notes that the initial budget for the WPP project was \$8.2 million. *Id.* at 40. As Entergy described during the site visit and in the presentation material (at 13; Bates No. ESI-063073), this initial estimate was a preliminary internal estimate and did not have the benefit of any detailed planning or solicitation of bids from vendors. This estimate also did not include AFUDC, capital suspense, or other overheads.

a. *Contract Work*

The Report maintains that charges by outside legal counsel and SPP contract charges should not have been booked to Account 107 and capitalized. According to the Report, these charges should have been booked to Account 928, Regulatory Commission Expenses. *Id.* at 41. However, Entergy appropriately capitalized these costs in Account 107, per the guidance in Electric Plant Instructions No. 3A.(1), *Contract work*, as they were directly related to the on-going design, development, and implementation of the WPP and the WPP software.

i *Legal costs*

Audit Staff maintains that “all legal costs incurred relating to the preparation of tariff filings before the Commission for the implementation of the WPP should have been expensed as incurred rather than capitalized to the WPP project.” *Id.* at 41. Audit Staff also maintains that “such legal expenses are related to formal cases before the Commission and are properly includable in Account 928.” *Id.* Audit Staff notes, however, that Entergy has explained that the legal costs at issue were not solely related to the preparation of tariff filings and that “[b]ased on additional information provided by Entergy, audit staff recommends Entergy conduct an independent review of the legal costs capitalized as part of the WPP project and determine whether such costs were properly capitalized as part of the WPP project.” *Id.*

Audit Staff appears to have a misapprehension about the type of work conducted by legal counsel on this project, and views that work in an unduly narrow manner. During the audit period, outside legal counsel did prepare amendments to the OATT and filings for those amendments. However, that was a relatively small part of the work done by outside counsel. Instead, for the most part the fees paid to outside counsel were for services to ensure that the then on-going design, development, and implementation of the WPP, including the WPP software, complied with the relevant provisions of the OATT, the Commission's orders addressing the WPP, and the Commission's more general policies. As Entergy has explained, and as Audit Staff appears to recognize, the WPP and its software are very complex, and a number of issues arose during the development of the software. Numerous decisions—too many to count—were required as the software was being developed and tested, and the WPP otherwise implemented. During that process, Entergy was diligent to ensure that the software and processes it and the ICT were developing were consistent with the OATT and the Commission's requirements. Entergy consulted with outside counsel regularly to ensure that those requirements were being satisfied. In short, outside counsel was integral to the development stage of the WPP software

based on counsel's expertise in the interpretation of the OATT, FERC orders regarding the WPP, and general FERC policy, as well as determining the configuration requirements of the software necessary to implement such FERC directives and demonstrate that Entergy was in fact coordinating transmission independently. The costs paid to outside legal counsel were appropriately capitalized as components of construction costs for the WPP software.

To provide just one example, as we have explained, given the continued difficulties with the WPP testing, during the third quarter of 2008 Entergy, the ICT, and Ventyx conducted extensive reviews of (a) the software model used for the WPP and (b) the structure of the WPP detailed in Attachment V. Ultimately, the ICT concluded that in light of the complexity of the WPP structure, the way that complexity was contributing to the model problems, and other implementation challenges, two changes needed to be made to the WPP structure: (1) limiting supplier offers in the WPP to on-peak periods, and (2) eliminating WPP PTP transmission service. Entergy initially was reluctant to adopt those changes, but ultimately agreed with the ICT's conclusions. Outside counsel was integral in helping to identify and address possible changes to the structure of the WPP, based on Entergy's own review of the WPP and the ICT's review. Outside counsel also was integral in analyzing the specific recommendations made by the ICT. As with the initial design of the WPP, Entergy sought to ensure that any proposed changes to the structure of the WPP would meet Commission standards.

As noted, during the audit period outside counsel did prepare OATT amendments related to the WPP, and filings for those amendments. However, even that work often cannot be divorced from the conceptual design and implementation of the WPP and the WPP software. Instead, the OATT amendments and filings typically were an integral part of developing the WPP and software. For example, on January 31, 2008 Entergy filed amendments to (among other things) add soft constraints to Attachment V of the OATT. In its filing, Entergy explained that the continued testing of the WPP showed that, as with similar models, circumstances arose where the WPP model could not reach a solution that observed all constraints included in the model. By adding soft constraints, the WPP model would be able to exceed an operating limit rather than dispatching generation resources at costs above a certain set point. Transmittal Letter, Entergy Servs., Inc., Docket No. ER08-513-000 at 4 (Jan. 31, 2008). Entergy also explained that the soft constraints being added to the WPP are similar in concept and implementation to the Violation Relaxation Limits ("VRLs") used by SPP RTO in its EIS Market. *Id.* at 5-7. An essential part of developing the soft constraints used in the WPP was outside counsel's review of the provisions of SPP RTO's OATT that apply VRLs, SPP RTO's filings of those provisions, protests to those filings, and the Commission's orders addressing the VRLs. Outside counsel also was integral to addressing how the VRL concepts would be applied in the WPP. Part of the development of soft constraints included a review by Entergy personnel and consultants of the changes that would be made to Entergy's OATT to implement soft constraints, as the exact processes and approach, and the required changes to the WPP software, could not be understood fully without also understanding how the OATT specifically would be changed. Similarly, the changes to the ICT structure discussed above could not be fully considered or implemented without the ability of Entergy personnel and consultants to review the specific changes to the OATT. Given that the changes first were recommended by the ICT, it also was essential to provide the amended OATT provisions to the ICT before filing, to ensure that the parties agreed on the manner the changes to the WPP structure were being implemented.

Entergy booked \$1.09 million for services charged by SPP to Account 107 for “(1) developing control procedures for ICT functions related to the WPP and (2) the development and filing of tariffs with the Commission.” Report at 41. The Report identifies these two types of contract costs and maintains they should not have been capitalized. *Id.* However, this position fails to acknowledge that the ICT had ultimate authority for allowing the WPP to be put into service, and therefore, was intimately involved in the development of the software, including design, scope, and configuration and testing of such software. Notably, the ICT did not develop or file tariffs with the Commission regarding WPP; that responsibility lies solely with the Transmission Provider, Entergy.

b. *Payroll and Employee Benefits Expense*

Entergy disagrees with the Report findings that certain employees’ payroll and benefits should not have been capitalized as part of the WPP project. The Report’s finding—that “audit staff could not determine whether it was appropriate for 88 Entergy employees to directly charge to the WPP”—is not supported by facts provided to Audit Staff, or knowledge of the level of effort required to implement a project with the scope and scale of the WPP. *Id.* at 42. As discussed at length during the New Orleans site visit, the WPP software required inputs from several existing software systems within the Company, which involved several business units. The Project Organization slide, included in the presentation given during the site visit illustrates the various business units involved in the WPP development and implementation. *See* Bates No. ESI-063067. Notably, the number of individuals who charged time to the project does not account for attrition of those employees who may have changed roles during the course of the project or who may have separated from the company. For Audit Staff to question the “appropriateness” of the number of employees engaged to get this effort on-line and the specific time charged to the project demonstrates Audit Staff’s lack of familiarity with the scope and complex nature of this project. Report at 42.

In fact, the Report does not recognize that approximately 98% of the payroll and employee benefits costs capitalized in the WPP project relate to costs incurred by Entergy Weekly Operations or Transmission employees—all of which were undisputedly directly related in the implementation of the WPP project. The Report attempts to exaggerate the alleged findings by quantifying the impact in number of employees rather than dollars. In fact, the amount charged to the WPP project of the four employees which are highlighted in the Report findings—less than \$18,000—is less than *one-third of one percent* of the overall payroll and employee benefits costs capitalized in the entire project.

Furthermore, the allegation that the time of four specific employees was inappropriately capitalized to the WPP project is mistaken. The internal audit department time was directly related to testing the WPP system for proper controls as part of the system implementation. Testing a system for proper controls is a normal part of a system implementation and is an appropriate capitalized project cost. The corporate finance division time was also directly related to the project as part of Entergy’s normal process to assess risks on major projects and attempt to identify any potential issues which should be included in the project scope. Finally, the time of a secretary in the corporate quality control department was directly related to the WPP project

because her work supported the activities of transmission employees working on the WPP project. There is no basis for the Report's allegation that "the employee had a difficult time associating responsibilities to the construction of the WPP as the majority of her work was not project-specific." *Id.* This employee specifically stated she supported the development of the project in an administrative capacity, *i.e.*, scheduling meetings for project management, etc., although she could not with specificity state which meetings because the electronic calendar information is automatically deleted pursuant to the Corporate IT policy. We also note that Audit Staff indicated that it would provide written interrogatories to allow these employees to review their records and thereafter respond in writing, but Audit Staff declined to do so. Entergy personnel properly described their involvement in the project

Again, Entergy appropriately capitalized these costs in Account 107 per the guidance in Electric Plant Instructions No. 3A. (2) *Labor* as these employees were directly engaged in the development and implementation of the WPP. The Report has no factual basis for the finding that Entergy did not employ strong enough verification procedures to determine whether the charges by the 88 employees should have been charged to the WPP project. Project codes are used by Entergy employees to charge time spent on various projects and activities. An employee is required on a bi-weekly basis to assign his/her hours worked to the appropriate project code through the time entry system. These project codes are used to track costs incurred on specific projects. Project-based time reporting is commonly used by companies to manage employee labor and project costs.

While a specific description of activities performed during the hours assigned to a project is not required in the time entry system; employees charge only the time spent on a particular project to that project code. In fact, Entergy's Code of Entegrity (Entergy's guidelines for business ethics and compliance) requires employees to maintain accurate records, and specifically identifies timesheets as one of those records, to fairly reflect Entergy's transactions. Employees are made aware of this obligation through formal training and acknowledgment of the Code of Entegrity, which is required as a condition of continued employment. Further, the employee's immediate supervisor must review the employee's timesheet and formally sign-off acknowledging their review of the time charged by the employee. This review is documented in the time entry system. Accordingly, Audit Staff's statement that "verifications were not formally documented" is wrong. *Id.* at 42.

c. *Construction Overheads*

Audit Staff makes no specific findings about Entergy's treatment of Construction Overheads, but states that "[g]iven audit staff's concerns with the capitalization of other costs in the WPP, audit staff believes that the overhead costs warrant additional study." *Id.* at 43. This is insufficient grounds to require additional study, as Audit Staff has not reasonably articulated any concern with regard to the treatment of construction overheads, despite the fact that during the New Orleans site visit, Entergy provided a full presentation with examples on this subject.

3. *Response to Audit Staff Recommendations*

Although we do not believe that any issues exist with the accounting for the costs charged to the WPP project, we agree to conduct an independent review, which we believe will

ultimately validate that these components of construction cost were accurately recorded to Account 107.

- Recommendation No. 9: Entergy should “[c]onduct an independent review of the following costs charged to the WPP project to ensure that the costs are properly chargeable as a component of construction cost in accordance with Electric Plant Instructions contained in the Uniform System of Accounts. The review should include:
 - Legal work;
 - Payroll and employee benefits and expenses;
 - Services provided by SPP; and
 - Construction overheads”

Report at 44. *Entergy agrees to this recommendation*

- Recommendation No. 10: Entergy should “[p]rovide audit staff, within 30 days of the issuance of the Final Audit Report, an engagement letter specifying the scope of the independent review.” *Id. Entergy agrees to this recommendation.*
- Recommendation No. 11: Entergy should “[f]ile the results of the independent review with the Commission no later than 90 days from the date of the Final Audit Report.” *Id. Entergy agrees to this recommendation.*
- Recommendation No. 12: Entergy should “[r]ecord and file, with supporting documentations, all correcting entries made as a result of the independent review.” *Id. Entergy agrees to this recommendation.*
- Recommendation No. 13: Entergy should “[a]djust formula rate billings, as appropriate, and file a refund analysis with the Commission within 30 days.” *Id. Entergy agrees to this recommendation.*

B. Accuracy of Flexibility in the Weekly Procurement Process Model

1. Summary of Audit Staff Recommendations and Findings

As a prefatory matter, Audit Staff claims that “[c]onfusion regarding the actual operational readiness of the WPP software began to appear in the periodic status reports filed by Entergy.” Report at 37. Audit Staff states that it understood Entergy’s June 8, 2007 status report in Docket No. ER05-1065-000, “to mean that full functionality had been developed (*i.e.*, all software modules were developed) and that the testing of operation of the software was under way.” *Id.* at 38. Audit Staff then notes that “[o]n September 17, 2007, Entergy filed another status report suggesting it could not meet the September 24 deadline that it specified in the prior status report[.]” *Id.* Audit Staff complains that it found the terminology in these reports to be “difficult to understand.” *Id.* at 38-39.

Beyond these criticisms, Audit Staff claims in the Report that Entergy’s Energy Management Organization (“EMO”) has overstated the level of flexibility included in the WPP. *Id.* at 45. In an attempt to support that claim, Audit Staff makes two separate assertions. First, Audit Staff states that it “became aware” that there was an error in new software used by EMO to

calculate flexibility. That software error resulted in an unintended 600 MW increase in flexibility during the period of June 20, 2009 to October 10, 2009. *Id.* at 45, 50. Audit Staff notes Entergy's explanation that before EMO initiated its use of the new software, EMO analyzed the flexibility values produced by the software and "determined that the flexibility requirements appeared consistent with the ranges of hourly flexibility requirements for previous WPP Operating Weeks." *Id.* at 50. However, Audit Staff then states that it conducted its own analysis "and determined the flexibility values being produced were not consistent with recent operating history." *Id.* Audit Staff also notes in this regard that during the audit it asked Entergy to correct the prior, incorrect flexibility requirements and re-run the WPP model with the corrected values. *Id.* at 51. Audit Staff asserts that the results of those model re-runs show, among other things, that (a) EMO did not sufficiently review and test the new software before that software was implemented and (b) "[t]his raises serious concerns about EMO's ability to perform quality control over the software developed for the WPP." *Id.* at 52.

Second, Audit Staff claims that "there are indications that the manner in which flexibility is modeled has errors beyond" the 600 MW error. *Id.* at 45. Audit Staff does not identify any additional alleged errors, but instead points to "sanity checks" performed by the ICT. *Id.* at 52. Audit Staff states that the ICT's checks are used by the ICT to determine whether Entergy's own generation resources can provide the level of flexibility specified by EMO for a WPP Operating Week. *Id.* According to Audit Staff, the ICT determined that the ICT's test was failed on "several occasions" and "[t]he fact that the data fails such a simple, base-level test indicates that either (1) the required flexibility has been inflated or (2) that the data being used in the determination of the flexibility variable is inconsistent with the data that is being used in the WPP." *Id.* Audit Staff also claims that "EMO's inability to satisfy the flexibility requirements with its own resources is a recurrent problem in the WPP modeling" and that this inability led to the adoption of procedures whereby flexibility requirements may be adjusted from Run 0 of the SCUC model to Run 1. *Id.* According to Audit Staff, the adjustment of flexibility requirements from Run 0 to Run 1 "does provide a degree of mitigation," but "it should not be used as a justification for not resolving the underlying problem of accurately modeling flexibility." *Id.*

Audit Staff asserts that "it is clear that violations of the flexibility constraint are the most frequent reasons for not accepting economic bids." *Id.* at 48. Audit Staff also states that it "is concerned that the EMO's discretion to introduce flexibility for purposes other than reliability concerns (*e.g.*, to allow economy energy purchases, or perhaps to favor its own legacy units purported ability to provide flexibility) presents conflict of interest concerns." *Id.* at 49 (footnote omitted). Finally, Audit Staff claims that EMO's ability to set the flexibility requirement used in the WPP "may create a bias favoring economy energy over the WPP bids. Such an approach appears to violate the principle of creating effective competition between the alternative power suppliers and Entergy's own legacy units." *Id.*

Finally, Audit Staff recommends, in Recommendation No. 14, that Entergy strengthen its controls over the data the EMO uses in the WPP model.

