TO: NAESB Wholesale Electric Quadrant Inadvertent Interchange Payback Task Force, Posting for Interested Industry Participants
FROM: Todd Oncken, NAESB Deputy Director
RE: Draft Minutes from the NAESB Wholesale Electric Quadrant Inadvertent Interchange Payback Task Force Meeting – July 9, 2003
DATE: July 16, 2003

Wholesale Electric Quadrant
Inadvertent Interchange Payback Task Force
July 9, 2003
(10:00 a.m. – 3:00 p.m. Mountain)

1. Welcome
Mr. Terelmes called the meeting to order and welcomed meeting participants. Mr. Oncken gave the antitrust advice. Participants introduced themselves.

Mr. Terelmes reviewed the draft agenda. The following items were added: 1) a review of discussions being held regarding the scope of the Inadvertent Interchange Payback Task Force (IIPTF); and 2) a presentation on a frequency component by Mr. Illian. Mr. Green moved, seconded by Mr. Goins, to adopt the agenda as modified. The motion passed unanimously.

Participants discussed the draft minutes of the June 4, 2003 IIPTF meeting. Mr. Blohm proposed changes to the discussion of Mr. Illian's model 5. Mr. Fidrych moved, seconded by Mr. Oberski, to approve the minutes of the June 4, 2003 IIPTF meeting, as amended. The motion passed unanimously. Discussion and approval of the June 18 IIPTF draft minutes was deferred.

To assist the NAESB office in meeting preparations, Mr. Terelmes requested that any work papers be submitted to the NAESB office one business day prior to any IIPTF meeting.

2. Business for Discussion
Mr. Terlemes provided a brief summary on pending issues surrounding the scope of the IIPTF. He said the IIPTF has come to the determination that it would price the inadvertent data provided by NERC's calculations. However, he stated it is currently unclear whether NERC or NAESB will provide standards to determine the data upon which the proposed IIPTF standards would be based. To that end, he noted a meeting scheduled for August 4 in Philadelphia to discuss the open issue. Mr. Terelmes stated the results of the August 4 meeting could change the scope of the IIPTF.

Draft Outline for standard development – Assignment confirmations: Mr. Terelmes reviewed the draft outline for standard development and proposed assignments presented during the June 18 IIPTF meeting. He explained the work assignments of the outline would be a reasonable way to segment the leadership responsibility for the large task of producing the IIPTF standards (Attachment A). All assignments were confirmed, with the exception of item C.3.d, Determination of Credit Issues. It was suggested the proper fit for the assignment would be a representative from an organization's credit department. Additionally, it was noted the assignment for C.3.e, Determination of Settlement, was dependent on the results of the August 4 meeting. Deadlines for assignments will be determined after the August 4 meeting.
Continued Discussion of Illian model: Mr. Terelmes stated the IIPTF previously decided Illian Models 2 and 5 were the most applicable for pricing the energy component of inadvertent

interchange payback issues. It was explained that Model 2 was a single price model that would use the highest price on the interconnection when frequency was high, and use the lowest price on the interconnection when frequency was low. It was explained Model 5 was a locational pricing model, suggesting the applicable price for inadvertent interchange would be the value of energy at the specific location the interchange occurred. Both models would use an adder to create the proper market incentive for participation in the inadvertent interchange. Mr. Terelmes noted formulation of the adder has not been determined, but Mr. Illian has proposed an adder to be discussed during this meeting.

Mr. Illian provided a summary of the work paper he prepared for this meeting, *Locational-Pricing for Inadvertent Interchange*. Mr. Illian's work paper compares the two Models and reaches a conclusion on which model is preferable. Mr. Illian stated that whatever model is chosen, it is incumbent on the task force to do no harm to the market. Mr. Illian stated single price markets, like the one contemplated in Model 2, have historically not worked because of gaming opportunities. Mr. Illian said Model 2 had the following disadvantages: 1) determining the high or low price would require gathering all prices on the interconnection; 2) possible incentives for a control area to manipulate its inadvertent interchanges; 3) balanced revenues resulting in penalties and rewards independent of contribution to the inadvertent problem; and 4) the existence of constraint bypass. It was also noted the advantage to the single price model is that participants would not have advanced knowledge of the energy price.

In contrast, Mr. Illian said locational pricing, Model 5, eliminates most opportunities to game the market. He explained the energy price used by the control area in locational pricing would be the price the control area would quote into the hourly market, assuming a control area is participating in an hourly market. Mr. Illian said this would remove from the producer of the inadvertent interchange any possibility for financial gain. Additionally, he said the lack of balanced compensation eliminates any unjustified rewards or penalties. He suggested using Model 5 would ensure the IIPTF does no harm to the market.

During discussion of Model 5 several questions arose, but it was noted the questions would apply to either of the models. Questions included: 1) what method should be used to set the locational price when a control area has several connections to the interchange; 2) what is the depth of the market when evaluating a price based on the hourly market; and 3) what are the implications of balanced compensation versus unbalanced compensation.

Participants found the lack of compensation parity in Model 5 significant. Mr. Illian suggested, due to bias inherent in the control areas' historical response to pattern of inadvertent interchanges, there would be a net overcollection for the interconnection over the long term. Consensus was not reached on this issue.

Mr. Illian recommended the IIPTF continue development of the energy pricing model, with the initial focus being the investigation of a locational based energy component pricing model (Model 5). Mr. Illian stated this approach would support all the market designs being evaluated and account for constraint. Further, he suggested the IIPTF explore the frequency component as an appropriate adder to the locational pricing model. Participants agreed to proceed with the development of Model 5.

