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NOTICE OF VIOLATION OF §  
INTERNATIONAL POWER §  
AMERICA, INC., HAYS ENERGY §  
LIMITED PARTNERSHIP, §  
MIDLOTHIAN ENERGY §  
LIMITED PARTNERSHIP, AND §  
ANP FUNDING I, LLC OF PURA §  
§36.151(j) AND PUC SUBST. R. §  
§25.503(f) AND (g), RELATING §  
TO FAILURE TO ADHERE TO §  
ERCOT PROTOCOLS §5.8.1.1, §  
AND 6.5.1.1(1)(e) CONCERNING §  
GOVERNOR IN SERVICE §  
REQUIREMENTS AND §  
FREQUENCY BIAS §  
REQUIREMENTS AND OF PUC §  
SUBST. R. 25.503(f)(10), §  
RELATING TO FAILURE TO §  
COMPLY WITH REQUESTS FOR §  
INFORMATION BY ERCOT §  
WITHIN THE TIME SPECIFIED §  
BY ERCOT INSTRUCTIONS §

BEFORE THE STATE OFFICE OF  
ADMINISTRATIVE HEARINGS

DIRECT TESTIMONY

OF

TINA BENNETT

ON BEHALF OF

INTERNATIONAL POWER AMERICA, INC., HAYS ENERGY LIMITED  
PARTNERSHIP, MIDLOTHIAN ENERGY LIMITED PARTNERSHIP

November 19, 2008

**INTERNATIONAL POWER AMERICA, INC., HAYS ENERGY LIMITED  
PARTNERSHIP, MIDLOTHIAN ENERGY LIMITED PARTNERSHIP**

**DIRECT TESTIMONY OF TINA BENNETT  
SOAH DOCKET NO. 473-08-1153  
PUCT DOCKET NO. 34738**

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1  
2 **I. INTRODUCTION**

3 **Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.**

4 A. My name is Tina Bennett. My work address is 62 Forest Street, Suite 102,  
5 Marlborough, Massachusetts 01752.

6 **Q. BY WHOM ARE YOU EMPLOYED AND IN WHAT CAPACITY?**

7 A. I am employed by IPA Services, Inc. (IPA Services), and have been the Vice  
8 President of Asset Management and Information Technology since March 2007.  
9 IPA Services is a subsidiary of International Power America, Inc. (IPA), and  
10 provides various services, such as asset management, accounting, information  
11 technology, human resources, regulatory and governmental affairs to affiliates of  
12 IPA, including ANP Funding I, LLC (ANP Funding), Hays Energy Limited  
13 Partnership (Hays) and Midlothian Energy Limited Partnership (Midlothian).

14 **Q. PLEASE SUMMARIZE YOUR EDUCATIONAL BACKGROUND.**

15 A. I graduated from Bentley College in 1989 with a B.S. degree in Economics and  
16 Finance and from Northeastern University in 1997 with an M.B.A.

17 **Q. PLEASE SUMMARIZE YOUR WORK EXPERIENCE AT IPA SERVICES.**

18 A. I started in May 2001 as a Director of Trading Operations. In that position, I was  
19 responsible for: developing natural gas supply and pipeline strategies to supply  
20 reliable fuel to IPA's gas-fired generation assets; developing bidding strategies;  
21 designing and implementing business process systems and tools to support trading  
22 activities in ERCOT and New England markets; and establishing a Qualified

1 Scheduling Entity (QSE) in Texas, including establishing a round-the-clock real-  
2 time trading desk; market interface, data and voice communications systems; and  
3 coordinating initial QSE qualification testing with ERCOT. From June 2003 to  
4 June 2006, I was also a Vice President of ANP Funding, which, as I will discuss  
5 below, is the QSE registered on behalf of IPA. From January 2003 to June 2006,  
6 I ran the Company's Risk Management, Regulatory Affairs and Settlements  
7 group. In that position I was responsible for developing and implementing the  
8 Risk Management and Credit group's policies and procedures and ensuring that  
9 trading was conducted in accordance with approved policies, authorities and  
10 limits; managing the regulatory affairs group responsible for developing and  
11 implementing regulatory strategies in Texas and New England markets; and  
12 managing risk reporting, settlements and confirmations personnel. In this role, I  
13 also investigated and responded to market compliance inquiries. From June 1,  
14 2006, to March 2007, I managed the Real Time Desk on an interim basis. In  
15 addition, on February 28, 2006, I also assumed responsibility for managing our  
16 Information Technology group while continuing to manage Regulatory Affairs  
17 and respond to market compliance inquiries until January 2007.

18 **Q. PLEASE DESCRIBE YOUR WORK EXPERIENCE BEFORE YOUR**  
19 **EMPLOYMENT WITH IPA SERVICES.**

20 **A.** Prior to joining IPA Services, I worked for the PG&E National Energy Group as a  
21 generation trader (1999 to 2001) responsible for hedging generation spreads in the  
22 forward market, developing day-ahead trading and bidding strategies and

1 designing and implementing business processes for the Asset Trading and  
2 Operations group. From 1998 to 1999, I was the PG&E Director of Natural Gas  
3 Supply and was responsible for optimizing long-term gas supply and  
4 transportation contracts and managing short term gas trading, daily gas scheduling  
5 and nominations and monthly reporting activities. Prior to that, I worked at  
6 Energy Vision as the Director of Supply and Risk Management (1997 to 1998)  
7 and the New England Electric System (now National Grid) in various roles,  
8 including Principal Fuel Marketer, Rate Analyst and Accounting Analyst (1989-  
9 1997).

10 **Q. PLEASE DESCRIBE IN MORE DETAIL YOUR JOB**  
11 **RESPONSIBILITIES WHEN YOU WERE IN CHARGE OF RISK**  
12 **MANAGEMENT, REGULATORY AFFAIRS AND SETTLEMENTS**  
13 **FROM 2003-2006.**

14 A. In my role as Vice President of Risk Management, I was responsible for:  
15 managing the Company's trading risk exposures to ensure that our trading  
16 exposures, or Value-at-Risk, stayed within prescribed limits; coordinating  
17 regulatory relations and compliance with respect to ERCOT, ISO-New England,  
18 Inc. and market-based rate tariff compliance; and the settlement of fuel and  
19 electricity invoices, including settlements with ERCOT. In that role, I had  
20 employees reporting to me who performed risk analyses and reporting, employees  
21 who prepared and reviewed invoices for power and fuel sales and purchases to  
22 ensure that payments were made and received in a timely manner, and employees

1 who actively participated in ERCOT and other ISO participant groups to ensure  
2 that we were aware of market rule requirements and participated in efforts to  
3 change the rules.

4 **Q. WHEN DID AMERICAN NATIONAL POWER CHANGE ITS NAME TO**  
5 **INTERNATIONAL POWER AMERICA, INC.?**

6 A. American National Power, Inc. (ANP) changed its name to International Power  
7 America, Inc., in December 2006. Nonetheless, the name of the QSE registered  
8 on behalf of ANP, and now IPA, relevant to this matter is ANP Funding I, LLC.

9 **Q. HAVE YOU TESTIFIED PREVIOUSLY?**

10 A. Yes. In a professional capacity, I have testified before the New Hampshire Public  
11 Utilities Commission in the early 1990s regarding rate filings for Granite State  
12 Electric Company, a subsidiary of New England Electric System.

13 **Q. WHAT INFORMATION HAVE YOU REVIEWED IN FORMULATING**  
14 **THE OPINIONS EXPRESSED IN YOUR TESTIMONY?**

15 A. Among other information, I have reviewed the Notices of Violation (NOV)  
16 against IPA issued on September 12, 2007; the Amended Notices of Violation  
17 issued on June 4, 2008; the Direct Testimony of Danielle Jaussaud; Staff  
18 responses to numerous IPA Companies' requests for information; numerous  
19 documents produced by the Electric Reliability Council of Texas (ERCOT) and  
20 the Texas Regional Entity (TRE); the direct testimony of the other IPA witnesses;  
21 the letter that ANP Funding sent to the TRE on July 11, 2008, requesting  
22 reconsideration of the Protocol violation issued (concerning ANP Funding's

1 frequency bias signal); the APX responses to the Staff's subpoena; the depositions  
2 of TRE witnesses Mark Henry and Larry Grimm and ERCOT witness Robert  
3 Staples; and various documents referenced in these materials. I have included  
4 some of these materials as exhibits to my testimony, and others in my  
5 workpapers.

## 6 II. PURPOSE OF TESTIMONY

### 7 Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

8 A. I am providing testimony on behalf of IPA Companies<sup>1</sup> to clarify several matters  
9 raised by the NOV and to respond to certain allegations Staff witness Danielle  
10 Jaussaud made in her testimony (Jaussaud Testimony).

### 11 Q. WHAT ISSUES DO YOU ADDRESS?

12 A. I provide testimony regarding my communications as Vice President of ANP  
13 Funding with ERCOT concerning "governor in service" requirements as they may  
14 have applied to IPA Companies, the Staff's alleged violations involving  
15 frequency bias calculation and reporting, how IPA Companies notified ERCOT  
16 that they were not providing governor response, and how IPA Companies handled  
17 their response to ERCOT's September 9, 2005, request for information. I will  
18 also testify as to the propriety of Ms. Jaussaud's proposed penalties for those  
19 alleged violations.

### 20 Q. WHICH PRELIMINARY ORDER QUESTIONS DO YOU ADDRESS?

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<sup>1</sup> IPA Companies include IPA, ANP Funding, Hays Energy Limited Partnership (Hays) and Midlothian Energy Limited Partnership (Midlothian). When discussing all Respondents generally I will refer to them as IPA Companies.



1 A. I address the following Preliminary Order questions:

2 1. Did defendants fail to adhere to ERCOT Protocol § 5.8.1.2?

3 A. If the answer to the above question is yes, at what specific time(s)  
4 and on what specific day(s) did the violation(s) occur?

5 4. Did defendants fail to adhere to ERCOT Protocol § 6.5.1.1(1)(e)?

6 A. If the answer to the above question is yes, at what specific time(s)  
7 and on what specific day(s) did the violation(s) occur?