2. *Response to Audit Staff Findings*

At the outset, Entergy does not understand Audit Staff's criticism that there was "confusion" in Entergy's status reports and that certain terminology was "difficult to

understand.” In its status reports, Entergy described the specific testing that was being used, provided the status of the various testing that had occurred, and described the testing that was yet to be performed. Entergy also identified the issues that were arising and in some cases provided its best estimates for when it and the ICT believed that those issues would be resolved. Contrary to Audit Staff’s assertion, at no point was there any “confusion regarding the actual operational readiness of the WPP.” Instead, it should be axiomatic that the entire purpose of testing the WPP software and processes was to determine whether the software and processes are ready for implementation, or whether additional issues need to be addressed.

Entergy and, notably, the ICT did believe at various times that the WPP package was close to completion. However, issues often were more complex than anticipated, and it was not unusual for resolution of one problem with the software to lead to additional, unexpected issues. Further, during testing many issues would appear only under very specific scenarios, *e.g.*, when certain combinations of units were available or load was unusually low or high, and thus often problems with the model were not immediately evident. Typically, when new issues arose new versions of the software were required. Those new versions were then tested again to determine whether the current problems were resolved and whether new issues arose. Thus, for example, approximately 4000 test runs for the SCUC software alone were performed prior to WPP implementation.

It is important to note in this regard that Entergy provided its status reports to the ICT before filing those reports with the Commission. As Entergy explained, the ICT concurred with those reports, including the descriptions of the testing that had occurred, the issues that had arisen, the testing still to be performed, and estimated implementation dates. Status Report Regarding Implementation of the Weekly Procurement Process, Docket No. ER05-1065-000 at 1 (Sept. 17, 2007) (“Entergy is authorized to state that the [ICT] supports and concurs with this status report.”); Status Report Regarding Implementation of the Weekly Procurement Process, *Entergy Servs., Inc.*, Docket No. ER05-1065-000 at 1 (June 8, 2007) (same).

a. *Flexibility Calculation - 600 Megawatt Error*

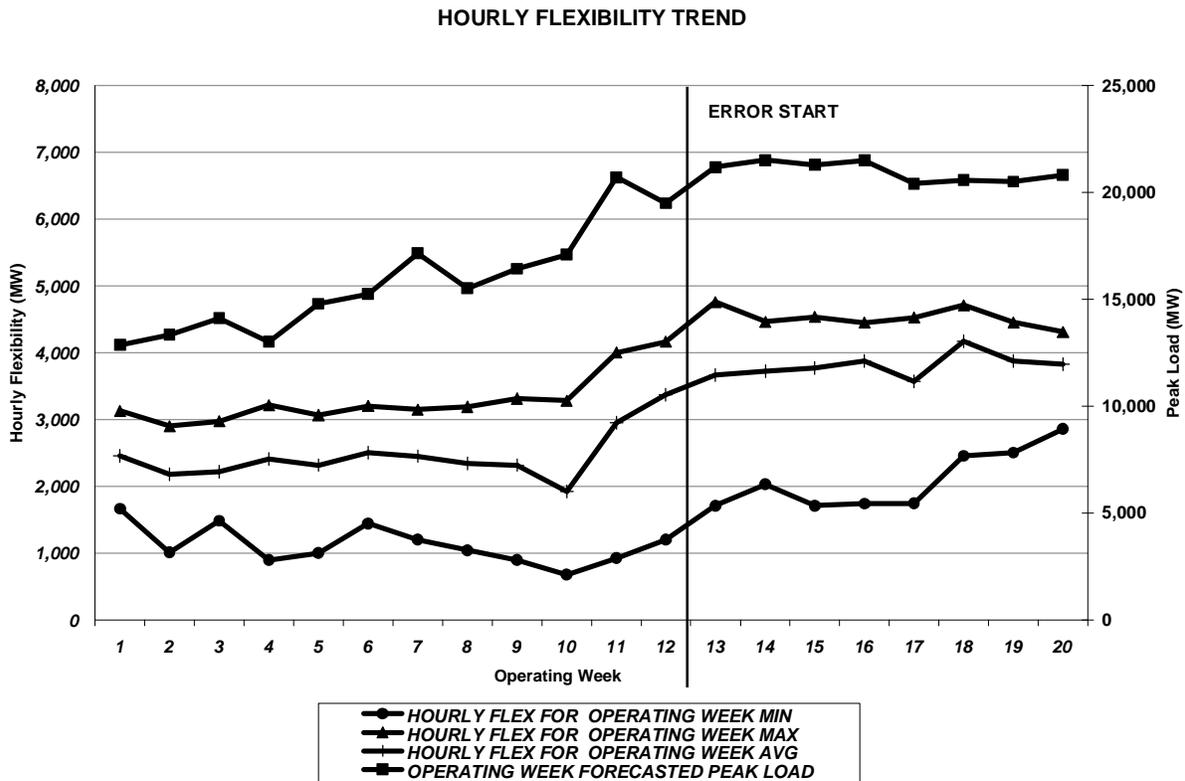
Entergy disagrees with Audit Staff’s assertion that EMO did not sufficiently review the new software before implementing it. As an initial matter, Audit Staff’s conclusion that the alleged lost savings identified in the Report somehow show that the new software used by EMO was insufficiently reviewed is a *non sequiter*. The level of lost savings that may or may not have resulted from the error has nothing to do with whether or not the new software was adequately reviewed. What is relevant is the fact that, as discussed below, Entergy reasonably determined that the new software was providing results that were consistent with historical trends. Further, even if the level of any lost savings was relevant to determine whether or not the software was tested adequately, the WPP models cannot simply be re-run and lost savings identified. The figures included in the Report themselves therefore cannot be supported. For these reasons, the claimed lost savings included in the Report should be deleted.

As to Audit Staff’s conclusion that the flexibility values produced by the new software were not consistent with then-recent operating history, that conclusion is based on an overly simplistic calculation and is not correct. The following table shows information related to hourly flexibility requirements and forecasted load prior to and after the time the error was introduced.

WEEK NUMBER	OPERATING WEEK	HOURLY FLEX FOR OPERATING WEEK MIN (MW)	HOURLY FLEX FOR OPERATING WEEK MAX (MW)	HOURLY FLEX FOR OPERATING WEEK AVG (MW)	OPERATING WEEK FORECASTED PEAK LOAD (MW)
1	3/28/2009	1,667	3,133	2,457	12,859
2	4/4/2009	1,013	2,904	2,184	13,334
3	4/11/2009	1,483	2,976	2,219	14,109
4	4/18/2009	899	3,216	2,411	13,024
5	4/25/2009	1,001	3,068	2,319	14,797
6	5/2/2009	1,446	3,206	2,505	15,247
7	5/9/2009	1,204	3,153	2,452	17,162
8	5/16/2009	1,044	3,192	2,342	15,522
9	5/23/2009	898	3,316	2,321	16,433
10	5/30/2009	678	3,284	1,922	17,090
11	6/6/2009	927	4,006	2,950	20,707
12	6/13/2009	1,201	4,164	3,373	19,504
13	6/20/2009	1,710	4,761	3,671	21,183
14	6/27/2009	2,032	4,467	3,726	21,511
15	7/4/2009	1,712	4,538	3,771	21,300
16	7/11/2009	1,742	4,451	3,878	21,502
17	7/18/2009	1,746	4,529	3,569	20,415
18	7/25/2009	2,457	4,715	4,173	20,585
19	8/1/2009	2,506	4,456	3,879	20,503
20	8/8/2009	2,861	4,315	3,831	20,813

 600 MW Error

Graphically, these results are seen as follows:



As this information shows, hourly flexibility requirements and load were trending upward before the error in hourly flexibility calculations was introduced. (The error did not affect daily flexibility calculations, and EMO does not specify an intra-hourly flexibility requirement.) From week 10 to week 11, for example, the daily average for hourly flexibility increased by 1,028 MW, while from week 11 to week 12 the amount of the increase was 423 MW. The levels of the increases between those weeks, each of which preceded introduction of the error, were greater than the 298 MW increase from week 12, without the error, to week 13, with the error. Thus, the differences in the weeks prior to the error and the week after the error did not appear to be inconsistent. Indeed, EMO’s conclusion was particularly reasonable given the increases in load that began the same week the error was first introduced into the flexibility calculation.

Audit Staff states that it sampled data for the WPP Operating Weeks beginning June 6, 2009 (two weeks before the implementation of the new software and the introduction of the error), as well as two weeks between the period of June 20, 2009, and October 10, 2009 (both after the calculation error was introduced). Report at 50. According to Audit Staff, “on average, the hourly flexibility requirement value was set 997 MW higher using the new programming application during those two weeks than for the week of June 6, 2009. Furthermore, Audit Staff notes that, on average, the 600-MW error resulted in more than a 15 percent increase in the flexibility requirement value for every hour.” *Id.* at 50-51.

Audit Staff's failure to address factors such as the trending of flexibility requirements and changes in load is a significant shortcoming in its analysis. For example, the trend in flexibility requirements could be due to a number of factors, including higher amounts of hourly purchases made in light of rising loads and/or higher QF put values as units came out of their outage season. Those factors and resulting trends cannot simply be ignored when attempting to determine whether the change in flexibility requirements was consistent with the recent history at the time of the change. Further, Audit Staff does not even identify the two weeks between June 20, 2009 and October 10, 2009 that it used for its comparison, making it impossible to provide a full analysis of Audit Staff's position. This failure to identify the weeks at issue is a particularly notable omission given that the issue is whether a change was consistent with *recent* operating history, the total period at issue is approximately four months, and the period covers two different seasons (Summer and Fall). Finally, it is worth noting that if one compares the increase in the daily average for hourly flexibility from the WPP Operating Week of May 30, 2009 to the two following weeks (June 6, 2009 and June 13, 2009) the average increase was 1,239 MW, well above the difference cited by Audit Staff in its analysis. Yet all of those weeks were, again, prior to the introduction of the error.

b. *Components of Flexibility*

According to Audit Staff "there are indications" that EMO's flexibility calculations include errors beyond the 600 MW error discussed above. Report at 45. However, Audit Staff does not identify any additional errors in flexibility calculations that even were alleged, much less supported by facts. The claim that there may have been additional errors in the calculation of flexibility thus should be removed from the Report.

Audit Staff does point to "several" failures of a "sanity check" that the ICT uses prior to implementing the WPP each week. *Id.* at 52. According to Audit Staff, such failures indicate that there are issues associated with EMO's calculation of flexibility requirements. However, Audit Staff fails to provide a number of facts that are pertinent to any meaningful discussion of its conclusions in that regard. *Id.* More importantly, Audit Staff misapplies the ICT's test and reaches conclusions the test simply cannot support.

Although Audit Staff places heavy reliance on the ICT's "sanity check"—it is the only additional "evidence" Audit Staff points to (in addition to the 600 MW error discussed above) to support its claims regarding flexibility—the first draft of the Report did not include any description of the ICT's test. After Entergy requested such a description, Audit Staff included one in new footnote 60 to the second draft Report. *Id.* That description, however, can only be described as cursory at best. The totality of Audit Staff's description is as follows: "ICT staff indicated that the check involved examining the unloaded generation on the EMO units." *Id.* n.60.

Given that (a) Entergy was not aware of the ICT's test prior to the Report, (b) Audit Staff did not appear willing to fully describe the test, and (c) Audit Staff places heavy reliance on the test, Entergy contacted the ICT to obtain a better understanding of the check the ICT uses. Based on its discussions with the ICT, Entergy understands the test as follows: First, before the WPP is run for a week the ICT determines the amount of gas generation that must be online to meet the projected load requirements for the WPP Operating Week. The ICT calculates that

amount based on the following formula: Projected Load + Sales - (Nuclear Capacity + Hydroelectric Capacity + Self-Scheduled Purchases + Coal Capacity). Second, the ICT determines the amount of flexibility that is available from Entergy's coal generation resources, and subtracts that amount from the flexibility requirement specified by EMO. Third, the ICT divides that difference (*i.e.*, the net amount of flexibility requirements) by the amount of gas generation that it calculated in accordance with the formula above. If that ratio exceeds 40 percent, the ICT concludes that the flexibility requirement may be constraining in Run 0 of the WPP. As Entergy explains below, though the ICT's test is very approximate, it is reasonable for the ICT's purposes. It is not, however, reasonable for the greatly expanded purposes for which Audit Staff suggests the test be used.

In addition to its failure to provide a meaningful description of the ICT's "sanity check", Audit Staff again fails to identify clearly pertinent information to the conclusions it is seeking to support. For example:

- Audit Staff does not identify the number of occasions the ICT's "sanity check" "failed." Audit Staff only notes that it was "several" occasions. *Id.* at 52.
- Audit Staff does not give any indication of the time-frame when the failures occurred. Most notably, Audit Staff does not even indicate whether the ICT's checks were failed during the period the 600 MW error was included in the model. Entergy notes in this regard that is not aware of *any* instance since that error was resolved—over ten months ago—when the ICT raised questions or issues with EMO regarding the level of the flexibility requirement.
- Audit Staff does not indicate the MW amounts by which the check was failed. The level of the "failure" clearly is pertinent information given that the check used by the ICT is very approximate.
- Audit Staff does not give any indication of the circumstances under which the failures occurred. For example, the flexibility requirement specified by EMO for an hour will never be less than the expected QF puts for that hour. Entergy suspects (thought it has not been provided any information to verify) that the violations may have been most likely to occur when the flexibility needed to satisfy QF puts could not even be met.

Without such information, it is not possible for Entergy even to analyze Audit Staff's claims and conclusions fully.

Such an analysis, however, ultimately should not be necessary, as failures of the ICT's "sanity check" simply do not show what Audit Staff claims, *i.e.*, that there may be an underlying problem in accurately modeling flexibility, that flexibility requirement may have been inflated, or that the data being used to calculate flexibility may be inconsistent with the data that is being used in the WPP. Nor does the ICT's "sanity check" show whether Entergy's own resources can satisfy the flexibility requirement specified by EMO for a particular week. The most obvious flaw in using the test the way Audit Staff does in the Report is the fact that the ICT's test does not attempt to analyze the possible supply of flexible capacity. There are no assumptions about

what units are committed or not committed, the flexible capability of those units, the dispatch level of individual units, or the potential for entering into purchases with flexible capability.