Mr. Vandervort encouraged the IIPTF to evaluate the MISO work paper provided by Mr. Bilke at the June 18 conference call. He stated the work paper demonstrates the hourly settlement approach proposed by MISO to address inadvertent interchanges. Mr. Terelmes agreed, but noted the solution reached by MISO within the LNMP market framework might be different than the solution reached by the IIPTF. He noted the IIPTF solution would likely be more complex

than the MISO solution. Mr. Blohm stated frequency control is not addressed in the MISO proposal. Mr. Goss stressed the importance of keeping any solution developed by the IIPTF as simple as possible. He stated keeping the solution simple would foster industry support.

Mr. Griffith commented on the similarities between the issues the IIPTF is facing with the electric market and the natural gas market's process for handling imbalances. Mr. Griffith stated the gas markets have generally gone toward an in-time locational pricing method. He said that approach recognizes the circumstances surrounding the imbalance, including whether it was scheduled, partially scheduled, or unscheduled. Mr. Griffith explained that overruns were generally handled on a daily basis, but some systems have hourly or monthly pricing. However, he noted the markets are moving toward an hourly market. Mr. Griffith suggested that if a company has to rely on a facility that would cause additional expense to accommodate overruns, that reliance should be reflected in the price when the activity occurs. He stressed the importance of sending the correct economic signals to the market, and stated in-kind transactions mask the economic signal. Mr. Terelmes suggested the experience of the natural gas market could be translated to the electric industry for the issue of inadvertent interchange payback.

Continued Discussion of Pricing methodologies: The following questions arose during the discussion of pricing methodologies: 1) how would markets without marginal pricing, such as the Southeast, provide price data when no transaction takes place within the hour; 2) how would markets without marginal pricing account for the price of longer term trades, for example peak periods of four hours; 3) will the prices contained in existing contracts be maintained without the inclusion of any adder; 4) in the instance of bilateral trades, how would a different price based on the counterparty be reported; 5) at what time would the parties be required to post their hourly price; and 6) whether a posted price makes that the price to beat.

Mr. Terelmes suggested a solution for pricing in the bilateral market when an hourly price is not available for the specified time would be to use a stepped-down method. Under the proposed method, the hours with known price adjacent to the pertinent hour would be used as the benchmark with the assumption applied that the price change occurred evenly on the hours between the two points. Other proposed solutions included using the price at the same hour the previous day, using the price at the same hour on a day with a comparable load, or using the tariff rates for imbalance energy.

It was recommended participants reflect on the questions posed on both the method and pricing for discussion at the next meeting. Mr. Terelmes stated the pending discussion is whether Model 5 works, and whether it works in conjunction with the available pricing.

Inadvertent Interchange Frequency Control Component: Mr. Illian gave a presentation on a frequency component for the pricing of inadvertent interchange. Mr. Illian's presentation is posted as a work paper for this meeting. Mr. Illian provided a general discussion on the ancillary services market, noting that market is where the frequency response energy originates. Mr. Illian reached the following conclusions in his presentation:
1) Inadvertent Management System should be designed to provide accurate price signals instead of depending on 'Command and Control' rules;
2) The concept of a Balancing Market cannot work with ~~inadvertent~~energy information alone – ~~inadvertent~~energy alone does not provide the information necessary to set a price;
3) Inadvertent an only be managed effectively when it is managed in conjunction with the process that contributes to ~~Inadvertent~~ Shared Frequency Control.

Mr. Illian stated a frequency component (adder) would define 'good' and 'bad' results, discourage 'bad' results, encourage 'good' results, use an understandable process, base compensation on service, use proportional compensation, use a simple process, and minimize settlement risk. Mr. Illian suggested the importance of the adder can be seen through the market response during the California crisis, where unregulated market participants followed the price signals and worried about the market rules later. Mr. Illian's adder proposal contained a formula for the calculation of a frequency component. Mr. Blohm provided a graph to complement the formula contained in Mr. Illian's presentation. Mr. Blohm reviewed his graph. Mr. Blohm stated a net ~~frequency error~~inadvertent of zero demonstrates ~~a properly functioning and~~an always economically balanced market for the frequency control component.

Participants discussed Mr. Illian's presentation. Mr. Terelmes noted that while the calculations contained in Mr. Illian's presentation were very complex, they would not necessary lead to complex solutions. He stated any solution reached by the IIPTF would be presented to market participants in as simple a format as possible. There was brief discussion on the mechanics of the formula contained in Mr. Illian's presentation and its application to solving the gaming issues of inadvertent interchange payback. It was noted during discussion that the formula proposed by Mr. Illian calculates the quantity of frequency deviation, not the economic value of that deviation. Mr. Illian stated he previously calculated a ~~price~~monetary unit for the deviation, to be applied to the value, ~~which~~and this was roughly the equivalent of $1/Hz/hour. Mr. Blohm suggested that the complete adder would react like a quadratic function with price reacting exponentially to increases in frequency error. Mr. Illian offered to submit additional work papers on the frequency adder proposal.

Prioritize Issues and Set Goals
This item was not discussed.

Other Issues
No other issues were discussed.

3. Calendar of Meetings
Dates for upcoming WEQ IIPTF meetings were discussed as follows:
July 23 (2:00 p.m. – 4:00 p.m. Central) Conference Call
August 6 (9:00 a.m. – 3:00 p.m. Eastern) Philadelphia, PA
August 20 (2:00 p.m. – 4:00 p.m. Central) Conference Call
September 15 (1:00 p.m. – 4:00 p.m. Central) Austin, TX
September 16 (9:00 a.m. – noon Central) Austin, TX

4. Adjourn
The meeting adjourned at 2:45 p.m. Mountain.