8 5. Did defendants fail to adhere to ERCOT Operating Guide § 2.2.5?

9 A. If the answer to the above question is yes, at what specific time(s)  
10 and on what specific day(s) did the violation(s) occur?

11 6. Did defendants fail to comply with, P.U.C. SUBST. R. 25.503(f)(10),  
12 regarding ERCOT information requests?

13 7. What amount of administrative penalty, if any, should be assessed against  
14 the defendants?  
15  
16

### III. SUMMARY

17 Q. PLEASE SUMMARIZE YOUR TESTIMONY.

18 A. I outline the communications between ANP Funding, on behalf of IPA  
19 Companies, and ERCOT concerning the applicability and, later, the  
20 implementation of “governor in service” provisions of the ERCOT Protocols and  
21 Operating Guides. Mr. Novelli references my discussion in his testimony about  
22 Staff’s allegations involving ERCOT’s “governor in service” provisions. I further  
23 testify to the following overall conclusions:

- 24 • IPA Companies did not provide an inaccurate or invalid frequency bias signal  
25 to ERCOT. APX, Inc., provided a static zero frequency bias signal on ANP  
26 Funding’s behalf until IPA Companies began to enable their generating units

1 to operate in frequency sensitive mode in Spring 2006. The zero frequency  
2 bias signal was accurate before then because it indicated that the units in IPA  
3 Companies' generation portfolio were not able to provide any governor  
4 response. In addition, I note that the Staff has proposed a fine based upon 723  
5 days of violation but has only provided evidence which Staff believes  
6 supports 17 days of violation, meaning that Staff provided no evidence of any  
7 sort with respect to 706 days of alleged violation. In addition, the data  
8 provided by the Staff to support the 17 instances in which Staff alleges IPA  
9 Companies provided an inaccurate frequency bias signal does not support the  
10 Staff's contention and has been misinterpreted, meaning that the claim as to  
11 the 17 days of alleged violation should be rejected. Finally, the  
12 recommendation of \$1,000 per day in penalties cannot be adopted because  
13 Ms. Jaussaud has not shown it is consistent with the statutory penalty factors,  
14 and IPA Companies have provided mitigating factors that would support a  
15 reduced or no penalty, were there to be a determination of liability.

- 16 • IPA Companies complied with requirements to notify ERCOT about governor  
17 response to the extent they had any applicability, and in any case, provided  
18 sufficient notice through APX by consistently transmitting a zero frequency  
19 bias signal to ERCOT, which told ERCOT that IPA Companies' generating  
20 units could not provide governor response. Because ERCOT was aware that  
21 IPA Companies' units had a zero frequency bias, meaning they could not  
22 respond to changes in frequency, ERCOT did not rely upon IPA Companies to

1 provide this service, and there was no harm from any failure to provide more  
2 formal notice. Also, since this claim in essence repeats the claims based upon  
3 not complying with the governor in service obligation, no additional penalty is  
4 warranted, especially in light of the magnitude of Staff's proposed penalty  
5 amount for that alleged violation. Finally, to the extent that a separate penalty  
6 is warranted, the proposed penalty amount of \$639,000 is excessive and there  
7 is no evidence or testimony explaining why the proposed penalty amount is  
8 consistent with the statutory penalty factors, while IPA Companies have  
9 provided testimony on mitigating factors that would support a reduced or no  
10 penalty.

- 11 • Although IPA Companies may not have responded to ERCOT within the time  
12 frame specified in the September 9, 2005, e-mail, the proposed penalty for the  
13 failure to respond to ERCOT's request for information is disproportionate and  
14 inconsistent with the statutory penalty factors. The Staff's analysis is limited  
15 to simple conclusory statements and does not directly address the six statutory  
16 penalty factors. As a result, the proposed penalty should be significantly  
17 reduced or eliminated because: any failure to timely respond to any ERCOT  
18 request for information was inadvertent and was an isolated incident; IPA  
19 Companies were preparing to respond to ERCOT even prior to the delivery of  
20 ERCOT's January 24, 2006, certified letter; IPA Companies have operated in  
21 the ERCOT market for over seven years and have not been cited for any  
22 violations prior to the case at issue; IPA Companies have taken steps to ensure

their future responses will be timely; IPA Companies were not the only market participants sent such a request that failed to provide a timely response; IPA Companies' delayed response did not appear to impact the reliable operation of the system; and ERCOT did not recommend taking any punitive action as a result of the failure to respond and, as such, the delay was not viewed by ERCOT as significant under the circumstances.

## IV. DISCUSSION

### A. Communications with ERCOT on Governor In Service Requirements

## 1. Correspondence with ERCOT Officials

10 Q. WHEN DID IPA COMPANIES RECEIVE NOTICE OF A CHANGE IN  
11 THE PROTOCOLS CONCERNING THE OBLIGATION TO OPERATE  
12 WITH A "GOVERNOR IN SERVICE"?

13 A. On May 3, 2004, Mr. Henry of ERCOT Compliance sent a blast e-mail addressed  
14 to all QSEs and generation resources notifying them of: (i) frequency response  
15 problems in ERCOT; (ii) an upcoming protocols revision request (PRR) that, if  
16 adopted, would require all generation resources to operate with their governors in  
17 service and free to respond when on line; and (iii) that “governor reserve” was not  
18 required. The revision he discussed was PRR 468, entitled “Frequency Response  
19 Requirements and Compliance Monitoring.” I received this e-mail and  
20 subsequent e-mails and correspondence from ERCOT discussed below in my  
21 capacity as Vice President of ANP Funding.

22 Q. WAS PRR 468 ADOPTED?

1 A. Yes. This new Protocol section became effective on June 1, 2004. However, it  
2 was adopted with different provisions than the version described in Mr. Henry's  
3 e-mail. Specifically, the adopted version deleted certain proposed enforcement  
4 and QSE performance measures.<sup>2</sup>

5 **Q. IS THERE ANYTHING PARTICULARLY NOTEWORTHY ABOUT MR.**  
6 **HENRY'S E-MAIL?**

7 A. This e-mail references a discussion at the February 10, 2004, ERCOT Reliability  
8 and Operations Subcommittee (ROS)<sup>3</sup> meeting. In this discussion, Mr. Niemeyer,  
9 then head of the PDCWG,<sup>4</sup> stated that the "problem" was that generators were  
10 recalling their primary frequency response minutes after frequency events.<sup>5</sup> Mr.  
11 Staples confirmed this in his deposition, stating that in approximately 75 percent  
12 of all frequency events generators recall their initially deployed governor  
13 response.<sup>6</sup> Mr. Niemeyer asserted that this was problematic because a second  
14 frequency disturbance might occur while generators are supposed to have their  
15 resources responding to frequency disturbances.

16 **Q. WHAT WAS IPA COMPANIES' REACTION TO PROTOCOL REVISION**  
17 **REQUEST 468?**

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<sup>2</sup> I have attached the "as proposed" and final versions of PRR 468 as Exhibit TB-3.

<sup>3</sup> The Reliability and Operations Subcommittee reports to the Technical Advisory Committee (TAC) and develops, reviews, and maintains operating guides and planning criteria.

<sup>4</sup> The Performance, Disturbance, Compliance Working Group (PDCWG), reporting to ROS, is responsible for reviewing, analyzing and evaluating the frequency control performance of the ERCOT control area to ensure conformance to the engineering and operating criteria of ERCOT, the North American Electric Reliability Corporation (NERC) and other appropriate entities.

<sup>5</sup> Exhibit TB-3 (Minutes of February 10, 2004 ROS Meeting).

<sup>6</sup> Deposition of Robert Staples at 68 (attached as an exhibit to Mr. Novelli's testimony).

1 A. In the normal course of action, when Protocol Revision Requests were adopted I  
2 consulted with IPA Services employee Bob Helton. Mr. Helton was then  
3 Chairman of the Wholesale Market Subcommittee (WMS)<sup>7</sup> of the ERCOT  
4 Technical Advisory Committee (TAC).<sup>8</sup> Mr. Helton indicated this new Protocol  
5 would not apply to IPA Companies due to the different generation technology  
6 utilized at the Midlothian and Hays Facilities, and he said he would seek to  
7 resolve any confusion concerning the issue through the ERCOT stakeholder  
8 deliberative process at future WMS and ROS meetings.

9 **Q. WHEN DID YOU NEXT HEAR FROM ERCOT ABOUT GOVERNOR IN**  
10 **SERVICE AND FREQUENCY RESPONSE COMPLIANCE?**

11 A. A system frequency disturbance event occurred on August 18, 2004, prompting  
12 the ERCOT Compliance division to conduct an investigation into its causes.<sup>9</sup>  
13 ERCOT must report to NERC about certain reportable events. A “disturbance  
14 event,” according to Mr. Henry’s letter to ANP Funding of November 11, 2004,  
15 asking for information about this event, is a single contingency loss of 1,000 to  
16 1,250MW of generation.<sup>10</sup> In this instance, his letter stated that ERCOT  
17 experienced a loss of 1,115MW of generation from two separate plants, which

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<sup>7</sup> WMS reporting to the TAC, reviews issues related to the operation of the wholesale market in the ERCOT region and makes recommendations for improvement.

<sup>8</sup> TAC is comprised of stakeholders and makes recommendations to the Board of Directors regarding ERCOT policies and procedures and is responsible for prioritizing projects through the protocol revision request, system change requests, and guide revision processes.

<sup>9</sup> The ERCOT Compliance division later became the TRE, a “regional entity” under the 2005 Energy Policy Act. Mr. Henry discusses this in his deposition.

<sup>10</sup> Exh. TB-2 at 2-3.

1 resulted in a significant frequency drop that was not remedied for 17 minutes.  
2 Mr. Henry's letter was addressed to ANP Funding because it was identified as a  
3 potential contributor to ERCOT's "failure to meet NERC Policy 1B  
4 requirements." This requirement establishes standards for a control area's  
5 recovery from a sudden loss of generation supply.<sup>11</sup> Mr. Henry's letter asked  
6 ANP Funding to provide written comments about its performance and the  
7 performance of the generation resources in its portfolio. Interestingly, Mr.  
8 Henry's letter did not reference PRR 468 or the ERCOT Protocols.