Notably, in Entergy's discussions with the ICT, the ICT made clear that the check it uses is a very approximate test and that the ICT does not use the check to determine whether the flexibility requirements specified by EMO are "reasonable." Rather, the ICT uses the test only to determine whether the WPP model likely will "struggle" to satisfy the flexibility requirement in Run 0 and whether the ICT should consider contacting EMO to verify that the flexibility requirement is correct.

One additional point is worth noting in this regard. Audit Staff appears to recognize that, to the extent there is a general concern that the results of the WPP could somehow be adversely affected if Entergy's existing resources cannot satisfy the flexibility requirement specified by EMO in a week, that concern is addressed because in accordance with Attachment V to Entergy's OATT the level of flexibility used in Run 1 of the WPP optimization is reduced by the amount of any flexibility violation in Run 0. In fact, in a given hour where the hourly flexibility soft constraint is violated in Run 0, the flexibility requirement is reduced in Run 1 by an additional amount equal to the higher of 10 MW or 10 percent of the violation amount. As noted, Audit Staff nonetheless places significant importance on the fact that, apparently, there have been "several" instances during the 75 weeks the WPP has been operated that the ICT's "sanity check" "failed."

There is, however, nothing remarkable or problematic in the fact that there can be times when EMO's existing resources may not satisfy the flexibility requirement it specifies in Run 0. This is because the conditions assumed for the purposes of Run 0 exist only in Run 0 of the WPP. In real-time operations, Entergy does not have to operate using only its owned and contracted resources. When necessary, in actual operation Entergy utilizes its co-owned coal units, makes short-term purchases, makes off-system sales, utilizes the low load event procedures contained in Generator Imbalance Agreements, curtails QF puts, and decommits generators that it had otherwise not planned to decommit to meet the actual flexibility requirements of the Entergy system. It should fully be expected that flexibility requirements are frequently binding and occasionally infeasible in the WPP, since none of these mitigation measures are explicitly modeled in the WPP. Indeed, the availability of the real-time options to address flexibility issues is one reason why the soft constraint penalty values for flexibility are the lowest penalties in the WPP model—the penalty values reflect the real-time options. When coupled with the adjustments to flexibility requirements made after Run 0 of the WPP optimization (discussed below), the approach used in the WPP provides a reasonable representation both of the purchases that should be made and the fact that there could be some violations of flexibility that are acceptable. Entergy also notes that it has explained repeatedly over the past several years that the WPP is a week-ahead forecast of actual real-time operations, and that the model includes a large number of different constraints. The system flexibility requirements are a significant constraint on the Entergy system, and meeting the flexibility needs is a constant challenge that system operators face every day. As a week-ahead procurement process, separate from operations, there is no basis to conclude that the forecasts and heuristic used in the WPP provide anything but a reasonable solution.

With regard to compliance with the OATT, under Section 3.4.3 of Attachment V:

In determining the level of flexible resources it requires, EMO shall determine the amount of flexibility required to account for load following requirements, generator imbalances, third-party schedules, qualifying facility put rights, and load forecast errors, and to provide sufficient flexibility to permit EMO to make economy purchases. EMO shall make such determination based on recent operating history and expected conditions projected out to the end of the applicable WPP Operating Week.

Entergy OATT, Attachment V § 3.4.3. Two important facts follow from this OATT provision. First, consistent with this provision, EMO determines the amount of flexibility it will need for the WPP Operating Week, *i.e.*, a week or more into the future. *Id.* (“EMO shall make such determination based on recent operating history and expected conditions *projected out to the end of the applicable WPP Operating Week.*” (emphasis added)). For the reasons discussed above, at the time it specifies the flexibility requirement for the WPP—*i.e.*, approximately a week in advance—EMO may not have sufficient flexibility to meet the requirements it expects for the WPP Operating Week.

Second, Section 3.4.3 specifically identifies the factors EMO may consider when calculating its flexibility requirement. There is no requirement that existing resources be sufficient to meet a specified flexibility requirement. Indeed, in response to Question No. 205 Entergy explained the process it uses to calculate its flexibility requirement. That explanation makes clear that the calculation EMO uses to establish its flexibility requirements is consistent with Section 3.4.3.

When Entergy filed to add the Run 1 adjustment to the flexibility requirement, Entergy explained that “if a WPP Participant’s flexibility requirements cannot be met in [Run 0], that may be an indication that the contracts and network resources currently available to the WPP Participant can not meet the flexibility requirements the WPP Participant specified.” Transmittal Letter, *Entergy Servs., Inc.*, Docket No. ER08-513-000 at 5 (Jan. 31, 2008). Entergy also explained that, because that circumstance may arise, it was proposing to amend Attachment V to the OATT to include the adjustment to flexibility requirements from Run 0 to Run 1 discussed above. *Id.* The Commission recognized the reasons for that adjustment and approved the proposed changes to the OATT. *E.g.*, *Entergy Servs., Inc.* 123 FERC ¶ 61,125 at P 16 (2008) (noting Entergy’s explanation) (“May 2008 Order”). The Commission thus has been fully aware that a WPP Participant, including EMO, may include flexibility requirements in the WPP that cannot be satisfied by existing resources. The Commission gave no indication that doing so was in any way problematic, and neither the ICT nor any stakeholder objected to the fact that WPP Participants may do so.

c. *Other Incorrect Claims Regarding Flexibility and the WPP*

The Report includes a number of other incorrect factual assertions regarding flexibility and the WPP. Entergy addresses those assertions below.

First, Audit Staff claims that “[t]hrough audit staff’s independent analyses and discussions with members of Entergy’s EMO business unit, the staff of Entergy’s Weekly Operations business unit, and the employees of the [ICT], it is clear that violations of the

flexibility constraint are the most frequent reason for not accepting economic bids.” Report at 48. That assertion is not correct. Since its inception, the WPP has been run for 75 weeks. In 26 weeks, the WPP model selected offers in Run 1, but the results of the WPP model were rejected by the ICT. In only 6 of those weeks were the offers not accepted due to flexibility violations.

Second, according to Audit Staff, “[t]he flexibility constraint is considered a soft constraint and can be changed by manual examination and manipulation of the model results to an extent permissible and unilaterally determined by the EMO.” *Id.* That is a misleading assertion at best, and an incorrect one at worst. As discussed above, flexibility requirements are adjusted after Run 0 of the SCUC optimization when those requirements are not satisfied in that run. Further, in accordance with the OATT EMO establishes an additional threshold for flexibility violations at the end of Run 1. That threshold was added based on the Commission’s finding in the May 2008 Order that “canceling the Weekly Procurement Process if any constraint cannot be satisfied in Runs 1 and 2 due to ‘minor, immaterial constraint violations’ is overly rigid and could lead to limited operation of the Weekly Procurement Process.” May 2008 Order, 123 FERC ¶ 61,125 at P 30. The Commission concluded that “some amount of flexibility reflecting the tradeoff between exceeding a constraint and completely denying service through the Weekly Procurement Process is reasonable.” *Id.* The Commission subsequently approved tariff language providing that the applicable WPP Participant (*e.g.*, EMO) establishes the acceptable violation level, *Entergy Servs., Inc.*, 126 FERC ¶ 61,242 at P 29 (2009), and EMO set the acceptable level of flexibility violations at 20 MW for any single on-peak hour that the model schedules a new purchase. A violation less than or equal to 20 MW in an hour thus will not cause the results to be deemed infeasible. If the threshold is violated in an on-peak hour, the ICT and Weekly Operations (not EMO) determine if the violation can be reduced to 20 MW or less with an “operational adjustment” (*e.g.*, a unit can be cycled, the start-up of a unit can be delayed, or a unit can be shut down earlier). If the ICT and Weekly Operations identify an operational adjustment that would bring the violation within the 20 MW threshold, the results are not deemed infeasible. Entergy notes that it notified the Commission of the 20 MW threshold EMO uses in Entergy’s January 2009 Compliance Filing. January 2009 Transmittal Letter at 4-5.

Third, Audit Staff claims that “[u]nder the terms of the current tariff, EMO has the sole authority to calculate and provide all input data to the WPP model, including the required level of flexibility.” Report at 49. Audit Staff also asserts that “[t]he ICT is not authorized to approve the model inputs and therefore simply performs high level cursory reviews of the data before the WPP model is run.” *Id.* at 53. These assertions again are not correct. EMO specifies flexibility, operating reserves, and cost data for its generating units, but the vast majority of the inputs used in the WPP model are not provided by EMO. For example, a significant amount of input data is obtained from the AFC process. With regard to ICT review of input data, it is not clear what data Audit Staff is referring to in the Report. However, the ICT is provided significant amounts of input data used in the WPP, such as load forecast adjustments, updated event files, and details from OASIS. The ICT may review that data, identify any issues it has with the data, and submit reports in the event issues are not addressed by Entergy. Further, Entergy and the ICT established a practice (not required by the OATT) to perform a “dry run” on the Tuesday prior to the Wednesday when the actual WPP runs are made. Through the dry run process, the ICT is able to review data inputs and other information before the actual WPP runs are performed, to help identify possible issues at the earliest time possible.

Fourth, Audit Staff claims that “the manner in which alternative economy power purchases are modeled by means of an exogenously produced flexibility variable may create a bias favoring economy energy over the WPP bids. Such an approach appears to violate the principle of creating effective competition between the alternative power suppliers and Entergy’s own legacy units.” *Id.* at 49. To the extent the Report is suggesting that economy purchases should not be reflected in the calculation of flexibility, that is not correct. The objective of the WPP is cost minimization for Entergy’s customers and the customers of Network Customers that choose to participate, not maximizing sales by suppliers. Audit Staff either fails to recognize that those two goals are not the same, or appears to believe incorrectly that the goal of the WPP should be to maximize sales by suppliers. The fact is, however, that consistent with the goal of the WPP Entergy’s OATT specifically provides that flexibility is to include an amount such that EMO will have sufficient flexibility to make daily and hourly economy purchases. Entergy OATT, Attachment V § 3.4.3. A determination thus already has been made, and reflected in the OATT, that the ability to make such purchases helps minimize costs for Entergy’s customers. In any event, even if economy energy were somehow being “favored” over purchases in the WPP (it is not), that does not favor Entergy’s generating units. Economy purchases, like WPP purchases, are made from third-parties. Finally, Entergy notes that the fact that flexibility is “exogenously produced” does not make that requirement unique. All of the inputs included in the WPP model are, by definition, “exogenously produced.” Report at 49.

Finally, according to Audit Staff :

In a phone conference discussing [the 600 MW issue], Entergy resisted re-running the model on three grounds: (1) it would be mere “idle curiosity;” (2) it was too expensive; and (3) the results would be inconclusive because the impact was “indeterminate.” Sensitive to concerns about incurring unnecessary expenses, audit staff asked the basis upon which the cost estimates were based and an explanation of why relaxing flexibility would not be expected to allow a higher likelihood of acceptance of bids. When Entergy could not support its contentions, audit staff followed up with a request to re-run the model for part of the time.

Id. at 51.

Audit Staff’s assertion that Entergy claimed that performing re-runs would be mere “idle curiosity” is not correct. *Id.* In response to a question asked by Audit Staff, Entergy explained that in the past it has not performed re-runs of the WPP after the results are announced because the results of the WPP are not re-settled, and thus performing re-runs does not have any practical effect. Contrary to the claim included in the Report, Entergy was not addressing Audit Staff’s request for re-runs. Further, Entergy does not agree that it failed to show that performing the re-runs requested by FERC would be burdensome and expensive. Entergy explained, among other things, that performing the re-runs was particularly complicated given the changes to the SCUC versions that were in place during the relevant time period. Ultimately, a limited set of runs was possible, but Entergy’s initial explanation in this regard was accurate.

3. *Response to Audit Staff Recommendations*

- Recommendation No. 14: Entergy should “[s]trengthen its controls over the data the EMO uses in the WPP model.” *Id.* at 53. *Entergy agrees with this recommendation.*

C. *Accuracy of the Weekly Procurement Process Results*

1. *Summary of Audit Staff Recommendations and Findings*

In the Report Audit Staff explains that “[t]he Weekly Procurement Process (WPP) model contained a bias in logic for the period from March 23, 2009 to September 2, 2009.” *Id.* at 54. Pointing to the assessment of the WPP model performed by Entergy and its consultants during the Fall of 2008, Audit Staff asserts that “Entergy became aware of this bias as early as September 2008 but failed to adequately address the issue until the ICT formally requested the model logic be tested and verified in August 2009.” *Id.* and n.61 (footnote omitted). Audit Staff states that this alleged delay in fully investigating and correcting the bias “is troubling and raises several major concerns,” including Audit Staff’s claim that Entergy did not “demonstrate[] a willingness to proactively monitor, analyze, and seek correction of model errors.” *Id.* at 56. Audit Staff also states that it is concerned that participants in the WPP may lose confidence in the process and reduce their participation because their prior knowledge of the selection process is not as useful when the process is changed. *Id.* According to Audit Staff, suppliers “are therefore subject to increased risk during their future bidding process.” *Id.*

Audit Staff makes the following recommendations to address these alleged deficiencies:

- Recommendation No. 15: Entergy should “[d]evelop a procedure for Weekly Operations to perform detailed sensitivity analyses of model results each week.” Report at 57.
- Recommendation No. 16: Entergy should “[s]chedule a weekly conference call with the ICT to discuss and compare analysis results to identify any potential software and modeling issues.” *Id.*

2. *Response to Audit Staff Findings*

Audit Staff is correct that there was a bias in the WPP logic from approximately March 23, 2009 to September 2, 2009. During that period, in some circumstances supplier offers with relatively large start up costs and comparatively low incremental (heat rate and fuel adder) costs may have been more likely to be selected in the WPP than offers that had approximately the same total cost but that were not as heavily weighted toward start up costs. However, Audit Staff’s assertion that Entergy failed to “adequately address the issue” until August 2009 is misleading at best, as is Audit Staff’s related assertion that Entergy did not “demonstrate[] a willingness to proactively monitor, analyze, and seek correction of model errors.” *Id.* at 54, 56. Entergy submitted a detailed discussion of this matter on August 17, 2010, including an affidavit from the consultants that prepared the report cited by Audit Staff. As discussed in that information and further below, Audit Staff’s assertions are inconsistent with the facts.

The risk assessment referred to in the Report was prepared by Dr. Roy Shanker and Robert Thomson, consultants for Entergy with significant experience in the development of optimization models and software, with the assistance of personnel in Entergy's Weekly Operations group. In a memorandum they prepared following their assessment of the WPP, Dr. Shanker and Mr. Thomson recommended (among other things) that Ventyx make the following improvement to the SCUC model: "Modify the penalty factors used for units not selected to run in the first iteration of the model so that there is no bias in the selection of units with differing cost structures in terms of the partition between the mix of variable cost and start up costs[.]"

As Dr. Shanker and Mr. Thomson explain in their affidavit, the recommendation included in their 2008 memorandum was related to the way the WPP model was comparing (a) energy supply resources (Entergy resources or resources offered into the WPP by third-party suppliers) selected after the initial iteration of the SCUC model against (b) those Entergy or third-party supplier resources that were not selected in the initial or subsequent iterations. Specifically, the WPP's SCUC model includes a "penalty factor" that is added to all supplier offers and to the cost data for Entergy's generating resources. The penalty factor reflects an "adder" to the marginal operating cost of each resource that is based on (a) the resource's start up costs and (b) potential losses the resource may incur by operating during hours when the locational marginal price ("LMP") is less than the marginal operating cost of the resource. At the time of the assessment performed by Dr. Shanker and Mr. Thomson, penalty factors were added to resources' marginal costs after the first iteration of the SCUC model (*i.e.*, they were not included in the first iteration of the model).

Under the approach initially adopted by Ventyx, the penalty factor for a resource selected to run was calculated based on the resource's actual operating schedule. Start up costs for such a resource thus were spread over the consecutive hours of operation for each start of the resource, and the losses for such a resource were determined based only on the resource's hours of operation. On the other hand, the penalty factor for a resource that was *not* selected to run was calculated using the average loss that the generator would incur had it been operated for all 168 hours of the WPP Operating Week. That average energy loss thus included extremely low cost off peak hours, when LMPs were low and the resource was clearly uneconomic. The penalty factor for such a resource also included the entire start up cost for that resource, rather than spreading the start up cost over a number of hours of operation.

Dr. Shanker and Mr. Thomson concluded that the original methodology for calculating penalty factors introduced a potential bias that could strongly favor retention of resources selected in the initial iteration of the WPP model, and recommended that the methodology be changed. Ventyx, the ICT, Entergy's Weekly Operations group, Dr. Shanker, and Mr. Thomson discussed that recommendation and, after considering several different possible solutions, agreed on an approach that they believed would address the bias that was identified at that time. Under the solution adopted by those parties, the penalty factor for a resource that was not selected in an iteration would be based on an evaluation of the best potential schedule for the resource, rather than all 168 hours of a week. This approach was selected explicitly to neutralize the bias against a resource that was not selected in the first iteration of the SCUC model, and thus to put all resources on as equal a footing as possible after the very first iteration of the model. Before the WPP became operational, the SCUC logic was revised to incorporate the approach agreed to by

the ICT, Entergy, and Ventyx; the new software version was tested and approved by the ICT; and the new logic was implemented.

All parties, *including the ICT*, believed that the approach implemented in 2008 would provide a comprehensive resolution of the bias that had been identified at that time. Among other things, that resolution should have created a relatively neutral selection regarding any trade-off between fixed and variable costs or operating constraints of the units for initial and subsequent iterations. That, however, turned out not to always be the case. Offer parameters, particularly gas prices, changed significantly after the initial change was made to the SCUC logic. As a result, the WPP model was running under circumstances and data that had not been experienced during the testing of the initial correction. Further, some supplier offers in the WPP began to show a change in bidding strategy, with a larger portion of costs included in the start up cost component of offers. In August of 2009, after the large change in offer parameters and a change in suppliers' bidding strategy, the ICT notified Entergy of a potential bias in the model that could be exploited by suppliers by structuring offers with higher fixed costs and lower variable costs.

After being notified by the ICT of this potential issue, Entergy and Ventyx conducted extensive testing and concluded that a bias did exist. Specifically, a supplier submitting an offer with a relatively low heat rate (variable cost) but relatively large start up costs (typically in excess of 20 percent of its total projected operating costs) was more likely to be selected in the initial iteration of the model than an offer with different characteristics. Based on the ICT's analysis, Entergy's own testing, and discussions with FERC Enforcement Staff, Entergy implemented an interim process to address that bias on September 2, 2009—less than two weeks after the ICT first raised its concern. To address the issue on a longer-term basis, the SCUC model subsequently was modified to include an initial set of penalty factors in the first iteration of the model. The ICT tested and supported both the interim process and the longer-term process before those processes were implemented.

There thus are important differences between the issue identified in 2008 and the issue identified in 2009. As Dr. Shanker and Mr. Thomson explain, "the August 2009 issue addressed a narrower bias than that identified in the fall of 2008." Further, the specific bias identified and addressed in 2008 related to SCUC model iterations *after* the initial iteration. The issue identified in August 2009, on the other hand, related only to the *initial* iteration of the model. Specifically, unlike the issue that was identified and addressed in 2008, the issue identified and resolved in 2009 related to the fact that start up costs were not considered for any resource (a third-party supplier's resource or an existing Entergy resource) in the first iteration of the model. Entergy notes that in 2008, as part of a proposal to address the general issue that had been identified at that time, the parties discussed adding a penalty factor to the first iteration of the model, but Ventyx advised against doing so. At that time, excluding start up costs from the first iteration of the model was considered reasonable, as start up costs were included in the offer penalties for resources in every iteration after that. The model runs for up to 40 iterations before converging to a solution, and so it was reasonable to believe the model would have sufficient latitude to change its commitment and dispatch decisions as it iterated to a solution. This assumption was accurate until August 2009, when the changes noted above arose. Only at that time did it become apparent that the initial iteration and the handling of start up costs could affect the solution.

In any event, regardless of how one views the relationship between the issue identified in 2008 and the one that became evident in 2009, the important point here is as follows: Entergy, in coordination with the ICT, acted on its consultants' 2008 recommendation prior to WPP implementation, and both Entergy and the ICT believed that the solution implemented at that time fully addressed that recommendation. When an unexpected issue subsequently arose, that issue also was addressed expeditiously.

Finally, Entergy responds briefly to Audit Staff's concern that the participants in the WPP may lose confidence in the process and reduce their participation when changes to the WPP are implemented. *Id.* at 56. Audit Staff suggests that suppliers are placed at greater risk when the selection process in the WPP is changed, as their experience with that process becomes less valuable. *Id.* To the extent that Audit Staff is suggesting that changes to the WPP should not be made to address issues that arise or to improve the process, Entergy does not agree. The WPP was developed and designed to provide benefits to Entergy's customers and the customers of any Network Customers that choose to participate in the WPP. When a change to the WPP can increase those benefits, Entergy should and will pursue that change. That is precisely what occurred here—the change implemented in 2009 addressed a bias in the model that could be exploited by suppliers in order to increase the suppliers' profits at the expense of Entergy customers. Entergy also notes in this regard that any disclosure that would allow suppliers to better game an issue or that otherwise would lower customer benefits should not be made. Here, again, disclosing the bias or the solution could have allowed suppliers to exploit that very bias, and thus information about the bias was not disclosed. As to Audit Staff's claim that this places a "risk" on suppliers, it is difficult to discern what that "risk" may be. *Id.* Entergy notes, however, that suppliers have ample opportunities outside of the WPP to offer to sell power to Entergy or any other purchaser.

3. *Response to Audit Staff Recommendations*

- Recommendation No. 15: Entergy should "[d]evelop a procedure for Weekly Operations to perform detailed sensitivity analyses of model results each week." Report at 57. *Entergy agrees with this recommendation.*
- Recommendation No. 16: Entergy should "[s]chedule a weekly conference call with the ICT to discuss and compare analysis results to identify any potential software and modeling issues." *Id.* *Entergy agrees with this recommendation.*

V. *Secondary Transmission Service*

A. *Summary of Audit Staff Recommendations and Findings*

The Report alleges that Entergy's marketing function reserved and confirmed eight secondary network transmission service requests from June 2007 to January 2010, to deliver energy across Entergy's transmission system from Entergy to non-designated loads. Report at 58-59. These reservations total 13 hours. Of the eight reservations, only three actually had schedules submitted on the reservation, for a total of 202 MW; each of these three schedules was submitted by the network customer, not Entergy. The Report maintains that Entergy should have requested Point-to-Point ("PTP") transmission service instead of secondary network service,

since it intended to use the transmission service for sales to non-designated loads. Audit Staff calculated the avoided PTP transmission charges totaling \$4,435 based on the rates for hourly non-firm PTP transmission service.

The Report recommends that Entergy: (1) set up controls to prevent marketing function employees from misusing NTIS to serve off-system sales; (2) develop training program for its marketing function employees to ensure that NITS is only used to serve Entergy's native load customers; (3) develop training program for its transmission function employees to ensure NITS customers properly use NITS; and (4) pay, from its marketing function, the avoided PTP charges. Actions on all recommendations must be submitted to Audit Staff for review.

B. Response to Audit Staff Findings

After requesting the specific OASIS reservation numbers from Audit Staff, as the Report did not specifically identify the eight reservations in question, Entergy has reviewed the following reservations: 1641589, 1488260, 1483008, 1473546, 1456847, 73448464, 73799010, and 73743813. Of these eight reservations identified by Audit Staff, five had no schedules submitted against the reservations, so no power flowed over those transactions at all. The three reservations where schedules were submitted, a total of 202 MW is at issue, over the course of three hours (one hour in each 2007, 2009, and 2010), and in each instance, the schedule was submitted by the network customer. It is clear from these facts that this issue is *de minimus* in the overall process for reserving and scheduling transmission service by the Entergy marketing function. As explained during the site visit to The Woodlands, as well as in various data responses, these reservations were made on behalf of Network Transmission Customers, LaGen and Conway, both of whom are network customers under Entergy's OATT. At the time these reservations were made, EMO personnel had made a sale to either LaGen or Conway, and put in a request on behalf of the customer, using that customer's Network Transmission Service, for the network transmission service necessary to sink the power to the customer's respective embedded control area.

Entergy repeatedly has emphasized to Audit Staff that Entergy was not using its own network service to serve the load of either LaGen or Conway. But because both control areas are also network customers within the Entergy transmission system, the business rules within the OASIS system do not offer a PTP transmission option for any network-customer designated load. Therefore, anytime Entergy or any other network customer making a reservation on behalf of LaGen or Conway that sinks within their respective control areas, only Network Service can be selected. Because both LaGen and Conway are NITS customers, it is their network service that is being used in such situations. Moreover, based on the Tag information, for each of the three transactions for which schedules were submitted, those schedules were submitted by either LaGen or Conway, not Entergy personnel. Base on this fact, it is clear that both LaGen and Conway had intended for Entergy to make the reservation on their behalf using their respective Network Transmission Service.

It is a relatively common practice, and not prohibited by the OATT, for a network customer to reserve network transmission service to serve another network load. In fact, just since Entergy's transition to the OATi OASIS in September 2009, Entergy has found 157 instances of confirmed Transmission Service Requests by one network customer reserving

network transmission for another network load. In each of these instances it is perfectly appropriate to use network service; there is no requirement in the OATT that it use Point-to-Point service in these instances. Moreover, there is no requirement that each network customer specifically designate in its NITS Agreement an agent authorizing them to reserve transmission on their behalf. Creating such a requirement does nothing to protect network loads and, in fact, only creates unnecessary administrative requirements for both the transmission provider and customers under the OATT. Furthermore, faulting Entergy, as a transmission provider, in this context is not consistent with Order No. 890-A. The network customer, not the transmission provider, must ensure it is complying with the OATT with respect to its network service arrangements: “it is the responsibility of the network customer to assure that the requirements of the pro forma OATT are satisfied.” Order No. 890-A at P 921. Furthermore, that Audit Staff is directing Entergy to prospectively modify its OATT demonstrates that this is not a compliance issue, but Audit Staff’s policy view of what the OATT policy should be on a going-forward basis. As a result, this is not properly within the scope of the audit.

Entergy disagrees with the Audit Staff’s calculation of the avoided PTP transmission charges, particularly for the requests that LaGen and Conway used by scheduling against them. The fact that these customers used the reservations made by Entergy indicates that they wanted the reservation to be made, and shows that they also had an expectation that their load was being served with their respective Network Transmission Service.

C. *Response to Audit Staff Recommendations*

Although Entergy does not believe that these reservations are violations of the OATT, it will accept all five recommendations on this issue.

- Recommendation No. 17: Entergy should “[s]et up controls to prevent marketing function employees from reserving secondary network service to serve off-system sales and provide the set controls to audit staff for review.” Report at 60. *Entergy agrees to this recommendation.*
- Recommendation No. 18: Entergy should “[d]evelop training programs for its marketing function employees responsible for reserving and/or scheduling secondary network service to ensure that secondary network service is only reserved to serve Entergy’s native load customers, unless reserved on behalf of another network customer pursuant to an executed agent agreement. Entergy should provide this training program to audit staff for review.” *Id.* *Entergy agrees to this recommendation.*
- Recommendation No. 19: Entergy should: “[d]evelop a training program for its transmission function employees responsible for approving transmission schedules to ensure NITS customers, including Entergy’s marketing function, properly use secondary network service. Entergy should provide this training program to audit staff for review.” *Id.* *Entergy agrees to this recommendation, subject to the Commission’s position in Order 890-A that maintains that transmission customers’ responsibility to ensure the requirements of the OATT are met for its network service.*

- Recommendation No. 20: Entergy should “[p]ay from its marketing function the avoided PTP charges and submit supporting documentation showing all calculations.” *Id. Entergy agrees to this recommendation.*
- Recommendation No. 21: Entergy should “[a]rrange to notify all parties to existing NITS agreements that if they desire to grant any other party, including but not limited to Entergy, the right to act as their agent, that there must be an executed agent agreement in place prior to allowing another party to exercise their rights and perform their obligations under the NITS agreement. Such a condition should also be inserted into the standard NITS agreement to be used in future NITS agreements between parties using the Entergy transmission system. Entergy should file the revised NITS agreement with the Commission.” *Id. Entergy agrees to this recommendation.*

VI. *Transmission Capacity Reassignments*

A. *Summary of Audit Staff Recommendation and Findings*

The Draft Report maintains that Entergy failed to report 12 reassignments of transmission capacity in Electronic Quarterly Reports (“EQR”) filings from the effective date of Order No. 890 to December 31, 2009. Report at 61. Additionally, the Draft Report maintains that Entergy reported inaccurate information for 30 reassignments in the Second Quarter 2007 through Fourth Quarter 2009 EQR Filings. *Id.*

B. *Response to Audit Staff Findings*

Entergy notes that the process for calculating the necessary reporting elements for reassignments in the EQRs is a manual process at this time, which requires several manual calculations. Additionally, as explained in the RFIs, Entergy has been in the process of re-filing several EQRs as a result of an earlier FERC audit specifically reviewing EQR submissions. In the course of those resubmissions, Entergy experienced several instances of erroneous data reappearing in the EQRs. Pursuant to earlier Audit-approved compliance plans, Entergy is correcting those EQRs.