9 **Q. WHY DID MR. HENRY DIRECT THIS AND SUBSEQUENT**  
10 **CORRESPONDENCE TO ANP FUNDING?**

11 A. ANP Funding, as IPA's QSE, was the appropriate entity to receive such  
12 communication from Mr. Henry, as the PDCWG reviews the "governor in  
13 service" and "frequency bias" performance on a QSE-level portfolio basis.<sup>12</sup>

14 **Q. HOW DID ANP FUNDING RESPOND?**

15 A. ANP Funding timely responded to Mr. Henry's letter, providing details about its  
16 generation amounts, ramping actions, and schedule control error (SCE) during the  
17 disturbance event.<sup>13</sup>

18 **Q. DID ERCOT RESPOND TO ANP FUNDING'S LETTER?**

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<sup>11</sup> I have attached a copy of NERC Policy 1B as Exhibit TB-4. I note that this standard applies only to system control operators, not individual generators.

<sup>12</sup> Deposition of Mark Henry (September 23, 2008) at 72(attached as an exhibit to Mr. Novelli's testimony).

<sup>13</sup> Exh. TB-2 at 4.

1 A. On February 7, 2005, Mr. Henry submitted follow-up questions to ANP  
2 Funding.<sup>14</sup> Primarily, he asked if it had developed any new information about its  
3 SCE during the event, stating that IPA Companies' contribution to the event was  
4 "marginal" but still requesting additional information about IPA Companies' and  
5 ANP Funding's actions "to expand its knowledge of QSE operations during major  
6 frequency events."

7 **Q. DID ANP FUNDING RESPOND?**

8 A. Yes. ANP Funding indicated that it had not uncovered any additional information  
9 but would continue to review its data.<sup>15</sup>

10 **Q. WHAT WAS THE NEXT COMMUNICATION FROM ERCOT**  
11 **CONCERNING SYSTEM FREQUENCY EVENTS?**

12 A. On July 19, 2005, an ERCOT system high frequency event occurred. This  
13 involved a situation in which the system frequency exceeded its normal 60Hz by  
14 approximately 0.24Hz. Mr. Staples of ERCOT Compliance noted in a September  
15 9, 2005, e-mail to me that ANP Funding's generation resources may not have  
16 provided adequate governor action, and he requested an explanation.<sup>16</sup> I discuss  
17 this particular e-mail in more detail later in my testimony.

18 **Q. DID IPA COMPANIES CONDUCT AN INTERNAL EVALUATION TO**  
19 **DETERMINE WHETHER THEY WERE IN COMPLIANCE WITH**  
20 **ERCOT REQUIREMENTS DURING THIS EVENT?**

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<sup>14</sup> Id. at 4-5.

<sup>15</sup> Id. at 6.

<sup>16</sup> Id. at 7.



1 A. Yes. Senior IPA Companies' management, as well as the senior Texas plant  
2 personnel, engaged in another round of discussions about the applicability of  
3 ERCOT governor in service standards before responding to Mr. Henry's letter.

4 **Q. DID IPA COMPANIES SEEK OUTSIDE GUIDANCE ON THIS ISSUE?**

5 A. Yes. At the October 6, 2005, TAC meeting, Mr. Helton asked Rick Keetch, head  
6 of the ROS, if the only circumstance in which a generation entity was required to  
7 provide frequency response is when it supplies Responsive Reserve Service  
8 (RRS). Mr. Keetch answered yes.<sup>17</sup> Mr. Keetch also added that generators must  
9 have automatic generation control (AGC) on and the "automatic speed governor"  
10 must be in service. Parviz Adib, former head of the Staff Wholesale Markets  
11 division, also attended the meeting. Meeting minutes documented both the  
12 exchange and Mr. Adib's attendance. Note that it was in Mr. Keetch's committee  
13 that Mr. Niemeyer had, according to the February 10, 2004, ROS meeting  
14 minutes, previously stated that "all generators" must have their governor in  
15 service, whether or not providing ancillary services.

16 **Q. HOW DID ANP FUNDING RESPOND TO ERCOT'S REQUEST?**

17 A. On January 31, 2006, I formally responded on behalf of ANP Funding to  
18 ERCOT's request for information in writing.<sup>18</sup> My letter stated: (1) the ERCOT  
19 frequency response requirements do not apply to the GT-24B units because this  
20 generating technology does not use governor valves to control frequency (and

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<sup>17</sup> Minutes from the TAC Meeting are attached as part of Exh. TB-3.

<sup>18</sup> Exh. TB-2 at 8-9.

1 ERCOT recognized this during testing); (2) IPA Companies' units would have to  
2 be modified to do respond to changes in system frequency; and (3) if they were  
3 modified in this way, then excessive wear and tear on the equipment would result.  
4 The letter added that IPA Companies did not believe they had an obligation to  
5 provide frequency response, as a consequence of ERCOT not including  
6 combustion turbines in its Operating Guide testing provisions, and so they had not  
7 enabled the frequency regulation control on these units.

8 **Q. DID IPA COMPANIES NONETHELESS AGREE TO PROVIDE**  
9 **FREQUENCY RESPONSE IF ERCOT DESIRED?**

10 A. Yes. The letter concluded by offering to work with ERCOT staff, in recognition  
11 of the importance of frequency response to the system, to determine if there is a  
12 reasonable method of operating the GT-24B units that would provide ERCOT  
13 with frequency response. It added that IPA Companies' engineers were  
14 evaluating the units and wanted to establish a plan and timeframe to work with  
15 ERCOT staff on the frequency response issue.

16 **Q. DID ERCOT RESPOND TO THIS OFFER?**

17 A. No, it did not.

18 **Q. WERE THERE FURTHER ERCOT REQUESTS ABOUT IPA**  
19 **COMPANIES' GOVERNOR IN SERVICE?**

20 A. Yes. On March 13, 2006, ERCOT sent a follow-up request concerning ANP  
21 Funding's January 31, 2006, response.<sup>19</sup> This letter asked three new questions

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<sup>19</sup> Exh. TB-2 at 10-11.

1 and asserted that the governor in service obligation applied to IPA Companies,  
2 notwithstanding their generating technology. It also recommended that IPA  
3 Companies have representatives take part in PDCWG proceedings.

4 **Q. DID IPA COMPANIES DESIGNATE A REPRESENTATIVE TO**  
5 **PARTICIPATE IN PDCWG PROCEEDINGS AS RECOMMENDED?**

6 A. Yes, IPA Companies appointed two employees to take part in PDCWG activities.  
7 IPA Companies' representatives now regularly attend and participate in PDCWG  
8 meetings, review QSE performance data, and have even authored the frequency  
9 response testing procedures relative to combined cycle technology in that  
10 capacity.

11 **Q. WAS IT UNUSUAL THAT ANP FUNDING DID NOT HAVE**  
12 **REPRESENTATIVES ATTENDING PDCWG MEETINGS ON A**  
13 **REGULAR BASIS AT THAT TIME?**

14 A. No. As Mr. Henry testified, many QSEs did not send representatives to PDCWG  
15 meetings during that time.<sup>20</sup>

16 **Q. WHAT ADDITIONAL COMMUNICATIONS DID ERCOT SUBMIT TO**  
17 **ANP FUNDING?**

18 A. On March 22, 2006, ERCOT e-mailed requests for information about ANP  
19 Funding's lack of governor response during several January 2006 frequency  
20 events.<sup>21</sup> This e-mail requested that ANP Funding explain what prevented it from

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<sup>20</sup> Henry Deposition (September 23, 2008) at 53.

<sup>21</sup> Exh. TB-2 at 12.

1       having adequate governor response during the events and requested that ANP  
2       Funding submit a mitigation plan.

3       **Q.   HOW DID ANP FUNDING RESPOND TO THESE REQUESTS?**

4       A.   ANP Funding responded to both the March 13<sup>th</sup> and March 22<sup>nd</sup> ERCOT requests  
5       on April 7, 2006, in furtherance of ANP Funding's January 31, 2006, letter, which  
6       indicated that IPA Companies already intended to begin providing frequency  
7       response based on its stated importance to ERCOT.<sup>22</sup> My response for ANP  
8       Funding stated that most of the employees who were involved in the construction  
9       and commissioning of IPA Companies' units were now working on other projects,  
10      but I cited earlier correspondence on the difference between standard ERCOT  
11      Operating Guide test methods and IPA Companies' technology. The letter stated  
12      that based on this correspondence "it was incorrectly assumed" that the governor  
13      response requirements did not apply to these units. The letter said that IPA  
14      Companies' management established an internal working group to "bring all our  
15      units into full compliance" with ERCOT's request and determined a draft plan.  
16      The key elements of the plan were summarized, and the letter provided an  
17      estimate that it would take four months to carry out the plan. The letter stated that  
18      Midlothian had already put one unit into frequency response mode on a test basis,  
19      and, further, that ANP Funding had discussed the frequency bias issue with APX  
20      and should be providing a real-time frequency bias signal by mid-April 2006, in  
21      conjunction with IPA Companies' mitigation plan timeline. The letter concluded

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<sup>22</sup> Exh. TB-2 at 14-15.

1 by offering to discuss the details of the plan with ERCOT. Mr. Novelli discusses  
2 the implementation of the mitigation plan in his testimony.

3 **Q. HOW DID ERCOT REACT TO THE ANP FUNDING RESPONSE?**

4 A. Mr. Henry wrote ANP Funding on May 17, 2006.<sup>23</sup> He entitled the letter  
5 "ERCOT notice of non-compliance with frequency bias protocols." He requested  
6 that "ANP complete all of the items listed in its mitigation plan [of April 7]...and  
7 report to ERCOT when the work is completed." He stated that a copy of the  
8 notice will be sent to Staff, but not a referral for enforcement. The letter indicated  
9 the governor in service requirement did apply to IPA Companies, but it did not  
10 assert that IPA Companies violated any Protocols or Operating Guides for failure  
11 to provide "governor response."