C. *Response to Audit Staff Recommendations*

- Recommendation No. 22: Entergy should “[f]ile all unreported transmission capacity reassignments in its EQR as required by Order No. 890.” Report at 62. *Entergy agrees to this recommendation.*
- Recommendation No. 23: Entergy should “[c]orrect inaccurate reassignment information, and update EQR filings.” *Id. Entergy agrees to this recommendation.*
- Recommendation No. 24: Entergy should “[u]pdate processes and procedures for filing an EQR to ensure that accurate information is reported in its EQR filings. Entergy should provide updated procedures to audit staff for review.” *Id. Entergy agrees to this recommendation.*

- Recommendation No. 25: Entergy should “[d]evelop controls to ensure all transmission capacity reassignments are completely and accurately reported in its EQR filings. Entergy should provide test results of controls to audit staff for review.” *Id.* Entergy agrees to this recommendation.

VII. Reliability

A. Interruption of Non-Consequential Load in Response to Single Contingency Events

1. Summary of Audit Staff Recommendations and Findings

Audit Staff finds that Entergy, in planning its system under Reliability Standard TPL-002-0, relies on the curtailment of “non-consequential load” —*i.e.*, load that is not directly served by elements that are removed from service as a result of the single contingency. Report at 63. Audit Staff notes that certain FERC orders required NERC to modify Note (b) of TPL-002-0 to eliminate the use of non-consequential load shedding for single contingencies. Audit Staff expresses concern that Entergy’s proposed “phase-out” of the use of non-consequential load-shedding by 2015 may not comply with NERC’s future modification to TPL-002-0. Therefore, Audit Staff recommends (a) that Entergy provide an annual report on its non-consequential load at risk for single contingency events and its efforts to reduce the risks of the loss of that load and (b) that Entergy submit a schedule for eliminating the use of non-consequential load shedding to comply with NERC’s future modification to Note (b) “at or before its effective date.” Report at 66-67.

2. Response to Audit Staff Findings

Most of Audit Staff’s “findings” are recitations of Commission orders regarding the current process that is underway to revise Note (b) of TPL-002-0 through NERC’s standards development process. Audit Staff predicts that “[a]fter it is approved by the Commission as mandatory and enforceable, this revised Reliability Standard *presumably* will prohibit the use of non-consequential load shedding for single contingencies, subject to any regional differences, exception processes or other technically justified differences that the Commission approves.” *Id.* at 65 (emphasis added).

Audit Staff’s recitation of the Commission’s orders implicitly concedes that Note (b) of TPL-002-0 currently gives a Transmission Planner the discretion to use non-consequential load shedding in appropriate circumstances. That Note states that a Transmission Planner may plan for curtailments of load connected to or served “by the affected area” as long as the overall reliability of the system is not impacted. *Id.* at 64. Consistent with this plain reading, OER Staff has previously concluded that Note (b) is “ambiguous” and subject to “differing interpretations,”

concluding that one such interpretation is that it permitted non-consequential load shedding.⁴¹ In its Notice of Proposed Rulemaking leading to Order No. 693, the Commission also acknowledged that Note (b) “introduces ambiguity” and, therefore, required NERC to “modify” that Note to eliminate non-consequential load shedding.⁴² As a result, in Order No. 693, the FERC required NERC to use the Standards Development Process to clarify Note (b) to eliminate the ambiguity.⁴³

In other words, both the OER Staff and the Commission have recognized that one permissible interpretation of Note (b) is that it allows Transmission Planners to use non-consequential load shedding. Admittedly, the Commission in Order No. 693 did not agree that this interpretation should govern over the long term and therefore required NERC to modify Note (b) through the standards development process. But, of course, any such modification to Note (b) will not take effect until it is voted on by industry stakeholders, approved by the NERC Board of Trustees (“BOT”), and filed with and approved by FERC. Therefore, the current version of Reliability Standard TPL-002-0 does not prohibit non-consequential load shedding, and Entergy has not violated the requirements of that standard as it currently exists.

We further note that Audit Staff, in discussing the differences between Entergy’s transmission expansion plan and the ICT’s plan, leaves the incorrect impression that Entergy and the ICT disagreed on the interpretation of TPL-002-0. Audit Staff states that “Entergy’s position” is that Note (b) gives a Transmission Planner the discretion to shed non-consequential load. *Id.* at 66. In fact, this is the ICT’s position as well. The ICT issued an opinion in response to a question raised by an ICT stakeholder group stating that “the current NERC standards *do not prevent transmission providers from using non-consequential load loss as a mitigation plan.*”⁴⁴ Therefore, there is no disagreement between Entergy and the ICT over the meaning of Note (b) of TPL-002-0. Both Entergy and the ICT agree that Note (b) gives the Transmission Planner the discretion to use non-consequential load shedding, although the ICT in its transmission expansion plan chose not to exercise that discretion.

Despite Entergy’s disagreement with Audit Staff over Note (b) affects Entergy’s position on the Draft Report’s Recommendations Nos. 26 and 27, Entergy does not disagree with providing Audit Staff, on a voluntary basis, reports and a schedule pertaining to Entergy’s efforts to eliminate non-consequential load shedding in its planning for single contingencies under TPL-002-0. Entergy has no objection to providing, on a voluntary basis, information to the

⁴¹ Staff Preliminary Assessment of the North American Electric Reliability Council’s Proposed Mandatory Reliability Standards, Docket No. RM06-16-000 at 111 (issued May 11, 2006) (“Staff Assessment”).

⁴² *Mandatory Reliability Standards for the Bulk-Power Sys.*, Notice of Proposed Rulemaking, 117 FERC ¶ 61,084 at PP 1085-86 (2006); .

⁴³ *Mandatory Reliability Standards for Bulk-Power Sys.*, Order No. 693, FERC Stats. & Regs ¶ 31,242 at P 1794 (2007).

⁴⁴ See ICT Opinion on LTTIWG Base Case Contingency Overloads Task Force Recommendation, at 1 http://www.spp.org/publications/ICT_Opinion_BCCO_Recommendation.pdf (emphasis added).

Commission on phase-out of the use of non-consequential load shedding. However, Recommendation No. 27 states that Entergy’s schedule should be drafted “so as to be in compliance with the Reliability Standard containing the directed modification to footnote (b) at or before its effective date.” *Id.* at 67. Yet, as Audit Staff recognizes, the modifications to Note (b) have not yet been finalized, approved by a registered ballot body, approved by the NERC BOT, or filed with the Commission. As a result, Entergy does not know how Note (b) will ultimately be modified—*e.g.*, Entergy does not at this time know whether or what “regional differences, exceptions processes, or other technically justified differences” will be included in the modifications—and Entergy does not know what effective date will be established for this future modification. Therefore, Entergy is willing to share voluntarily with Audit Staff its proposed schedule to eliminate non-consequential load shedding in its planning under TPL-002-0, but cannot predict the outcome of a future standard on these issues. We will, of course, come into compliance with any standard that is finally approved by the Commission.

3. *Response to Audit Staff Recommendations*

- Recommendation No. 26: Entergy should “[s]ubmit a yearly report to audit staff on the amount and locations of non-consequential load for single contingency events and efforts Entergy has undertaken to reduce this risk of load loss.” Report at 67. *Entergy agrees to this recommendation.*
- Recommendation No. 27: Entergy should “[s]ubmit a schedule for reducing and eliminating planning for the use of non-consequential load shedding for single contingencies to audit staff so as to be in compliance with the Reliability Standard containing the directed modification to footnote (b) at or before its effective date.” *Id.* *Entergy agrees to this recommendation with the understanding that it does not require Entergy to comply with any revision to TPL-002-0 before its prescribed implementation date.*

B. *Evaluation of Protection System Non-Operation for Single Contingency Events*

1. *Summary of Audit Staff Recommendations and Findings*

Audit Staff finds that Entergy’s implementation of R1.3.10 of TPL-002-0 is consistent with the interpretation of that Requirement proposed by NERC in November 2009 (“NERC Interpretation”), but inconsistent with the interpretation proposed by FERC on March 18, 2010.⁴⁵ Audit Staff claims that Entergy’s approach is inconsistent with the March 2010 Interpretation because Entergy does not identify and incorporate into its plans the single points of failure on its protective systems. Although Audit Staff acknowledges that the March 2010 Interpretation has been opposed by the “overwhelming majority of comments,” Audit Staff contends that Entergy should demonstrate a “very strong proactive approach to compliance” by taking steps now to

⁴⁵ *Interpretation of Transmission Planning Reliability Standard*, FERC Stats. & Regs. ¶ 32,655 (2010) (“March 2010 Interpretation”).

implement the March 2010 Interpretation rather than awaiting the Commission’s ultimate determination on the proposed interpretation. Audit Staff further states that a March 30, 2009 NERC Advisory regarding single points of failure on protective systems⁴⁶ supports the need for Entergy to take steps now to comply with the March 2010 Interpretation. Therefore, Audit Staff recommends that Entergy follow the recommendations in the March 2009 Advisory and consider developing an action plan with a schedule for compliance with that Advisory.

2. *Response to Audit Staff Findings*

Entergy does not agree with Staff’s findings for several reasons. *First*, Audit Staff acknowledges that the March 2010 Interpretation has been opposed in the “overwhelming majority” of industry comments. Report at 71. But this statement does not capture the full extent of industry opposition to that proposed interpretation. The comments to the March 2010 Interpretation reveal that the industry’s opposition to the proposed interpretation is not only overwhelming, but also multi-faceted and virtually unanimous.

In the March 2010 Interpretation, the Commission rejected and replaced the NERC Interpretation, which was supported by 98.84% of the industry in NERC ballots. Comments to the March 2010 Interpretation were virtually unanimous in opposing the proposed interpretation. Opposing comments were filed by all sectors of the electric industry. For example, associations representing many diverse sectors of the industry—the Edison Electric Institute, the American Public Power Association, the Canadian Electricity Association, the National Rural Electric Cooperative Association, the Transmission Access Policy Study Group, and the Electric Power Supply Association—submitted extensive joint comments strongly opposing the proposed interpretation.⁴⁷ Also, the ISO/RTO Council which represents independent transmission organizations filed comments opposing the proposed interpretation.⁴⁸ The March 2010 Interpretation was also opposed by NERC and several regional reliability councils.⁴⁹ In total, twenty-six comments from entities in the United States and Canada were submitted in opposition to the proposed interpretation. Entergy is not aware of *any* comments that were submitted in support.

These comments raised a host of objections to the March 2010 Interpretation. Commenters objected to the proposed interpretation not only because it was inconsistent with the language, purpose and history of TPL-002-0, but also on legal grounds, reliability grounds,

⁴⁶ Industry Advisory: Protection System Single Points of Failure (Mar. 30, 2009) (“March 2009 Advisory”).

⁴⁷ Comments of EEI, APPA, CEA, NRECA, TAPS and EPSA, *Interpretation of Transmission Planning Reliability Standard*, Docket No. RM10-6-000 (May 10, 2010).

⁴⁸ Comments of ISO/RTO Council, *Interpretation of Transmission Planning Reliability Standard*, Docket No. RM10-6-000 (May 10, 2010).

⁴⁹ Comments of NERC For Interpretation of Transmission Planning Reliability Standard, *Interpretation of Transmission Planning Reliability Standard*, Docket No. RM10-6-000 (May 10, 2010).

engineering grounds, and cost-effectiveness grounds. For example, the following arguments were raised in opposition to the March 2010 Interpretation:

- The proposed interpretation is inconsistent with the language, intent and history of TPL-002-0;
- The proposed interpretation is contrary to industry practice;
- The proposed interpretation is technically deficient;
- The proposed interpretation is incorrect from an engineering perspective;
- The proposed interpretation will have an adverse impact on the interpretation of the other TPL standards;
- The proposed interpretation will have an adverse impact on reliability and the users of the bulk electric system;
- The proposed interpretation will have an adverse impact on electric power markets and available transmission capacity;
- The proposed interpretation violates the FERC's obligations under FPA section 215;
- The proposed interpretation violates the Commission's obligations under the Regulatory Flexibility Act;
- The proposed interpretation will impose exorbitant costs of approximately \$24 billion that will be primarily borne by ratepayers;
- The proposed interpretation will require the construction of facilities that could take up to twenty years to build.

Second, the Commission's discussion of the March 2009 Advisory does not recognize the purpose and scope of that Advisory. The March 2009 Advisory did not recommend any changes to the planning practices of electric utilities. Rather, the Advisory encouraged Transmission Owners, Generator Owners and Distribution Providers (a) "to address single-points-of-failure [in] routine system evaluations" and (b) "to begin preparing an estimate of the resource[s]" that would be needed "to address single points of" protective system failures. *Id.* at 72.

Further, the March 2009 Advisory did not take any position on the interpretation of TPL-002-0 and did not even address that standard or any other planning standard. Instead, the stated

purpose of the March 2009 Advisory was to assist NERC in developing an implementation plan for pending Standards Project 2009-7.⁵⁰ Project 2009-7 involved the development of a *new* standard that would require facility owners—*i.e.*, Transmission Owners, Generation Owners and Distribution Providers—to have protection system equipment installed to address problems with single points of failure. Moreover, as we describe in Section VIII.B, Entergy complied with the March 2009 Advisory on the matters that suggested action by registered entities. We also note that, unlike reliability standards, NERC advisories do not confer mandatory obligations on registered entities, but rather constitute recommendations that such entities “evaluate and take appropriate action.” NERC Rule of Procedure 810(4).

Response to Audit Staff Recommendations

- Recommendation No. 28: Entergy should “[f]ollow the recommendation in NERC’s March 30, 2009 advisory on single points of protection system failure. Entergy could further consider developing an action plan with a schedule. Upon the completion of the process, Entergy should provide the initial analysis, the assessments and any action plan to audit staff for review.” Report at 72. *Entergy believes it has already complied with the NERC advisory, but can agree with this recommendation to the extent it follows NERC Rule of Procedure 810(4) and does not convert the NERC advisory to a mandatory requirement as applied to Entergy.*

VIII. *Other*

A. *QF PUTS*

1. *Summary of Audit Staff Recommendations and Findings*

As Audit Staff explains in the Report, the large amounts of unscheduled injections by QFs, and even the possibility of such injections, raise a number of issues that impact the Entergy system. Report at 73. According to Audit Staff, “[t]he QF issues in the Entergy region . . . reflect the lack of a robust transmission system. Some areas in which QF power has developed have limited transmission infrastructure to effectively integrate the power. The current transmission capacity limits the efficient utilization of this least-cost resource.” *Id.* at 75. Audit Staff also asserts that “increased accuracy of forecasting QF output would clearly serve the best interests of all parties” and that reducing or managing the volatility of QF puts would reduce the need for the flexibility constraint in the WPP. *Id.* at 74.

2. *Response to Audit Staff Findings*

The claims made by Audit Staff regarding QFs are not within the proper scope of an audit. Such matters either would require changes to Entergy’s OATT (as opposed to compliance with existing OATT provisions) or otherwise are policy issues that have no connection to compliance

⁵⁰ March 2009 Advisory at 2.

with rules and regulations related to planning and operations, compliance with OATT requirements, or compliance with other obligations approved by the Commission. Entergy nonetheless notes that the Entergy Regional State Committee, which is made up of representatives from Entergy's retail regulators, is conducting workshops to discuss issues associated with QF puts on the Entergy system.

Even if they were within the proper scope of an audit, Audit Staff's findings regarding QFs and transmission infrastructure are incorrect. For example, according to Audit Staff "QFs or qualifying facilities are resources that qualify for special benefits pursuant to the Public Utility Regulatory Policies Act of 1978 [(‘PURPA’)], including *some limited rights* to sell power from the QF to a utility (QF put)." *Id.* at 13 n.13 (emphasis added). Audit Staff's description of QFs reflects a very basic misunderstanding of PURPA and the issues QFs raise. Rather than enjoying "limited rights" to sell power to Entergy, except in limited circumstances QFs on the Entergy system have an *absolute* right to sell power to Entergy, and to do so without providing any notice. *Id.* at 13. To accommodate this energy, Entergy must maintain flexible resources on the system that can be ramped down when a QF decides to put to the system and ramped back up when the QF decides to terminate the sale.

With regard to its claims about transmission infrastructure, Audit Staff points to no support for its claim that the Entergy region lacks "a robust transmission system" in general or that Entergy has a problem accepting QF power. Further, Audit Staff evinces a lack of understanding of the implications of avoided cost pricing in the context of QFs. When a utility purchases energy that is put by a QF, that utility pays its avoided cost. In that case the utility (or, more specifically, the utility's customers) is indifferent between generating power from its own resources or purchasing power from the QF. The notion of "least-cost" suggested by Audit Staff thus does not apply here. *Id.* at 14. Indeed, if a utility builds transmission infrastructure "to better integrate the QF" power, that utility's customers will pay for the costs of the transmission upgrades but still pay for energy at the utility's avoided cost. *Id.* at 75.

If a QF would like to receive more than it receives for energy that is put to the utility, that QF may enter into a contract to sell power to third parties or the utility itself, obtain any necessary transmission service, and pay for any required transmission upgrades. In that regard, to the extent that Audit Staff is suggesting that Entergy should go beyond the requirements of Order No. 890 and construct transmission facilities so that QFs may sell to third parties, Entergy does not agree that its customers should pay for the costs of such facilities. QFs or their purchasers may request transmission service under Entergy's OATT, and such service will be available in accordance with the OATT, including the rates, terms, and conditions associated with transmission upgrades.

However, notwithstanding that this subject matter is beyond the proper scope of an audit, Entergy agrees to take the steps proposed by Audit Staff in Recommendation No. 29, subject to consultation with affected stakeholders and the ICT regarding the appropriateness of any modifications. Indeed, Entergy already has adopted a structure to model QF puts in the WPP, based on the last best week of data available for actual QF puts on the system. Amounts of QF power will be treated as self-scheduled purchases of EMO, with injections at each QF. The ICT currently is testing the changes to the WPP software to implement that structure. Once it is

implemented, EMO will no longer include a base forecast of QF put quantities in the Flexibility requirements.⁵¹

Entergy can also agree to Recommendation No. 30 to the extent it does not advocate changes to the existing, Commission-approved transmission planning process that is overseen by the ICT. If any changes to that process are considered, they should not be through the unilateral recommendations of the Audit Staff but rather the open and transparent process that involves the E-RSC .

3. *Response to Audit Staff Recommendations*

- Recommendation No. 29: Entergy and the ICT should “[e]xplore ways in which enhanced forecasting of QF puts can be achieved and incorporated in the WPP.” Report at 75. *Entergy agrees to this recommendation.*
- Recommendation No. 30: Entergy and the ICT should “[e]xamine cost-effective transmission expansion planning options to better integrate the QF puts.” *Id.* *Entergy agrees with this recommendation to the extent it does not seek changes to the existing, Commission-approved transmission planning process.*

B. *NERC Reliability Alerts*

1. *Summary of Audit Staff Recommendations and Findings*

Audit Staff asserts that key Entergy personnel are either unaware of NERC alerts relevant to the functions or fail to give them due consideration. In making that claim, FERC Audit Staff identified a single NERC alert that relevant Entergy subject matter experts (SMEs) allegedly did not receive through Entergy’s distribution process, and two NERC Alerts on which Entergy allegedly took no action. Audit Staff does not elaborate on what is meant by “due consideration.”

Audit Staff also asserts that Entergy’s current NERC Alert procedure does not appear adequate. Audit Staff finds that the procedure (1) does not define who should be on distribution for Alerts which “undermines the intent” of the procedure to get NERC Alerts into the hands of those who actually plan and operate the BPS and (2) fails to prescribe any specific actions that should be taken in response to the Alert. Report at 78.

2. *Response to Audit Staff Findings*

NERC often either discovers, identifies, or is provided with information that is critical to ensuring the reliability of the bulk power system in North America. In order to effectively disseminate this information, NERC distributes e-mail based “alerts” designed to provide concise,

⁵¹ In the future, Entergy may include some amount of flexibility to account for the uncertainty of the forecasted QF puts that will be included in the WPP model under the new approach.

actionable information to the electricity industry. Generally, NERC distributes alerts broadly to users, owners, and operators of the bulk power system in North America utilizing its Compliance Registry. Entities registered with NERC are required to provide and maintain up-to-date compliance and cyber security contacts. Alerts may be targeted to groups of entities based on their registered functions (*e.g.*; Balancing Authorities, Planning Authorities, Generation Owners, etc.).

Audit Staff does not mention that the NERC alert notification system has evolved and matured since its inception in 2008. The NERC system for disseminating alerts continues to become more stable as it moves into its third year of existence. Early alert distribution by NERC was clearly not as organized or focused as the present system.

In addition to Alerts, NERC currently uses five other categories of issuances to provide information to the industry. Entergy fully supports NERC in developing a robust process for Alerts and for dissemination of useful information to industry stakeholders in timely useful formats. Entergy's internal program to address NERC Alerts, its active involvement in NERC, SERC and other industry functional committees, as well as standards development teams, indicates the Company's commitment to address industry issues as they become known.

Turning back to the Draft Report, Audit Staff enumerates the different types of NERC Alerts (Industry Advisory, Recommendation to Industry, and Essential Action) and recognizes that "Advisories [are] purely informational." *Id.* at 76. Indeed, citing NERC itself, the Draft Audit Report notes that Advisories are not reliability standards, that NERC makes the information in Advisories available for use as the registered entity sees fit, and that "no particular response is necessary." *Id.*

All of the Alerts addressed by Audit Staff are Industry Advisories. Audit Staff does not cite any "Industry Recommendations" or "Essential Actions" alerts which, unlike Advisories, identify specific actions that NERC deems essential to ensure reliability of the BPS. *See* NERC Rule of Procedure 810. Most importantly, Entergy in fact addressed the concerns raised in each of the three Advisories identified by Audit Staff.

- a. *Advisory on Protection System Single Point of Failure (March 30, 2009)*

The substantive requirements of the March 30, 2009 Interpretation is discussed *supra* at Section VII and we will not reiterate them here. However, contrary to Audit Staff's finding, Entergy *did* act on the advisory. At the time the Advisory was issued, a high level implementation plan was considered, but it was decided to not to take further actions until additional guidance came out through an industry-wide survey which NERC proposed to conduct. General analysis was performed. *See* RFI 1, Q#6.

In addition, following the March 18, 2010 Notice of Proposed Rulemaking, 130 FERC ¶ 61,208, Entergy formed a team to further evaluate the impact of these types of failures on the system. The team identified a sample of substations and has identified the single points of failure for those stations but is still working on the completing the reliability impact analysis.

Thus, the record before Audit Staff actually reveals that (1) there is no regulatory requirement to perform a study that takes into account the effect of backup or redundant protection systems that may be activated at the instant of a single contingency event; (2) at the time of Audit Staff's inquiry, NERC had reconsidered its approach of surveying a small group for feedback on this issue, but had not yet disseminated the full industry-wide survey, although it has taken further action in 2010; (3) the Industry Advisory stated that "no particular response is necessary," and that "[t]his Advisory is not the same as a reliability standard, and your organization will not be subject to penalties for a failure to implement this Advisory;" and (4) Entergy in fact took significant action to evaluate single points of failure. Report at 76.

b. *Advisory on Power Flow and Dynamics Modeling (March 10, 2008)*

Entergy objects to Audit Staff's assertion that Entergy SME's "were not informed of the Advisory by Entergy," with its implication that Entergy failed to distribute an Advisory. Report at 77. To the extent that Entergy itself was not "informed of the Advisory," this was because, as SMEs clearly described to Audit Staff during interviews, NERC did not publicly issue the Advisory. *Id.* Rather, Entergy's SMEs learned of it from their participation on SERC committees, and they subsequently distributed it within Entergy. In light of NERC's lack of uniform practices in the early days of issuing Industry Advisories, it is unfair to fault Entergy for its distribution of the Advisory. NERC is only now formalizing and standardizing its practice for issuing Advisories.

Moreover, as explained, since 2008, when NERC issued this Advisory, Entergy has taken several steps to ensure equipments ratings are up to date. Entergy set up a Configuration Management group with the responsibility of developing processing for tracking changes to field equipment and their implementation in the appropriate places, including models.

c. *Advisory on Unexpected Loss of Generation Due to Low Voltage (June 26, 2008)*

Entergy objects to Audit Staff's assertion that Entergy did not give "due weight" to this Advisory—whatever is meant by "due weight." *Id.* at 77. While the Advisory actually stated that "no particular response is necessary," Entergy gave the Advisory careful consideration and made plans for future action. *Id.*

Audit Staff quotes out of context a statement in email by an employee to the effect that Entergy would not plan on revising relay settings that protect generation until mandated in a Reliability Standard. As we have explained, Entergy did in fact give "due weight" to this Alert, culminating in a presentation to the executive level Reliability Operating Committee on December 10, 2008. *Id.*; Response to RFI 1, Question 141, "Final ROC Presentation – Excerpt December 10, 2008.pdf." Furthermore, Audit Staff does not consider the analysis underlying that presentation, which provided a basis for determining that Entergy should not revise the settings, in particular for older equipment, because such revisions posed a serious threat of major equipment damage, particularly on older fossil units. The analysis also noted that in the future, a Reliability Standard might mandate further analysis and revisions of protective relay settings, which provides the context of the email cited by Audit Staff. In other words, Audit Staff's

assertion that Entergy failed to give the advisory “due weight” is contradicted by the actual events. Report at 77.

d. *Adequacy of Entergy’s Current Procedure*

Audit Staff finds that Entergy’s current procedure for NERC alerts, OMM-PR-004, “NERC Alert Acknowledgement and Response” (the “Procedure”), is inadequate. Audit Staff reach that conclusion because 1) “four of the eleven manager-level subject matter experts interviewed by FERC staff” are not on the Alert distribution list, and 2) “Entergy’s procedure fails to prescribe any specific actions that should be taken in response to an Alert.” *Id.* at 78.

These findings are not supported by the facts. Entergy’s distribution of NERC Alerts is robust, and provides for dissemination of Alerts to appropriate personnel. Entergy has developed a NERC Alert information distribution process that efficiently disseminates the appropriate information to the correct personnel in a timely manner. Entergy has identified and entered ninety-two (92) key Entergy management and subject matter expert personnel into the NERC Alert System for notifications. The Entergy NERC Alert System automatically notifies these key personnel of the issuance of alerts for their area of interest. Once Entergy receives the Alert, a team is formed to take appropriate actions, which may include evaluating the impact, implementing information distribution plans, or responding to NERC if required.

The Procedure provides detailed instructions regarding who should receive NERC Alerts. The people on Entergy’s distribution are identified in accordance with NERC’s subject matter classification of the Alert. In addition, when NERC Alerts are received they are included on the Transmission Compliance weekly report which is reviewed Monday mornings with the management team. Information is distributed to the pertinent personnel as appropriate. Some Alerts, particularly those involving cyber security or vulnerabilities, are confidential, and are not supposed to be widely distributed.

As noted above, NERC does not specify uniform action requirements for addressing all Alerts. Each Advisory includes its own specific instructions regarding which entities are potentially affected, the type of actions recommended, and whether any response is required. Accordingly, the Procedure is designed to accommodate the full range of potential activities that might be included in an Alert.

Contrary to Audit Staff’s finding, Entergy’s Procedure does require appropriate action. Section 3.12.1 states that “[a]pplicable Entergy personnel will be expected to review the Advisory and take the appropriate action to address the issue or potential problem” and 5.4.1 states that “[T]he PCC will initiate Condition Reports in PCRS for each new Alert in order to capture the issue, track actions, and capture records relating to our response to the Alert[.]” including advisories.

As specified in the Procedure, a Condition Report is initiated for each Alert within the Paperless Condition Reporting System in order to capture the issue, track actions, and document the response to the Alert. Recipients are responsible for reviewing Alerts they receive and taking appropriate actions, including accepting assignments as team lead or a team member to develop a response.

Entergy provided training on the OMM-PR-004 procedure to appropriate Entergy personnel on January 6, 2010, so personnel are aware of the requirements regarding action on Alerts.

3. *Response to Audit Staff Recommendations*

- Recommendation No. 31: Entergy should “[e]nhance formal policies and procedures to ensure the following: (1) that all NERC Alerts are provided to the appropriate technical personnel in a timely manner, and (2) that Entergy’s technical experts produce a written evaluation of each Alert, including its applicability to Entergy and related action plans, to management.” Report at 78. *Entergy can agree to clarify the responsibilities for dissemination of Alerts and documentation of any action plans.*
- Recommendation No. 32: Entergy should “[c]omplete a written evaluation, including applicability and any corrective action plans, of the following Advisories: (1) Protection System Single Point of Failure; (2) Unexpected Loss of Generation Due to Low Voltage on the System; and (3) Power Flow and Dynamics Modeling.” *Id.* *Entergy can agree to perform a documented evaluation, including applicability and any action plans, for the three listed Advisories.*

CONCLUSION

Although Entergy objects to many of the findings in the Draft Audit Report, Entergy is able to accept, in whole or in part, all of the recommendations set forth in the Draft Audit Report. Entergy urges the Commission, upon receipt of Audit Staff’s final report and this response, to adopt the recommendations, as discussed herein, and hold that no further proceedings are necessary to resolve the underlying factual disputes.

Respectfully submitted,

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October 22, 2010

AUDIT STAFF COMMENTS
ON
ENTERGY RESPONSE TO DRAFT AUDIT REPORT

I. Introduction

On October 1, 2009, the Division of Audits, in conjunction with staff from the Office of Electric Reliability, Division of Compliance, commenced an audit of Entergy Services, Inc. (Entergy), covering the period of April 1, 2006 to July 19, 2010. Entergy was advised of the audit scope in the October 1, 2009 audit commencement letter, which was as follows:

- (1) Entergy's compliance with the requirements of its Open Access Transmission Tariff (OATT);
- (2) Entergy's practices related to Bulk Power System planning and operations; and
- (3) Entergy's other obligations and responsibilities as approved by the Commission.