12 **Q. DID IPA COMPANIES COMPLETE THE COMPLIANCE PLAN THAT**  
13 **ERCOT APPROVED?**

14 A. Yes. ANP Funding advised ERCOT Compliance by an e-mail to Mr. Henry that,  
15 by May 31, 2006, eight of the ten generating units were operating in frequency  
16 response mode. By July 13, 2006, all the units were operating in frequency  
17 response mode. Mr. Henry testified that IPA Companies completed the  
18 mitigation plan.<sup>24</sup>

19 2. The ERCOT Violation Notice  
20

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<sup>23</sup> Exh. TB-2 at 16-17.

<sup>24</sup> Henry Deposition (September 23, 2008) at 78-79.

1   **Q.   MS. JAUSSAUD HAS TESTIFIED THAT HER CONCLUSION THAT**  
2       **ANP FUNDING REPORTED INVALID FREQUENCY BIAS VALUE IS**  
3       **SUPPORTED BY THE FACT THAT ERCOT CITED ANP FUNDING FOR**  
4       **A VIOLATION OF PROTOCOL §6.5.1.1.(1)(E), ON THE BASIS THAT**  
5       **ANP FUNDING PROVIDED POSITIVE GOVERNOR RESPONSE**  
6       **WHILE REPORTING A FREQUENCY BIAS OF ZERO. DID ERCOT**  
7       **COMPLIANCE ISSUE SUCH A VIOLATION?**

8   **A.**   After obtaining clarification from TRE officials, this now appears to be the case.  
9       ANP Funding had for some time, however, believed that the violation involved a  
10      failure to provide a frequency bias signal altogether.

11   **Q.   WHY DID ANP FUNDING NOT PROVIDE INFORMATION TO ERCOT**  
12      **COMPLIANCE TO EXPLAIN THE UNIT OUTPUT CHANGES**  
13      **FORMING THE BASIS OF THE NOTICE OF VIOLATION?**

14   **A.**   As stated above, ANP Funding believed at the time (wrongly, as it later  
15      discovered) that it had not been transmitting any bias signal to ERCOT at all. As  
16      a result, ANP Funding did not provide ERCOT Compliance any explanation of “a  
17      lack of frequency bias” as Mr. Henry requested in his May 17, 2006,  
18      correspondence because we believed, wrongly, that ANP Funding had not  
19      submitted a frequency bias signal to ERCOT. Also, ANP Funding had told  
20      ERCOT previously that its units were not providing governor response, so ANP  
21      Funding believed that there was no new information to report.

1   **Q.   DID IPA COMPANIES BELIEVE THE INITIAL ERCOT VIOLATION**  
2       **NOTICE WAS FOR PROVIDING AN “INVALID” FREQUENCY BIAS**  
3       **SIGNAL, AS OPPOSED TO FAILING TO PROVIDE A SIGNAL**  
4       **ALTOGETHER?**

5   A.   No. IPA Companies were well aware that their generating units were physically  
6       incapable of providing governor response, and had so informed ERCOT  
7       Compliance in my January 31, 2006, letter. IPA Companies had no idea that  
8       ERCOT Compliance actually believed IPA Companies were somehow providing  
9       governor response at that time, nor should IPA Companies reasonably have  
10      known that ERCOT was advancing this claim.  
11      ERCOT Compliance’s investigation up to that point had been focused on whether  
12      IPA Companies were providing frequency response. Indeed, in the follow up  
13      letter dated March 13, 2006,<sup>25</sup> the focus of ERCOT’s questions concerned: when  
14      frequency response capability was turned off; whether ERCOT had been notified  
15      that frequency response had been turned off; and whether IPA Companies had any  
16      documentation showing that ERCOT had agreed that the frequency response  
17      obligation did not apply to IPA Companies’ technology. It did not raise the issue  
18      of providing some response which was inconsistent with its reported frequency  
19      bias.  
20      The e-mail dated March 22, 2006, from Robert Staples to myself did indicate that  
21      IPA Companies’ governor response to Measurable Events in January 2006 was

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<sup>25</sup> Exhibit TB-2 at 10-11.

1 inadequate. However, because IPA Companies did not have their Frequency  
2 Response capability active, IPA Companies believed that the issue was not that  
3 ERCOT believed that response was being provided and was inadequate, but that it  
4 was not being provided at all. Mr. Staples' e-mail also directed IPA Companies  
5 to complete the mitigation plan, which included putting the frequency response  
6 capability into operation and sending a dynamic frequency bias signal.

7 Also, the PUCT Staff's letter dated April 6, 2006, seeking copies of ANP  
8 Funding's response to ERCOT, was entitled "Investigation of Possible  
9 Noncompliance with P.U.C. Subst. R. 25.203(f) Related to Frequency Regulation  
10 Control by ANP Funding I LLC" – and, thus, did not indicate that the issue was  
11 that the PUCT (or ERCOT) was investigating IPA Companies' provision of  
12 "partial response."

13 **Q. WHAT EVIDENCE EXISTS THAT THE PUCT CHANGED ITS**  
14 **INTERPRETATION OF THE ERCOT VIOLATION TWO YEARS AFTER**  
15 **THE ERCOT VIOLATION WAS ISSUED?**

16 **A.** The Staff alleged on September 12, 2007, in the initial NOV's, that from the time  
17 IPA Companies began operating their units until April 16, 2006, IPA Companies  
18 failed to provide a frequency bias signal to ERCOT.<sup>26</sup> It made no mention of an  
19 invalid frequency bias signal of zero. When Staff made this allegation, it had  
20 been investigating this matter for over a year and had reviewed all the  
21 correspondence Ms. Jaussaud attached to her testimony to support her new

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<sup>26</sup> Notice of Violation, September 12, 2007, at 4; Memorandum of D. Jaussaud at 4.



1       assertion that the ERCOT violation notice was for providing a frequency bias  
2       signal, but one that was invalid.

3       **Q.   WHAT WAS ANP FUNDING'S UNDERSTANDING OF ERCOT'S JUNE**  
4       **2, 2006, NOTICE OF VIOLATION?**

5       A.   ANP Funding believed this resulted from ERCOT's investigation of system  
6       disturbances in the period between Summer 2005 and the first quarter of 2006.  
7       As part of IPA Companies ongoing provision of information to ERCOT  
8       Compliance during the latter's investigation of this event, ANP Funding notified  
9       ERCOT that not only would IPA Companies' generating units begin operating in  
10      frequency sensitive mode but ANP Funding would also begin to include a  
11      dynamic frequency bias component in its SCE signal.<sup>27</sup> Mr. Henry's May 17,  
12      2006, letter, sent on behalf of ERCOT Compliance, stated that, due to information  
13      uncovered from ERCOT Compliance's correspondence with ANP Funding, it  
14      would be cited for "this lack of frequency bias" unless ANP Funding provided  
15      additional information to the contrary within 10 days. IPA Companies assumed  
16      that, in light of this statement, and APX's representations at the time that it had  
17      not been providing **any frequency bias signal at all**,<sup>28</sup> the proposed ERCOT  
18      Compliance violation was based on not providing any frequency bias signal at all.  
19      IPA Companies, therefore, had no additional information to provide Mr. Henry,  
20      and ANP Funding responded that it has begun adjusting its frequency bias signal

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<sup>27</sup> Exhibit TB-2 at 14-15.

<sup>28</sup> APX representatives had previously informed IPA that APX had not been transmitting any frequency bias signal at all to ERCOT. Testimony of Danielle Jaussaud at 59 at fn. 79.

1 consistent with its mitigation plan. In addition, because the May 17, 2006, letter  
2 from Mark Henry encouraged IPA Companies to continue implementing the  
3 mitigation plan, IPA Companies assumed that fulfilling the plan would resolve the  
4 matter. As Mr. Novelli testifies, the plan was timely completed.

5 **Q. WHAT OTHER EVIDENCE SUGGESTED THAT IPA COMPANIES'**  
6 **INITIAL INTERPRETATION OF THE ERCOT VIOLATION WAS**  
7 **REASONABLE?**

8 A. Other conflicting and contrary statements by ERCOT Compliance personnel  
9 further demonstrate that IPA Companies reasonably assumed that the violation  
10 was for not providing any bias signal at all. Mr. Henry's May 17, 2006, letter was  
11 entitled "Notice of Non-Compliance with ERCOT Protocols for Lack of  
12 Frequency Bias," and it asked ANP Funding to provide information why "this  
13 lack of frequency bias was not a violation."  
14 Information produced in discovery further confirms that IPA Companies'  
15 understanding was reasonable, including, but not limited to, the following:

- 16 • Ms. Jaussaud spoke with Mr. Henry on April 18, 2006, and wrote in a  
17 summary of the conversation that Mr. Henry told her that "ANP indicated  
18 that it had not been providing a bias signal to ERCOT."<sup>29</sup>  
19
- 20 • In an e-mail exchange between the same parties on May 1, 2006, Mr.  
21 Henry wrote that "ANP is providing a bias, which appears to be a fixed  
22 value that appears once frequency crosses a deadband. It began to show  
23 up in our PI records on April 27<sup>th</sup>."<sup>30</sup>  
24

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<sup>29</sup> Exhibit TB-5 at 4-5 (Staff Supplemental Response to IPA Companies RFI 1-3 at bates 924-925 (D. Jaussaud memo of April 18, 2006)).

<sup>30</sup> Exhibit TB-5 at 6 (Staff Response to IPA RFI Companies 1-3 (no bates page)(M. Henry e-mail to D. Jaussaud, May 1, 2006)).

- 1           •     On February 27, 2007, after Ms. Jaussaud sent Mr. Henry an e-mail  
2                 cautioning him that another QSE is not providing a frequency bias signal  
3                 (see below), Mr. Henry responded that it is unacceptable for a responsive  
4                 reserve service provider “not to show a bias” and it will be considered a  
5                 violation of the “Protocols telemetry requirements, just as with...and  
6                 ANP.”<sup>31</sup>  
7  
8           •     In a February 12, 2008, memo recounting a conversation Ms. Jaussaud had  
9                 on February 5, 2008, with Larry Grimm, CEO of the TRE, she wrote that  
10                “[w]hen I enquired why they cited ANP for failure to provide a frequency  
11                bias signal, they responded that in that case, the performance metrics  
12                provided in the Protocols to detect the presence of a frequency bias signal  
13                was sufficient for them to carry out enforcement.”<sup>32</sup>  
14

15           These statements show that IPA Companies interpreted the ERCOT notice of  
16           violation reasonably, and in the same manner Staff did, when they concluded that  
17           the alleged violation was for failing to provide a frequency bias signal of any  
18           kind, rather than a claim that ANP Funding sent a “zero” signal that was, in fact,  
19           inaccurate because IPA Companies were providing governor response.

20   **Q.     WHEN DID IPA COMPANIES FIRST LEARN THAT ERCOT OR THE**  
21           **PUCT STAFF MIGHT BELIEVE THAT THE ERCOT COMPLIANCE**  
22           **VIOLATION WAS FOR PROVIDING AN INACCURATE SIGNAL,**  
23           **RATHER THAN FOR PROVIDING NO SIGNAL AT ALL?**

24   **A.     IPA Companies did not learn of this fact until the Staff filed its Amended NOV's**  
25           **and supporting testimony on June 4, 2008, more than two years after the Staff**  
26           **notified IPA Companies that it was beginning its investigation.**

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<sup>31</sup> Exh. TB-6 at 2 (M. Henry e-mail to D. Jaussaud, February 27, 2007).

<sup>32</sup> Exhibit TB-5 at 7 (Staff Supplemental Response to IPA Companies RFI 1-3 (no bates page) (D. Jaussaud memo to P. Curtis of February 12, 2008)).

1   **Q.   HAS ANP FUNDING ATTEMPTED TO HAVE TRE RECONSIDER THIS**  
2       **VIOLATION   IN   LIGHT   OF   STAFF'S   BELATED   NEW**  
3       **INTERPRETATION?**

4   A.   Yes.  On July 11, 2008, approximately a month after Ms. Jaussaud filed her  
5       testimony and Staff revised its characterization of the ERCOT violation notice,  
6       ANP Funding submitted a letter from Mr. Musselman to Mark Henry requesting  
7       that TRE reconsider the violation in light of two facts.<sup>33</sup>  One was that, during this  
8       case, APX provided different information to the Commission Staff concerning its  
9       provision of a frequency bias signal on ANP Funding's behalf than the  
10      information provided to ANP Funding in 2006.  Unlike its 2006 representations to  
11      ANP Funding, APX informed the Staff that it had, in fact, always provided  
12      ERCOT a frequency bias signal on ANP Funding's behalf, and that the signal had  
13      been a static "zero" until IPA Companies' units began operating in governor  
14      response mode.<sup>34</sup>  This meant that, to the extent the ERCOT violation was based  
15      on an alleged failure to provide any frequency bias signal, the violation was  
16      unjustified because APX later revealed that it did transmit a bias signal after all.  
17      The other fact prompting ANP Funding's reconsideration request was that Ms.  
18      Jaussaud had recently provided an alternative interpretation – the violation was,  
19      instead, based on the fact that the zero frequency bias signal was invalid because  
20      IPA Companies' units were, in fact, providing governor response.  ANP

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<sup>33</sup> This letter was attached as an exhibit to Mr. Novelli's testimony.

<sup>34</sup> Id.

1 Funding's letter notified TRE that ANP Funding had not interpreted the violation  
2 letter in that manner upon receipt in May 2006, but, if ANP Funding understood  
3 the violation the same way Ms. Jaussaud later interpreted it, ANP Funding had  
4 information, which it provided to TRE with the letter, showing that the zero bias  
5 signal was accurate because IPA Companies were not providing governor  
6 response.

7 **Q. WHAT WAS TRE'S RESPONSE TO THE LETTER?**

8 A. Mr. Henry responded that, because the matter had become the subject of  
9 litigation, TRE would not act upon ANP Funding's request for reconsideration of  
10 the original ERCOT violation.<sup>35</sup> Mr. Henry added in his testimony that TRE has  
11 no process in place to reconsider a violation notice once it has been posted.<sup>36</sup>

12 **Q. WOULD ERCOT COMPLIANCE HAVE CONSIDERED THE FACTS**  
13 **THAT MR. MUSSELMAN DESCRIBED IN HIS LETTER, AND WHICH**  
14 **MR. NOVELLI SUMMARIZED IN HIS TESTIMONY, HAD IT BEEN**  
15 **PROVIDED WITHIN THE 10 DAYS MR. HENRY AFFORDED?**

16 A. Yes. Mr. Henry testified that this information, submitted by the QSE, is exactly  
17 the sort of information the PDCWG and ERCOT Compliance would have  
18 reviewed and analyzed in more detail had it been timely provided.<sup>37</sup> He noted  
19 that these involve complex matters and PDCWG needs the QSE's input to

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<sup>35</sup> The reply was also attached as an exhibit to Mr. Novelli's testimony.

<sup>36</sup> Henry Deposition (September 23, 2008) at 204.

<sup>37</sup> Id.; Henry Deposition (September 24, 2008) at 31.

1 understand the data before them.<sup>38</sup> He further testified that not only would  
2 PDCWG have reviewed this information, but it may even have requested more  
3 information.<sup>39</sup> Finally, Mr. Henry specifically testified that PDCWG would have  
4 considered the technical explanation that Mr. Musselman provided in the letter.<sup>40</sup>

5 **Q. PLEASE DESCRIBE THE METHOD BY WHICH ERCOT AND ERCOT**  
6 **COMPLIANCE (NOW TRE) INVESTIGATE FREQUENCY BIAS**  
7 **SIGNAL ISSUES.**

8 A. Mr. Henry described this in his deposition.<sup>41</sup> He indicated that PDCWG would  
9 consider a frequency bias signal such as the one at issue in this case. The  
10 PDCWG asks TRE to issue a request to the QSE to explain the non-compliant  
11 behavior because, without the unit's operational data, TRE and the PDCWG  
12 cannot tell what a QSE's units were doing during the event in question, and, thus,  
13 they cannot determine whether a violation has occurred. TRE then sends a letter  
14 to the QSE explaining the question at issue, and asking for information from the  
15 QSE that would explain the QSE's actions. Once the QSE provides such  
16 information, PDCWG primarily, with its member engineers and ERCOT staff  
17 members, will review the QSE's data and come to a determination whether the  
18 QSE's performance was deficient. So, the process largely depends upon the  
19 PDCWG considering data and explanation that the QSE provides TRE when

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<sup>38</sup> Henry Deposition (September 23, 2008) at 204.

<sup>39</sup> Id. at 209-10.

<sup>40</sup> Id. at 215-16.

<sup>41</sup> Henry Deposition (September 23, 2008) at 27-32, 90-93, 110-113.

1 confronted with a potential Protocols violation. Mr. Novelli also discusses this in  
2 his testimony. The PDCWG meetings are also regularly attended by  
3 representatives of the TRE and the PUCT,<sup>42</sup> including Ms. Jaussaud.<sup>43</sup>

4 **Q. WAS THIS THE PROCESS THAT ERCOT COMPLIANCE FOLLOWED**  
5 **IN CONNECTION WITH THE FREQUENCY BIAS SIGNAL MATTER**  
6 **AT ISSUE IN THIS CASE?**

7 **A.** Yes. Mr. Staples testified that the PDCWG asked ERCOT Compliance to request  
8 that ANP Funding explain what appeared to be unresponsiveness to system  
9 frequency deviations.<sup>44</sup> Mr. Henry then sent his letter of May 17, 2006, which  
10 gave ANP Funding the opportunity to provide explanatory information within 10  
11 days. As I described earlier, IPA Companies misunderstood the nature of the  
12 request and therefore did not believe that there was any relevant information to  
13 provide. Had it provided the information set forth in Mr. Musselman's letter of  
14 June 11, 2008, attached to Mr. Novelli's testimony, Mr. Henry testified that  
15 PDCWG would have considered that data before reaching a conclusion as to  
16 whether a violation had been committed.<sup>45</sup>

17 **Q. DID ERCOT COMPLIANCE CONCLUDE THAT ANP FUNDING**  
18 **SUBMITTED AN INVALID FREQUENCY BIAS SIGNAL?**

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<sup>42</sup> Henry Deposition (September 23, 2008) at 20, 93.

<sup>43</sup> Deposition of Robert Staples at 39-40.

<sup>44</sup> Id. at 44-46.

<sup>45</sup> Henry Deposition (September 23, 2008) at 204.

1 A. Lacking information to the contrary, ERCOT Compliance apparently concluded  
2 in June 2006 that ANP Funding submitted an invalid frequency bias signal. As  
3 previously discussed, this conclusion was based on an incomplete factual record.  
4 If APX had given IPA Companies correct information about the transmission of a  
5 frequency bias signal, then IPA Companies would certainly have explained to  
6 ERCOT Compliance that it was submitting a valid zero frequency bias signal, as  
7 we attempted to do in Mr. Musselman's July 11, 2008, letter. IPA Companies  
8 also would have engaged in further dialogue with ERCOT Compliance or TRE to  
9 determine if any other action was required. Mr. Henry testified that PDCWG saw  
10 data for ANP Funding's resources that looked like frequency response, it asked  
11 ANP Funding to provide an explanation to clarify the data (but did not receive it),  
12 and so ERCOT Compliance issued the violation based on the only data available  
13 to PDCWG.<sup>46</sup> ERCOT's conclusion, and the resulting violation notice, owes to  
14 the fact that ANP Funding provided no explanation of the anomalous data that the  
15 PDCWG reviewed, and is more in the nature of a default reaction rather than an  
16 affirmative finding.

17 ***B. Frequency Bias Calculation and Reporting Issues***

18 **1. Legal and Factual Background**

19 **Q. PLEASE DISCUSS THE PROTOCOLS, OPERATING GUIDES, RULES,**  
20 **AND STATUTES RELEVANT TO THIS ALLEGATION.<sup>47</sup>**

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<sup>46</sup> Henry Deposition (September 23, 2008) at 197.