Following discovery, numerous face-to-face meetings and phone conferences with Entergy employees and counsel, email exchanges and site visits, Audits prepared a draft audit report. In accordance with its customary practice, it sent the draft report to Entergy for comment. Entergy provided Audits with a response, in which it agreed, in whole or in part, with all 32 of the recommendations in the audit report. However, even with respect to those recommendations with which Entergy has agreed, the company disputes certain of the findings relating to those recommendations. The company presented these items of disagreement in its response, although it requests the Commission to adopt the agreed-upon recommendations and hold no further proceedings to resolve the underlying factual disputes.

In its response, Entergy also submitted introductory remarks criticizing what it perceives to be unfair observations by Audits concerning independence in the administration of the available flowgate capability (AFC) and Weekly Procurement Process (WPP) processes, and of transmission adequacy on Entergy's system.

The introductory criticisms of Entergy regarding the WPP and transmission adequacy are addressed immediately below, followed by a discussion of Entergy's specific objections to the findings themselves.

II. Entergy Remarks Regarding Independence and Transmission Adequacy

Entergy criticizes Audits' observations about the administration of the AFC and WPP programs, characterizing them as concerns over independence. (Although the company mentions AFC, its actual discussion addresses only WPP). Entergy further asserts that Audits' conclusions appear to rest on concerns expressed by market participants, and that such presumably self-serving concerns should not form the basis for a determination that the WPP lacks independence.

Entergy misunderstands both the nature of Audits' concerns and the basis for them. Audits is concerned about a diminution of participation in the WPP that may result from a loss of confidence in the process. And it derived these concerns not from private discussions with profit-seeking market participants (although there would have been nothing improper in gathering information and opinions from these sources), but from public statements made by representatives of many entities, including state commissions, the Independent Coordinator of Transmission (ICT), and Entergy stakeholders. As one recent example, the need for greater participation in WPP was discussed at the September 9, 2010 meeting of the Entergy Regional State Committee (E-RSC), held in New Orleans, Louisiana. At that meeting, the ICT spokesperson observed that there was a need to increase participation in the WPP, and opined that this could be accomplished by process changes that would "increase stakeholder participant confidence."¹

Entergy further contends that Audits' findings relate to errors or delays in implementation and not to "undue discrimination," and are thus not properly independence issues. Entergy also criticizes Audits for not appreciating that regional transmission organizations and independent system operators (collectively, RTOs) experience errors and delays as well. Entergy seems to assume that Audits is not concerned by such problems if experienced by RTOs, which is not the case. But Audits also believes there is a pressing need for procedures to safeguard WPP from such problems, which lead to a loss of confidence. Errors on the part of RTOs, which are disinterested entities, are less likely to engender suspicion by their participants than are errors by Entergy, which has a vested interest in the process by virtue of the fact that it also supplies energy through the WPP.

With regard to transmission adequacy concerns, Entergy merely cites to Audits' remarks that there are obstacles to obtaining transmission service and a

¹ Sept. 9, 2010 Minutes of E-RSC at p. 21.

lack of robustness on Entergy's system. But it fails to dispute the remarks, and in fact, they are not particularly controversial. At the above-mentioned E-RSC meeting, similar statements were voiced by many participants, and the President of the Texas Public Utility Commission specifically characterized Entergy's grid as lacking in robustness.²

Rather than take issue with Audits' observations regarding transmission adequacy, Entergy tries to characterize the matter as one of who should pay for transmission upgrades. But that is a subject that is neither germane to the audit nor discussed in the audit report. Rather, Audits' remarks about access to Entergy's transmission system serve as backdrop to its discussions of the areas, such as WPP, that it did examine in the audit.

III. Entergy Remarks Related to Audit Findings

Audits addresses below those of Entergy's objections that relate to findings supporting the draft audit report recommendations. These objections fall into the following areas: AFC, WPP, Secondary Network Transmission Service, Reliability, and QF Puts.

A. AFC

Audits examined Entergy's practices concerning AFC on the Entergy transmission system to determine, among other things, if the company's AFC calculations were consistent with its OATT; to evaluate the company's quality control and data retention processes; and to review the AFC-related error reports filed with the Commission. Entergy agrees with all of Audits' AFC recommendations, although subject in some cases to technical limitations as to their implementation. However, Entergy disputes certain of the findings underpinning the recommendations. These are addressed below.

1. Reporting Errors

Under the April 2006 order that conditionally approved Entergy's ICT arrangement,³ Entergy is required to report AFC-related errors it discovers to the

² *Id.* at p. 116.

³ *Entergy Services, Inc.*, 115 FERC ¶ 61,095, *order on reh'g*, 116 FERC ¶ 61,275, *order on compliance*, 117 FERC ¶ 61,055 (2006), *order on reh'g*, 119 FERC ¶ 61,187 (2007) (ICT Order). The ICT manages the Entergy OATT and grants transmission service requests.

Commission (i.e., if it has lost data, reported incorrect data, or otherwise mismanaged data⁴). In the course of its review, Audits determined that Entergy had failed to report 22 AFC-related errors to the Commission (reduced to 20 in the final Audit Report). In its initial Response, Entergy argued that five of these errors were in fact reported to the Commission, 13 were not reportable, and that neither Entergy nor Audits had sufficient information to determine if the remaining four were reportable.

As to three of the five errors in the first category, the company apparently takes the position that these were reported simply by virtue of the fact that it had reported earlier instances of the same or similar nature. This umbrella approach to reporting is not supported by the ICT Order, nor does it make logical sense. It can readily be seen that vast numbers of errors could escape notice simply by being deemed by Entergy to be similar to earlier errors. In fact, it would seem especially important that repeat errors be reported, to make sure Entergy has rectified the processes that led to the earlier errors.

As to the remaining two errors in the first category of five, Entergy submitted new information in its initial Response to the draft audit report that enabled Audits to determine that these two errors had in fact been reported to the Commission. Consequently, Audits has removed those two allegedly unreported errors from the final Audit Report, leaving a total of 20 AFC-related errors that were not reported to the Commission. However, the fact that additional supplemental information had to be supplied after Audits' fieldwork had been completed points to the difficulty in linking error reports to the incidents in question. This tracking difficulty supports Audits' recommendations that more detail be included in the error reports.

With regard to the second category of errors, Audits disputes Entergy's assertion that these 13 errors did not need to be reported. As noted, if AFC-related errors result in lost, inaccurately reported or mismanaged data, they are reportable. The ICT found and cited 11 of these errors in its quarterly performance reports,⁵ and Entergy did not at the time dispute their reportable nature. The remaining two of the 11 were discovered by Audits and not reported by either Entergy or the ICT. Although requested by Audits to provide evidence that these errors were not in fact reportable, the material Entergy supplied did not satisfy Audits' concerns.

⁴ *Id.* at P 10.

⁵ ICT Quarterly Performance Reports of 6/27/07, 10/2/07, 12/31/07, and 5/9/08, all filed in Docket No. ER05-1065.

As to the third category of errors, Entergy claims there was insufficient information to determine if these errors were reportable. However, they were cited by the ICT in its quarterly performance reports,⁶ and Entergy did not at that time dispute that they were reportable. The mere fact that Entergy itself did not have adequate information to assess the reportability of these four errors is not dispositive. In fact, if Entergy cannot determine that they should not have been reported, the company should err on the side of caution and report them.

Entergy is required under the ICT Order not only to report AFC-related errors, but to do so within 15 days of their discovery.⁷ Audits identified two errors that were reported past the deadline. Entergy disputes these findings. The first error consists of the failure of a software application to capture redirected transmission service requests in study mode during resynchronization. Entergy did not report this error when first discovered because the ICT had developed and implemented a manual work-around, which it later failed. However, the development of a solution does not relieve Entergy of its obligation to timely report an error. Audits expects the company to take steps to rectify every error. If taking such steps excused the failure to report, it would make a nullity of the reporting requirement.

The second untimely reported error concerned Entergy's discovery that the network resource designation values for two facilities were not correct. Entergy concedes that it did not report these inaccuracies when first discovered, but states it delayed reporting them to determine whether in fact they were reportable. As a consequence, the company did not file a report until some two and a half months after the date of discovery. But Entergy should not unilaterally extend its reporting deadline analyzing whether or not an event is reportable. The incorrect values constituted a reportable error, and Entergy by its own admission missed the deadline by some two months.

Audits also recommended that the transparency and detail of AFC-related error reports be improved by the inclusion of specified informational items. Entergy stated that some of the requested information could not be provided within the 15-day reporting timeframe, but could be provided later. Audits agrees that to the extent the necessary analyses cannot be completed within the 15-day period, the items can be later reported in another Commission-approved manner.

⁶ ICT Quarterly Performance Reports of 6/27/07 and 10/2/07, both filed in Docket No. ER05-1065.

⁷ *Id.*

Such reports should be identified by reference to the initial reports filed in accordance with the 15-day requirement.

2. *Quality Control*

Entergy quarrels with two statements made in the draft audit report summarizing the ICT's authority over corrective actions. Audits had stated that Entergy is not compelled to make ICT-recommended corrections to the AFC process, and that Entergy adopted "most" ICT recommendations. Entergy argued that it is required to modify the AFC software at the ICT's direction, and that it has adopted all corrective actions proposed by the ICT. Audits agrees that under Attachment S of Entergy's OATT, the ICT is given the authority to direct Entergy to modify AFC software so that AFC values are calculated in a manner consistent with the AFC criteria posted on OASIS.⁸ However, this is a more limited authority than that described by Audits. In any event, Audits has modified the language in the final Audit Report to more accurately reflect the scope of the ICT's authority. On the issue of whether Entergy adopted all of the ICT's recommendations, the ICT informed Audits that Entergy had *in most cases* adopted its directives. Entergy did not provide Audits with sufficient evidence to show that it adopted all ICT directives, and in fact stated that it did not have a reliable record for each such instance. Audits was therefore unable to state that all of the directives had been adopted.

As mentioned above, Entergy also has technical feasibility concerns with certain of Audits recommendations. The first involves Audit's recommendation that changes to AFC values be evaluated by the ICT before posting. While Entergy has no objection to the data inputs that are updated once or twice a day being reviewed by the ICT prior to incorporation into AFC values, it believes that such review would not be possible for more frequently occurring data input changes. Audits suggests that Entergy and the ICT work together to develop procedures by which data input changes can be validated prior to incorporation into AFC values. However, Audits concurs that implementation of its recommendation must conform to technical limitations. The details of those limitations should be addressed in the implementation phase of the audit.

One of Audits' recommendations in this area related to the creation of additional quality control procedures for AFC data. Entergy complains that Audits did not adequately address in the draft audit report the company's recent improvements to its quality control procedures. Notwithstanding that reservation,

⁸ Entergy Services, Inc., FERC Electric Tariff, Third Revised Volume No. 3, Original Sheet No. 853 (Attachment S, section 8.3).

Entergy agrees to the development of further quality control procedures, subject only to technical limitations that may be presented by data inputs incorporated directly into AFC models from field data and other sources. Audits concurs in the need for technical limitations, and believes that the best manner to take both the technical limitations and Entergy's ongoing improvements into consideration is in the implementation phase of the audit.

B. WPP

Entergy's WPP is designed to allow merchant generation and other wholesale suppliers to compete to serve Entergy's native load customers.⁹ It is governed by Attachment V of Entergy's OATT. Audits made a number of findings in the draft audit report with respect to WPP, which address the accounting classifications used for various expenditures, errors in the WPP software, the bias inherent in the flexibility constraint modeling, and other matters. Entergy agrees with all of Audits' recommendations.

1. Accounting Classifications

Entergy contends that since costs related to WPP were recently proposed for inclusion in rates via the company's annual rate update submission, its customers had the option to seek discovery about them and to file a complaint with the Commission. The company concludes from this that the WPP project costs should not be included within the scope of the audit. The short answer to this objection is that the Commission has its own independent obligation to review the books and records of public utilities.¹⁰ The fact that customers of Entergy may or may not have taken issue with Entergy's rates has no bearing on that obligation.

Entergy objects to Audits' finding that certain legal work performed by Entergy should have been expensed, although it agrees it included the preparation of filings before the Commission, which is typically expensed. Entergy contends that the bulk of the work in question pertained to the development of the WPP, and for that reason should have been capitalized. Audits' understanding of the type of legal work the company included in WPP project costs was based on information provided by the company itself, which consisted of attorney invoices with only terse descriptions of the legal work. Entergy provided more detailed material only after the draft audit report was issued, and this material would require verification to determine whether the representations made are accurate. Given Entergy's

⁹ ICT Order at P 246.

¹⁰ 16 U.S.C. § 825 (2006).

inability to timely back up its claims that the work should be capitalized, Audits had no choice but to assume they should be expensed (as is customary for legal fees). Audits has recommended that an independent review be made of the costs charged to the WPP project, a recommendation with which Entergy agrees. Verification of Entergy's claims can be accomplished in the course of that review.

A similar situation arises with respect to services charged by the ICT to Account 107, which includes both the development of control procedures for ICT functions relating to WPP and the development and filing of tariffs with the Commission. Here again, Audits relied on the information Entergy provided during the audit, and found that these costs should have been expensed. After receiving the draft audit report, Entergy supplied additional information which it claims show that the costs related to the design, scope, configuration, and testing of WPP and thus should be capitalized. However, Audits cannot adjust its finding without verification of those claims. This can also be accomplished during the independent review of accounting costs mentioned above.

This same issue arises with respect to certain payroll and employee benefit expenses and the work-time of four specific employees, which Entergy contends should be capitalized to the WPP project. These claims were not substantiated during the audit. In fact, Audits' conclusions were informed by its interviews with a sample of the employees involved. (For instance, the work described included developing a risk analysis to determine how to conduct audits of the WPP; such costs are not part of the WPP project itself.) These problems of verification underscore the need for an independent review of accounting costs, at which time the appropriate classification of the various costs can be finally resolved.

Lastly on the general issue of accounting classifications, Entergy objects to Audits' conclusion that Entergy's accounting treatment of construction overheads warrants additional study. But Audits was not given sufficient information by the company to substantiate its claim that construction overheads, which it charged to the WPP project, were incurred in connection with WPP. Entergy has agreed that these charges be included in the independent review recommended by Audits, which should provide a definitive determination as to how these costs are to be classified.

2. Errors in the Flexibility Constraint

As explained at greater length in the Audit Report, the WPP affords third-party suppliers the opportunity to displace Entergy's older, less efficient oil and gas units by submitting bids from its new, more efficient generators. Absent the commitment of these third-party units to serve Entergy's loads, Entergy commits and dispatches its legacy units to allow operating flexibility, permitting them to be

ramped up to substitute for unavailable qualifying facility (QF) or economy energy power, or to meet demands created by contingencies such as outages and unexpected changes in load. The WPP model attempts to take into account the need for such operating flexibility with a technique termed the “flexibility constraint.”