<sup>47</sup> Throughout my testimony I refer to the relevant Protocols and Operating Guides provisions as they were worded during the "penalty period" (May 2004 – May 2006) rather than the current versions, except where



1 A. Staff has alleged that IPA Companies violated ERCOT Protocol § 6.5.1.1(e)(1)  
2 for failure to provide an accurate frequency bias signal. This section states:

3 *A QSE representing a Generation Entity that has Generation Resources*  
4 *connected to a TDSP shall provide the following Real Time data to*  
5 *ERCOT for each individual generating unit at a Generation Resource*  
6 *plant location ... Frequency Bias of Portfolio Generation Resources under*  
7 *QSE operation.*

8 Operating Guides §2.2.3.1 establishes the requirements for the bias settings.

9 Before April 2005, it provided:

10 *The Automatic Generation Control should have bias settings that*  
11 *approximate the measured frequency response characteristic. This bias*  
12 *setting should be changed with significant generating capability changes.*  
13 *The ERCOT Control Area Authority will check the area frequency*  
14 *response characteristic each time a disturbance causes a .175 Hz*  
15 *deviation. Information thus obtained will be used to evaluate bias*  
16 *settings.*

17 After April 2005, it provided:

18 *In the Schedule Control Error equation, QSEs shall have bias settings that*  
19 *approximate the measured frequency response characteristic of their On-*  
20 *line Resources. This bias setting should be changed when significant On-*  
21 *line generating capability changes or when their Resources' frequency*  
22 *response characteristics change. The ERCOT Control Area Authority will*  
23 *check the area frequency response characteristic each time a disturbance*  
24 *qualifies as a measurable event per Section 5.8.2 of the Protocols.*  
25 *Information thus obtained will be used to evaluate ERCOT and QSE bias*  
26 *settings.*

27 P.U.C. SUBST. R. 25.503 (f)(8) applies to the provision of accurate information to

28 ERCOT. It states:

29 *A market participant shall comply with requests for information or data by*  
30 *ERCOT as specified by the Protocols or ERCOT instructions within the*  
31 *time specified by ERCOT instructions, or such other time agreed to by*  
32 *ERCOT and the market participant.*

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specifically noted. I have attached all cited Protocols, Operating Guides, and Commission rules as Exh.  
TB-1.

1   **Q.   PLEASE SUMMARIZE STAFF'S ALLEGATIONS.**

2   A.   Staff originally alleged that: (1) IPA Companies did not put their governors in  
3       service and allow them to change the units' output in response to system  
4       frequency changes; (2) IPA Companies did not transmit a frequency bias signal of  
5       any kind to ERCOT until April 14, 2006; and (3) that on that date, IPA  
6       Companies began to transmit an invalid frequency bias signal (until September 1,  
7       2006) that was improperly based upon the frequency bias of a non-affiliated  
8       generating plant.<sup>48</sup>

9       Nine months later, on June 4, 2008, Staff revised the NOV to allege, and Ms.  
10      Jaussaud testifies, that: (1) IPA Companies' units did not have their governors in  
11      service and allow them to change the units' output in response to system  
12      frequency changes; and (2) IPA Companies always transmitted a frequency bias  
13      signal of zero, but that was an inaccurate value because, in 17 documented  
14      instances, some IPA Companies' units were providing frequency response such  
15      that they had a positive frequency response characteristic.<sup>49</sup> The Staff therefore  
16      replaced its allegation that IPA Companies submitted a frequency bias signal  
17      based on a non-affiliated plant's frequency bias with the allegation that IPA

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<sup>48</sup> Notice of Violation, September 12, 2007, at 4.

<sup>49</sup> Attachment DJ-28, which Staff confirmed contains all the dates in which IPA Companies' actual frequency bias was not zero but in which it transmitted a zero bias signal. See Exhibit TB-5 at 14 (Staff Response to IPA Companies RFI 6-30). As I discuss below, that table shows 10 dates in which the "actual" bias is zero at the measurement point (Point B+30), thereby matching the zero signal sent to ERCOT. The table shows 17 other dates in which the "actual" frequency bias differed from the zero value IPA Companies transmitted to ERCOT.

1 Companies somehow provided frequency response even though their frequency  
2 response system was disabled, so that the zero frequency bias signal was wrong.

3 **Q. WHAT IS THE DEFINITION OF "FREQUENCY BIAS" AND HOW**  
4 **DOES THAT RELATE TO THE "FREQUENCY BIAS OF PORTFOLIO**  
5 **GENERATION RESOURCES"?**

6 A. Frequency bias of a generator is a positive (+) value, expressed in megawatts per  
7 0.1Hz, to represent the expected response of the generating unit to a deviation in  
8 system frequency from the scheduled frequency of 60Hz. Frequency bias  
9 represents the approximate measure of the automatic frequency response  
10 characteristics of a generator. A  $\pm 0.036$ Hz tolerance band exists in which a  
11 generator need not adjust its unit output to respond to system frequency changes  
12 and is called the "deadband."<sup>50</sup> In other words, "frequency bias" reflects the  
13 anticipated response, rather than the actual response, a generating unit will  
14 automatically provide in response to a change in system frequency outside the  
15 deadband. Neither the Protocols nor the Operating Guides define "frequency  
16 bias," but the term relates to the "governor in service" requirement of Protocols  
17 §5.8.1.1. That section, as Mr. Novelli's testimony explains, requires a generator  
18 to put its governor in service and allow it to respond to changes in system  
19 frequency. Ultimately, a generating unit's "measured frequency response  
20 characteristic" is determined by the degree to which its output automatically  
21 responds to system frequency changes, as provided by §5.8.1.1.

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<sup>50</sup> Beginning April 1, 2005, Operating Guides §2.2.5 included the provision "Maximum intentional dead band +/- 0.036Hz."

1 The "frequency bias of portfolio generation resources" is the sum of the expected  
2 response of a QSE's resources to a deviation in frequency from the 60Hz system  
3 standard – or how much frequency response a QSE's overall resource portfolio is  
4 capable of providing during a system disturbance. Finally, the frequency bias and  
5 frequency bias of portfolio generation resources are not static numbers. They are  
6 dynamic and move depending on each generating unit's output relative to a  
7 number of unit-specific characteristics such as high and low sustainable limits.  
8 For convenience purposes, the term "frequency bias" will be used herein to refer  
9 to "frequency bias of portfolio."

10 **Q. HOW IS THE FREQUENCY BIAS VALUE CALCULATED?**

11 A. Operating Guides § 2.2.3.1 guides the calculation. The generic formula is:

12 
$$\text{Frequency Bias} = \text{Generation Output} / (\text{Target Frequency} * \text{Droop})^{51}$$

13 The calculation provides the approximate measured frequency response  
14 capability of the generating units.

15 **Q. PLEASE PROVIDE AN EXAMPLE OF A QSE FREQUENCY BIAS**  
16 **CALCULATION.**

17 A. The frequency bias for a QSE is the sum of the frequency bias of each generating  
18 unit in its portfolio (as mentioned above). A generating unit's frequency bias is  
19 calculated based on its current generation output level in MW divided by the  
20 product of the droop setting times the target system frequency. For example, if

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<sup>51</sup> The target frequency for ERCOT is 60 Hz. Droop, as defined by Mr. Novelli, is a ratio measure of the percentage change in frequency needed to create a change in generation at the facility corresponding to 100 percent of the unit's rating.

1 the droop setting was 5% or 0.05, as defined in the Protocols, and 60 Hz  
2 represents the target system frequency, then a unit generating at 150 MW will  
3 have a calculated frequency bias of 5 MW. The frequency bias sign direction will  
4 then be adjusted depending on the then current system frequency level. When the  
5 system frequency is outside of the 60 +/-0.036Hz band, the frequency bias will be  
6 negative for high frequencies and positive for low frequencies. Frequency bias  
7 can be further adjusted to reflect High Sustainable Limits (HSL) and Low  
8 Sustainable Limits (LSL) of the generating units.<sup>52</sup>

9 **Q. WHEN SHOULD A QSE CHANGE THE FREQUENCY BIAS**  
10 **CALCULATION?**

11 A. According to Operating Guides §2.2.3.1, a QSE should change the frequency bias  
12 calculation when a “significant generating capability change” occurs or when  
13 their “resources’ frequency response characteristic” changes. This would render  
14 unnecessary changing the calculation for momentary or inconsequential  
15 generating capability or frequency response characteristic changes.

16 **Q. WHAT IS “FREQUENCY RESPONSE”?**

17 A. The ERCOT Protocols and Operating Guides do not expressly define that term.  
18 Instead, as Mr. Novelli testifies, they require a generator to put its “governors in  
19 service” and allow them to respond to changes in system frequency. The

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<sup>52</sup>The HSL is the maximum net capability of a resource that may be delivered for an indefinite period, while the LSL is the minimum net capability of a resource and represents the unit’s lower operating boundary. These are the boundaries within which generating units can safely and reliably operate. The frequency bias calculation must factor in the units’ HSL and LSL parameters because at or near those limits the units can only fully adjust their output to provide governor response in one direction.

1        Protocols further require that the response should occur within 30 seconds after  
2        the system frequency disturbance.<sup>53</sup> So, "frequency response," in the context of  
3        calculating the frequency bias, practically means the unit's capability to respond  
4        automatically to changes in system frequency. This definition is consistent with  
5        the definition Ms. Jaussaud used in her testimony.<sup>54</sup>

6        **Q.    DO IPA COMPANIES' UNITS REACT TO CHANGES IN THE**  
7        **FREQUENCY BIAS SIGNAL?**

8        A.    No. The frequency bias does not control the generating units' reactions to a  
9        change in system frequency. Rather, as discussed earlier, the frequency bias  
10       reflects the generating units' expected reaction to changes in system frequency.  
11       Mr. Novelli's testimony provides greater detail on the frequency response system.

12       **Q.    HOW DO IPA COMPANIES USE THEIR FREQUENCY BIAS SIGNAL**  
13       **INTERNALLY?**

14       A.    Frequency bias is embedded in ANP Funding, Hays and Midlothian internal SCE  
15       calculations to better assist the sites to know exactly what the SCE is at all times,  
16       at a local plant and portfolio level. This figure is used to let IPA Companies  
17       know how each unit is performing against its adjusted energy schedule, including  
18       expected frequency response, not to show whether the units are specifically  
19       reacting to a change in system frequency. If the SCE begins to move outside of

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<sup>53</sup> Protocols § 5.8.2.

<sup>54</sup> Jaussaud Testimony, Appendix A at 4.

1 the tolerance level, IPA Companies would review their units and practices to  
2 ensure continued compliance.

3 **Q. HOW IS FREQUENCY BIAS REPORTED TO ERCOT?**

4 A. An updated frequency bias is reported to ERCOT approximately every two  
5 seconds through ERCOT-approved data telemetry systems. It is also one of the  
6 many elements used in the calculation of the SCE signal submitted to ERCOT.

7 **Q. DOES ERCOT ALLOW SOME DEVIATION BETWEEN THE**  
8 **REPORTED FREQUENCY BIAS AND ACTUAL REAL-TIME**  
9 **FREQUENCY BIAS?**

10 A. Yes, Operating Guide § 2.2.3.1 specifies that it “should approximate its measured  
11 frequency response characteristic.” As Professor Baughman testifies, frequency  
12 bias is intended to be an approximation for planning purposes. Also, Mark Henry,  
13 who is the TRE’s Manager of Compliance Review and Verification, testified that  
14 ERCOT does not require an exact match between the reported frequency bias  
15 value and actual frequency bias, but instead allows for some variance between the  
16 two.<sup>55</sup>

17 **Q. WAS THE TRANSMITTED IPA COMPANIES’ ZERO FREQUENCY**  
18 **BIAS SIGNAL INVALID AT ANY TIME BEFORE APRIL 2006?**

19 A. No. The “zero” frequency bias signal that IPA Companies communicated to  
20 ERCOT and used in the SCE calculation was correct, as it was the approximate  
21 value of IPA Companies’ units’ measured frequency response characteristic. This

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<sup>55</sup> Henry Deposition (September 23, 2008) at 223-24.

1 is exactly what Operating Guides §2.2.3.1 requires. Before IPA Companies  
2 enabled their frequency response capability, these units could not automatically  
3 respond to nor adjust their output in response to changes in system frequency.  
4 Because they had no frequency response capability, their frequency response  
5 characteristic was a static zero. Zero was therefore the appropriate and accurate  
6 value to use in the frequency bias calculation.

7 **Q. HAVE TRE AND ERCOT CONFIRMED THIS?**

8 A. Yes. Mr. Henry testified that a QSE that is not providing governor response  
9 should send a frequency bias signal of “zero” to ERCOT.<sup>56</sup>

10 **Q. HAS STAFF AGREED WITH THIS AS WELL?**

11 A. Yes. In responses to discovery requests, Staff agreed that a zero frequency bias  
12 signal is the appropriate frequency bias reading to transmit to ERCOT for a QSE  
13 that is not able to provide frequency response.<sup>57</sup>

14 **Q. BY WHAT MECHANISM DID IPA COMPANIES PROVIDE A**  
15 **FREQUENCY BIAS SIGNAL TO ERCOT?**

16 A. ANP Funding became a QSE in March 2002 and has been the QSE for IPA  
17 Companies’ generating units since then. IPA Companies have contracted with  
18 APX, to provide certain services, including ERCOT data telecommunications  
19 consisting of, among other things, provision of a frequency bias signal to ERCOT.

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<sup>56</sup> Id. at 95, 225-26; (September 24, 2008) at 26.

<sup>57</sup> Exh. TB-5 at 12 (Staff Supplemental Response to IPA Companies RFI 4-5).



1   **Q.   WHAT FREQUENCY BIAS VALUE DID IPA COMPANIES**  
2   **COMMUNICATE TO ERCOT?**

3   A.   From March 2002, when ANP Funding first became a QSE, until April 14, 2006,  
4       APX consistently sent a static “zero” frequency bias signal to ERCOT on ANP  
5       Funding’s behalf. In addition, APX incorporated a zero value into ANP  
6       Funding’s transmitted SCE calculation.

7   **Q.   WHY WAS A STATIC “ZERO” VALUE USED?**

8   A.   A static zero value was used to reflect the expected frequency response of IPA  
9       Companies’ generating units, that is, they were not capable of responding to  
10      frequency deviations. The use of a static zero value was appropriate because it  
11      accurately reflected the actual frequency response characteristic of the units in the  
12      ANP Funding resource portfolio during that time period as required by Operating  
13      Guide § 2.2.5. A zero frequency bias value can only mean that a unit is not  
14      expected to, nor capable of, providing frequency response. Mr. Novelli’s  
15      testimony shows that IPA Companies’ units were incapable of providing  
16      frequency response, until the mitigation plan was implemented in Spring 2006.

17   **Q.   WHY WAS THE VALUE CHANGED ON APRIL 14, 2006?**

18   A.   As part of a mitigation plan to enable the units to provide governor response, IPA  
19       Companies began operating two of its generating units in frequency sensitive  
20       mode shortly before that time. It was appropriate to revise the frequency bias at  
21       this time as part of that mitigation plan because the measured frequency response  
22       characteristics of the ANP Funding portfolio had changed, and therefore, the

1 expected frequency response was no longer a static zero. As the units' frequency  
2 response systems were enabled and tested, IPA Companies provided APX with  
3 each unit's new frequency response characteristics. APX utilized this value when  
4 calculating IPA Companies' frequency bias for both transmitting the frequency  
5 bias signal and calculating IPA Companies' SCE. Thus, APX continued to  
6 transmit a frequency bias signal to ERCOT on IPA Companies' behalf that  
7 accurately reflected the expected frequency response of IPA Companies' units.

8 **Q. MS. JAUSSAUD TESTIFIED THAT IPA COMPANIES DID NOT BEGIN**  
9 **TRANSMITTING A NON-ZERO FREQUENCY BIAS SIGNAL UNTIL**  
10 **APRIL 26, 2006. IS THIS CORRECT?**

11 **A.** No. The signal began April 14, 2006. Ms. Jaussaud's assertion apparently is  
12 based upon an statement in an e-mail from Mr. Henry to Ms. Jaussaud that this  
13 signal does not begin to appear in a particular ERCOT database until April 26<sup>th</sup>. I  
14 cannot account for how ERCOT stores its records or when data is distributed to  
15 particular databases, but ANP Funding began transmitting the real-time frequency  
16 bias signal as part of the ANP Funding mitigation plan implementation on April  
17 14, 2006.<sup>58</sup>

18 **Q. WERE IPA COMPANIES' GENERATING UNITS CAPABLE OF**  
19 **OPERATING IN FREQUENCY RESPONSE MODE BEFORE THE**  
20 **MODIFICATIONS WERE MADE?**

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<sup>58</sup> See Exh. TB-9 (E-mail from Katherine Williams of APX, Inc., April 14, 2006).

1 A. No. It is not possible that the Midlothian and Hays units could have provided  
2 frequency response without the frequency response capability turned on and  
3 activated. The units were, therefore, physically incapable of providing frequency  
4 response until the mitigation plan was implemented. Mr. Novelli explains this in  
5 greater detail in his testimony.

6 **Q. WERE THERE ANY CHANGES IN IPA COMPANIES' UNITS'**  
7 **GENERATING CAPABILITY TO PROVIDE FREQUENCY RESPONSE**  
8 **DURING THE RELEVANT PERIOD?**

9 A. No. IPA Companies did not enable these units to operate in frequency response  
10 mode until the mitigation plan was implemented.

11 **Q. MS. JAUSSAUD'S ATTACHMENT DJ-28 OFFERS WHAT PURPORTS**  
12 **TO BE THE "CALCULATED FREQUENCY BIAS." WHAT DOES THIS**  
13 **ATTACHMENT REFLECT?**

14 A. Discovery has revealed that these values shown as the "Calculated Bias" are the  
15 frequency biases that the PDCWG calculated as ANP Funding's frequency bias at  
16 particular two-second intervals on the day listed.<sup>59</sup> These days were days on  
17 which Measurable Events occurred, triggering the PDCWG's review.<sup>60</sup> The other  
18 column labeled "QSE Reported Bias" lists the frequency bias reading that APX

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<sup>59</sup> Exh. TB-7 (ERCOT Disturbance Analysis Reports). These contain highly sensitive and confidential material and are being filed under seal.

<sup>60</sup> A "measurable event" is the sudden change in interconnection frequency that will be evaluated for performance compliance will have i) a frequency B Point between 59.700 Hz and 59.900 Hz or between 60.100 Hz and 60.300 Hz, and ii) a difference between the B Point and the A Point greater than or equal to +/- 0.100 Hz." Protocols §5.8.2.

1 transmitted on ANP Funding's behalf to ERCOT. This attachment compares the  
2 two values for 27 instances between April 2005 and April 2006.

3 **Q. HOW WAS THE "CALCULATED FREQUENCY BIAS" DERIVED?**

4 A. According to the spreadsheets and generation data produced by ERCOT in  
5 response to the Staff's subpoena, it appears that ERCOT simply took the raw  
6 QSE-level generation information at each two second interval during times in  
7 which system frequency was  $\pm 0.10$  Hz than the target 60Hz frequency level. It  
8 then applied a macro to this raw data to derive a frequency bias number for each  
9 of these two second intervals. Professor Baughman explains this data in more  
10 detail.

11 **Q. HOW DOES THE PDCWG UTILIZE THIS INFORMATION?**

12 A. PDCWG utilizes these values as screening tools to determine possible non-  
13 compliance. As I discuss in more detail below, and as Mr. Novelli also discussed,  
14 PDCWG members and assisting ERCOT and TRE staff review these calculations  
15 to determine possible non-compliance. Upon identifying such possible non-  
16 compliance, they then contact the QSE for an explanation of the QSE's actions  
17 during the time in question. Only after consulting the QSE and reviewing the  
18 QSE's generation information will PDCWG and TRE make determinations about  
19 non-compliance.