From discussions with ICT personnel, as well as from its independent analysis, Audits determined that violations of the flexibility constraint were a frequent reason for not accepting economic bids. As the audit report indicated, the importance of the flexibility constraint in this regard can be demonstrated by examining a reported error in the flexibility constraint itself. For approximately a four-month period in 2009, WPP was run and bids were selected with an additional 600 MW of flexibility beyond the level Entergy’s Energy Management Organization business unit (EMO) had intended. At Audits’ request, the WPP selection process for a portion of this period was rerun with a lower and more accurate flexibility requirement. This resulted in significant incremental economic offers being selected from the third-party bids.

Entergy takes issue with Audits’ criticisms of the company’s failure to initially detect the 600 MW error in the automated flexibility calculation. Entergy argues that Audits reached its conclusions of error on the basis of modeling output, which it suggests is an imperfect tool for this purpose. But Audits’ analysis, which was based on a comparison of two weeks of data from the 600 MW error period with data from a week prior to the introduction of the error, demonstrates that the error affected both the operation of and output from the model. Therefore, in Audits’ view, Entergy should have been able to detect an error of this magnitude from the output alone.

Nonetheless, Audits agrees that attempting to detect errors in EMO-supplied data is difficult if limited to an examination of only the model output. That is precisely why Audits recommended that the ICT be given greater ability to monitor the WPP and in particular its flexibility requirements. Audits would have liked to see the ICT be given the ability to conduct systematic validation of the EMO-supplied data prior to the operation of the WPP. At present, only Entergy and its software vendor have access to the data input formulas and the software code, and thus it is Entergy alone that is in a position to conduct the necessary validation of results. The ICT faced all the limitations inherent in having only the output with which to work. The fact that it was nonetheless the ICT rather than Entergy that detected the 600 MW error speaks to the diligence of the ICT despite these obstacles. It also suggests there are inadequacies in Entergy’s processes that could be ameliorated by providing the ICT with better monitoring tools.

Entergy quarrels with Audits' statement that the EMO's flexibility calculations appear to include errors beyond the 600 MW error cited above, and finds fault with Audits' apparent reliance on "sanity checks" conducted by the ICT, which Entergy contends are inadequate. But the fact that Entergy's processes allowed the 600 MW error to be introduced and to persist for many months, resulting in the failure to procure significant volumes of third-party energy through the WPP, is itself significant enough to lead Audits to recommend that the ICT review and validate the underlying assumptions in the model and its calculation of flexibility. And Entergy's concerns with the alleged weaknesses of the ICT's sanity checks, which are necessarily limited to examination of outputs, serves only to buttress Audits' recommendation that the ICT be given greater ability to monitor the WPP.

Entergy points to the complexity of its real-world operations as an excuse for the failure of the WPP model to produce a result that adequately satisfies the company's self-imposed requirement for flexibility with respect to its own resources. But this argument serves again to underscore the fact that there are input verification and modeling flaws that need to be addressed. The EMO is the only entity that both sets the flexibility requirement and provides the slate of resources by which the flexibility must be met. The fact that this combination of inputs and modeling logic fails to produce a viable solution is the basis of Audits' concern, and the reason why Audits proposed that the ICT be more directly involved in seeking resolution to these problems. The real-world complexity cited by Entergy, coupled with the model's known failures, suggest that additional access by the ICT to both the model and its inputs might assist in resolving some of the problems apparent not only to Audits and the ICT, but to Entergy itself.

Entergy takes issue with the statement in the draft audit report that violations of the flexibility constraint are the most frequent reason for not accepting economic bids. Entergy contends that in only six out of 26 weeks were the offers not accepted due to flexibility constraints. Entergy misunderstands the nature of the concerns Audits has with the flexibility constraint, concerns which it reached based on its own analysis and on discussions with members of the EMO unit, the staff of Entergy's Weekly Operations business unit, and employees of the ICT. Audits was addressing not just the model's output, but also the manner in which the flexibility requirement impacts the evaluation of bids. The significance of the impact of the flexibility requirement can be illustrated by reference to the above-mentioned rerun of the WPP software after correction for the 600 MW error. That rerun, the results of which are included in the audit report, demonstrated that bids that were economic in each of the weeks considered had been excluded by operation of the flexibility constraint, and further demonstrated how profound that impact can be. It is thus highly desirable that the flexibility constraint not be inflated by either input errors or modeling errors, a result Audits

hoped to have furthered by allowing greater ICT access to the model and validation of the EMO-supplied input data.

Entergy also takes issue with Audits' identification of the EMO as the entity that has the authority to calculate and provide inputs to the WPP model. While Audits agrees that it is the EMO that set the 20 MW threshold under discussion, it states that it is Weekly Operations, along with the ICT, that has the discretion to apply this threshold in evaluating model output. Audits clarifies that with respect to the calculation of inputs, Audits was not referring to all WPP input data, but rather to the EMO input data. Entergy also mischaracterizes an observation in the draft audit report concerning the model's favoring of economy energy. Entergy suggests that Audits was taking the position that economy purchases should not be reflected in the calculation of flexibility. Audits does not take that position, and did not make any such statement in the draft audit report. Economy energy should be reflected, but in an appropriate manner.

3. Bias in the Model

Entergy concedes that Audits correctly identified a bias in the WPP logic that manifested itself during a six month period in 2009. But it takes issue with Audit's conclusion that Entergy failed to adequately address the issue. Entergy cites to a 2008 study, performed by outside consultants, that recommended a solution to a software problem identified in that year. Although the problem identified in 2008 was related to the problem that manifested itself in the six-month period of 2009, the solution devised in 2008 addressed only one aspect of the problem, not the entire problem (as demonstrated by the fact that a bias concededly remains). Entergy's efforts in 2008 cannot therefore be cited to support the notion that the company has adequately addressed the problem that surfaced in 2009.

Entergy contends that all parties, including the ICT, believed that the approach taken in 2008 would provide a comprehensive resolution to the bias problem. But that is not correct. The ICT informed Audits that it was not even involved in the discovery or development of the 2008 software fix.¹¹ Furthermore, Entergy did not address the 2009 problem until the ICT formally requested that the model logic be tested and verified. This course of events informed Audits' recommendations regarding enhancements to and ICT involvement in the modeling analysis process.

¹¹ The information was provided in a discussion documented by Audits staff with contemporaneous notes that were incorporated into a working paper. Aug. 19, 2010 Audits staff Memorandum to File, documenting 8/18/10 conference call among Audits staff and Entergy personnel.

C. Secondary Network Transmission Service

Entergy's OATT prohibits the use of network transmission service other than to service network load.¹² Between June 2007 and January 2010, Entergy's marketing function reserved and confirmed eight secondary network transmission service requests to deliver energy across Entergy's system to non-designated loads located outside of its system. Entergy argues that of these eight reservations, only three actually had schedules submitted on the reservation. Nonetheless, since it is improper to actually transmit energy via network service to non-designated loads, it is also improper to make a reservation to do so.

Entergy contends that it was acting as an agent for the customers to whom the power was directed. However, there is no record of such agency, nor has Entergy provided a contract of agency to document its claim.

Lastly, Entergy takes exception to the finding that it should have reserved point-to-point transmission for the transactions in question, arguing that it is up to the customer, not the transmission provider, to ascertain the propriety of network service arrangements. This argument overlooks the fact that it was Entergy's own merchant function that reserved and confirmed these arrangements.

In any event, Entergy has agreed to Audits' recommendations on secondary network transmission service. These recommendations include the setting up of controls to prevent improper network reservations, providing training to the company's marketing function employees, and regularizing agency arrangements with the company's network transmission service customers.

D. Reliability

Of the five recommendations pertaining to reliability matters that remain in the final audit report, Entergy agrees with three and agrees, subject to clarifying limitations, with the other two. Entergy's objections to the findings are discussed below.

1. *Non-Consequential Load*

Reliability Standard TPL-002-0 addresses system performance under conditions involving the failure of a single element (*i.e.*, a single contingency). In

¹² Entergy Services, Inc., FERC Electric Tariff, Third Revised Vol. No. 3, Substitute Original Sheet No. 108 (section 28.6). This is in accord with section 28.6 of the Commission's pro forma OATT.

Order No. 693,¹³ the Commission provided guidance on the practice of shedding firm load not directly served by the elements removed from service, referred to as non-consequential load. The Commission stated that the standard should not allow an entity to plan for the loss of non-consequential load in the event of a single contingency.¹⁴ The Commission subsequently ordered NERC to submit a modification to the standard that would comply with this directive. This modification is still pending, with a due date of March 31, 2011.¹⁵

Entergy plans its system to allow for the loss of non-consequential load, and consequently would not be in compliance with the standard at such time as it is modified in accordance with the Commission's directive. Entergy believes the wording of the current standard permits non-consequential load shedding. For that reason, it objects to a mandatory requirement that it eliminate this type of load shedding. However, with the understanding that it is not required to comply with any revision to TPL-002-0 before its implementation date, Entergy has agreed with Audits recommendations in this area. These involve the submission of yearly reports identifying the company's non-consequential load and the efforts Entergy has taken to reduce the risk of this type of load loss, and the submission of a schedule for the reduction and eventual elimination of non-consequential load shedding for single contingencies. Audits concurs that such elimination need not precede the implementation date of a revised TPL-002-0.

2. *Evaluation of Protection System for Single Contingencies*

In its planning assessments, Entergy takes into account the existing and planned primary protection that would be activated in response to a single contingency event. However, it does not currently perform studies that take into account backup or redundant protection systems that may need to be activated if the primary protection fails (for example, if it is disabled by the event itself).

NERC filed a petition with the Commission requesting approval of its interpretation of Requirement R1.3.10, which is part of the reliability standard (TPL-002-0) pertaining to this issue. The Commission issued a Notice of

¹³ Order No. 693, FERC Stats. & Regs. ¶ 31,242 (2006).

¹⁴ *Id.* at P 1794.

¹⁵ *North American Electric Reliability Corp.*, 131 FERC ¶ 61,231 (2010).

Proposed Rulemaking,¹⁶ in which it proposed to reject NERC's interpretation on a prospective basis and instead interpret the requirement as specifying that simulations accounting for existing and planned protection systems include backup or redundant systems. A number of comments and protests have been filed in the NOPR docket. On March 20, 2009, NERC issued an industry advisory on single points of failure on protection systems. The advisory stated that such single points of failure should be identified in routine system evaluations, in order to prevent single contingencies from evolving into more severe or even extreme events.

Entergy's planning practices are inconsistent with the Commission's interpretation of R1.3.10. However, the company contends that they are consistent with NERC's interpretation, and further contends that the March 20 advisory did not address interpretation of the requirement. Entergy objects to adopting the Commission's interpretation unless and until that interpretation is incorporated in a revised R1.3.10. It also objects to being compelled to comply with the March 20 advisory, if such compulsion would in effect turn an advisory into a mandatory requirement.

Audits recommends that Entergy follow the NERC recommendation in the March 20 advisory. Entergy agrees with this recommendation to the extent it does not make the advisory mandatory on the company, a clarification with which Audits concurs.

3. NERC Reliability Alerts and Advisories

Concerning NERC reliability alerts and advisories, Audits recommended that (i) Entergy enhance its policies and procedures to ensure that all NERC Alerts are provided to the appropriate technical personnel, and Entergy's technical experts produce a written evaluation of each Alert; and (ii) Entergy complete a written evaluation of three specified advisories issued by NERC.

Entergy agrees with these recommendations, although it contends it has already undertaken efforts in this regard. Audits acknowledges that some efforts have been made, but finds that the more detailed analyses that would be needed have yet to be performed. On at least two occasions following issuance of the draft audit report, Audits offered to accept additional evidence from Entergy on

¹⁶ *Interpretation of Transmission Planning Reliability Standard*, Notice of Proposed Rulemaking, 75 Fed. Reg. 14,386 (Mar. 25, 2010), 130 FERC ¶ 61,208 (2010).

these issues. However, none was provided, from which circumstance Audits concluded that these more detailed analyses had not been made.

E. QF Puts

The large amount of unscheduled injections of qualifying facility power (QF puts) on Entergy's system affects transmission access, and the treatment of QF puts in the WPP process also significantly affects the selection of alternative bidders. Audits recommended that Entergy and the ICT explore ways to enhance the forecasting of QF puts and incorporate that into the WPP process. It also recommended that Entergy and ICT examine cost-effective transmission expansion planning to better integrate QF puts. Entergy agrees with these recommendations (the latter with a clarification that it not be interpreted so as to conflict with the existing Commission-approved transmission planning process). However, the company questioned whether the issue of QF puts should have been included in the audit. It also raised objections to certain of Audits' findings.

Entergy contends that the issue should not have been included in the audit because Audits' recommendations would require changes to Entergy's OATT or are otherwise policy issues unconnected to compliance. As noted above, audits are not confined to compliance issues, and frequently include recommendations designed to enhance a company's performance in audited areas. And that is the case here. Entergy's discussion of the issue confirms that QF puts affect compliance with OATT requirements and impact WPP modeling, and are thus legitimate areas of concern to Audits. In any event, and notwithstanding its reservations, Entergy has agreed to the recommendations.

Entergy accuses Audits of not understanding the implications of avoided cost pricing in the context of QFs, stating that if a utility purchases energy put by a QF, it must pay its avoided cost. But Audits did not contend otherwise, as a reading of the pertinent section of the final Audit Report demonstrates. Audits was addressing a larger issue, which is that injection of large volumes of QF power requires Entergy to operate its system to both allow this power to be produced and also to provide reliable power to its loads. Although Entergy quibbles with Audits' use of the term "least-cost," it does not take issue with Audits' observation that combining these two requirements, while complying with all relevant regulations, is a complex issue that bears examination. Indeed, Entergy acknowledges that it has taken steps along these lines already, by reforming the manner in which QF puts are modeled in the WPP.

Entergy also suggests that "to the extent Audits is suggesting that Entergy should go beyond the requirements of Order No. 890," Entergy does not agree that its customers should pay for such costs. Of course, Audits never suggested going

beyond the planning process requirements of Order No. 890.¹⁷ It is entirely possible to achieve the benefits cited by Audits by working within the Commission-approved process, and that is what Audits contemplates.

IV. Conclusion

Audits is encouraged by the agreement which has been achieved with Entergy as to the overwhelming majority of its recommendations. It looks forward to working with the company in the implementation phase of the audit.

¹⁷ *Preventing Undue Discrimination and Preference in Transmission Service*, Order No. 890, 72 FR 12,266 (March 15, 2007), FERC Stats. & Regs. ¶ 31,241 (2007), *order on reh'g*, Order No. 890-A, 73 FR 2984 (Jan. 16, 2008), FERC Stats. & Regs. ¶ 31,261 (2007), *order on reh'g*, Order No. 890-B, 123 FERC ¶ 61,299, 73 FR 39092 (2008); *order on reh'g*, Order No. 890-C, 126 FERC ¶ 61,228 (2009), *order on reh'g*, Order No. 890-D, 129 FERC ¶ 61,126 (2009) (collectively, Order No. 890).