20 2. Response to Staff's Allegation

21 **Q. THE STAFF HAS ALLEGED THAT IPA COMPANIES DID PROVIDE**  
22 **GOVERNOR RESPONSE ON CERTAIN DAYS BEFORE APRIL 26, 2006,**

1           **SO THAT THE ZERO FREQUENCY BIAS SIGNAL WAS INCORRECT.**  
2           **IS THE STAFF'S ALLEGATION TRUE?**

3    A.    No. First, in the 10 instances where the "ERCOT calculated Frequency Bias"  
4           matches the zero value ANP Funding submitted to ERCOT, the values match,  
5           demonstrating that ANP Funding's bias value was correct, even under Ms.  
6           Jaussaud's theory. Mr. Henry agreed in his testimony, observing that "the  
7           numbers correspond."<sup>61</sup> Also, Mr. Novelli explained in his testimony that, on the  
8           days Ms. Jaussaud claims IPA Companies were providing governor response (as  
9           shown on Attachment DJ-28),<sup>62</sup> the unit output changes she asserts were  
10          "governor response" were, in fact, either pre-planned generation output changes  
11          that coincidentally occurred when the system frequency changed or instead were  
12          temporary movements attributable to providing Up Regulation Service (URS) or  
13          Down Regulation Service (DRS), both ERCOT ancillary services, and not caused  
14          by unit operators or any frequency response systems. The basic and fundamental  
15          flaw in Ms. Jaussaud's analysis is, therefore, that she wrongly assumes that any  
16          time IPA Companies units' output changed (either up or down) at the same time  
17          ERCOT system frequency was moving outside the  $\pm 0.036\text{Hz}$  deadband, that there  
18          was "governor response." As Mr. Novelli explains in his testimony, the fact that  
19          IPA Companies' units were adjusting their output or providing URS or DRS does

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<sup>61</sup> Henry Deposition (September 23, 2008) at 222.

<sup>62</sup> The title to the column "Calculated Frequency Bias" is somewhat inaccurate, as the values shown in that column are not the "bias," which is an estimated unit response, but rather a calculated MW response by the units occurring at the time of a frequency deviation. However, it does not prove that unit movement was caused by the frequency deviation.

1 not indicate that they were providing "governor response" or that these units  
2 suddenly developed a "frequency response characteristic" that should have been  
3 reflected in the frequency bias signal. Instead, these output changes were not  
4 attributable to any frequency response characteristic or capability of the units.

5 **Q. WHY WERE THESE CHANGES NOT "FREQUENCY RESPONSE"?**

6 A. These types of changes were not automatic actions resulting from IPA  
7 Companies' units' "governor in service" or its frequency response system.  
8 Regulation Service is distinct from frequency response. Mr. Henry testified that  
9 Regulation Service is a secondary frequency response, not primary frequency  
10 response, as is "governor response."<sup>63</sup> Additionally, Sidney Niemeyer, then-head  
11 of the PDCWG, whom Ms. Jaussaud cited in her testimony, authored a paper in  
12 which he distinguished Regulation Service from frequency response.<sup>64</sup> Also,  
13 changes due to pre-planned upward or downward ramping of the units were not  
14 "responses" to the system frequency change. Instead, they were simply unit  
15 generation output movements whose timing was coincidental with a system  
16 frequency change and which would have occurred with or without a change in  
17 system frequency. Even if IPA Companies were attempting to make these  
18 changes occur at the same time as a system frequency change (which, of course,  
19 would not be possible for pre-planned unit output changes), Ms. Jaussaud's  
20 definition of frequency response would still not encompass the changes that

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<sup>63</sup> Henry Deposition (September 28, 2008) at 125.

<sup>64</sup> Exh. TB-6 at 4-6.

1 occurred. In discovery, she responded that such “manual” attempts to provide  
2 frequency response are not compliant with ERCOT Protocols, and, therefore, do  
3 not constitute the sort of frequency response contemplated by the Protocols and  
4 Operating Guides.<sup>65</sup>

5 **Q. DOES EVERY INSTANCE IN WHICH A UNIT’S OUTPUT CHANGES**  
6 **AT THE SAME TIME AS THE SYSTEM FREQUENCY CHANGES**  
7 **REPRESENT “GOVERNOR RESPONSE”?**

8 A. No. By sheer coincidence, it is inevitable that any number of generating units,  
9 including IPA Companies’ units, would be increasing or decreasing their output  
10 for a variety of reasons (some listed below) at the precise time that the system  
11 frequency moves out of the  $\pm 0.036\text{Hz}$  deadband. None of these unit output  
12 changes are “frequency response,” or “governor response.” They are instead  
13 examples of how a typical generating unit operates in a dynamic, integrated  
14 electrical system. These reasons include, but are not limited to:

- 15 • The units could have been selected to provide balancing energy, which would  
16 require a unit to increase its output (or “down balancing energy,” which would  
17 require a unit to reduce its output);
- 18 • Bilateral contractual commitments could have required them to back down or  
19 increase their output at particular times;
- 20 • The units could have been conducting operations tests;
- 21 • They could have been scheduled to come on or off-line;
- 22 • The units could have “tripped” or experienced some other technical issues  
23 requiring the operators to reduce production for a time;
- 24 • The units could have been responding on Automatic Generation Control;
- 25 • The units could have been providing Responsive Reserve;

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<sup>65</sup> Exhibit TB-5 at 13 (Staff Response to IPA Companies RFI 5-7).

- 1       • The units could have experienced fuel variability or fuel of a different quality;  
2       • Ambient conditions could have changed; or  
3       • The units could have been dispatched on out of merit instructions [OOME].  
4

5       None of the changes in unit output that occur due to these causes are “governor  
6       response,” even under Ms. Jaussaud’s definition, because they are not automatic  
7       and are not “responses” to a system frequency change. Instead, these output  
8       changes reflect the normal variances, caused by a variety of events beyond the  
9       operator’s control, in a generating unit’s output during a typical operating day.

10    **Q.    IS THERE ANY INDICATION THAT MS. JAUSSAUD AGREES WITH**  
11    **THIS ASSESSMENT?**

12    **A.    Yes. In a draft of her testimony produced during the discovery phase, she wrote:**

13               From IPA’s admission, we know that these MW outputs or  
14               reductions were not due to Governor Response, and from ERCOT  
15               data, we know that they did not reflect a 5% droop. From the data,  
16               we also know that they were not sustained for at least 30 seconds  
17               after the B point, and therefore did not satisfy the requirements of  
18               the Protocols and Operating Guides relating to governor in  
19               service.<sup>66</sup>

20       This shows that Ms. Jaussaud understands that the unit movements she identified  
21       were not governor response and, therefore, not compliant with governor in service  
22       requirements. As such, IPA Companies correctly and reasonably excluded these  
23       unit movements from the frequency bias calculation, and the static zero bias was  
24       correct.

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<sup>66</sup> Exh. TB-5 at 7 (Staff Supplemental Response to IPA Companies RFI 1-3, bates page 1273).



1   **Q.   HAS MS. JAUSSAUD DISTINGUISHED BETWEEN MOVEMENTS**  
2       **REFLECTING GOVERNOR RESPONSE AND OTHER MOVEMENTS IN**  
3       **HER CALCULATIONS?**

4   A.   No. Ms. Jaussaud incorrectly assumes in her testimony that any change in a  
5       QSE's units' output, even by coincidence, occurring at the same time and in the  
6       opposite direction of the ERCOT system frequency movement out of the  
7       deadband range, demonstrates "frequency response." This assumption is a basic  
8       logical fallacy, as actions precedent are not necessarily causally related to a  
9       subsequent event without further substantiation. The mere fact that the ERCOT  
10      system frequency changed just before IPA Companies' units changed their output  
11      does not mean that the system frequency change **caused** IPA Companies' units to  
12      adjust their output or that the unit output change was a **response** to the system  
13      frequency change.

14   **Q.   DO ERCOT AND PDCWG BELIEVE THE CALCULATED BIAS IS A**  
15       **COMPLETELY ACCURATE MEASURE OF THE FREQUENCY**  
16       **RESPONSE CHARACTERISTIC?**

17   A.   No. Mr. Henry testified that neither can distinguish "frequency response" from  
18       some other unit movements with certainty from the data available to each.<sup>67</sup> For  
19       that reason, PDCWG and now TRE will request that a QSE provide data to  
20       explain questionable data and scores or where a mismatch exists.<sup>68</sup> Mr. Henry

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<sup>67</sup> Henry Deposition (September 23, 2008) at 187.

<sup>68</sup> Id. (September 24, 2008) at 29-30.

1 testified that these matters require the companies' technical experts to provide  
2 detailed information necessary to fully evaluate ERCOT data,<sup>69</sup> as many factors  
3 must be considered when evaluating such data.<sup>70</sup>

4 **Q. WAS ANP FUNDING'S FREQUENCY BIAS SIGNAL INACCURATE**  
5 **WITHIN THE MEANING OF THE PROTOCOLS AND OPERATING**  
6 **GUIDES?**

7 A. The Operating Guides state that the frequency bias calculation should  
8 "approximate" the frequency response characteristics, not necessarily match  
9 actual frequency bias every second of every hour of every day. It should be kept  
10 in mind that the QSE provides ERCOT with data every two seconds, meaning that  
11 in the 723 days in question ANP Funding provided data over 30 million times. A  
12 difference in only 17 brief instances over two years of measurable events would  
13 appear to show the zero frequency bias signal did, in fact, approximate the  
14 frequency response characteristics.

15 **Q. DOES ATTACHMENT DJ-28 CONTAIN ERRORS?**

16 A. Yes. It contains two incorrect dates and one incorrect value. I have compared  
17 DJ-28 to the Disturbance Analysis Reports for Measurable Events that ERCOT  
18 produced in response to Staff's subpoena, which, as noted earlier, provide the  
19 "ERCOT Calculated Bias" presented in DJ-28. The comparison reveals that Ms.  
20 Jaussaud wrote "1/16/2005" rather than "1/16/2006" and "3/28/2003" rather than

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<sup>69</sup> Id. at 31.

<sup>70</sup> Id. (September 23, 2008) at 110.