Exhibit No. ___ (MISO-5)

PREPARED DIRECT TESTIMONY OF DR. WILLIAM HOGAN

ON BEHALF OF THE MIDWEST INDEPENDENT TRANSMISSION SYSTEM OPERATOR, INC.
DOCKET NO. ER04-____-000 BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Midwest Independent Transmission System Operator, Inc.	))	Docket No. ER04-____-000

PREPARED DIRECT TESTIMONY OF
DR. WILLIAM HOGAN

I. INTRODUCTION

Q. PLEASE STATE YOUR NAME AND BUSINESS ADDRESS.

A. My name is William W. Hogan. My business address is the John F. Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, Massachusetts 02139.

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

A. I am the Lucius N. Littauer Professor of Public Policy and Administration at the Kennedy School of Government, Harvard University.

Q. PLEASE SUMMARIZE YOUR EDUCATIONAL AND PROFESSIONAL BACKGROUND.

A. In addition to my teaching duties, I am currently the Research Director for the Harvard Electricity Policy Group; a Director at LECG, an economic and business consulting firm; and Faculty Chair of The Repsol YPF - Harvard Kennedy School Fellows Program for energy policy research. In addition, I serve as Director of Graduate Studies for the Ph.D. Program in Public Policy and the Ph.D. Program in Political Economy and Government at the Kennedy School of Government. I have also served as Chair of the Public Policy Program and as Director of the Energy and Environmental Policy Center. I do not speak on behalf of any of these groups.

For the last fifteen years, I have been actively engaged in the design and improvement of competitive electricity markets in many regions of the United States, as well as around the world, from England to Australia. My activities include designing the market structures and market rules by which regional transmission organizations, in various forms, coordinate bid-based markets for energy, ancillary services, and financial transmission rights. I have testified before and provided comments to the Commission on all of these matters on many occasions.

Prior to joining Harvard University, I was a member of the faculty of Stanford University, where I founded the Energy Modeling Forum. I am a past president of the International Association for Energy Economics. I received an undergraduate degree in economics from the U.S. Air Force Academy in 1966 and a Ph.D. from UCLA in 1972. A copy of my curriculum vitae is attached, and further details can be found on my web page at www.whogan.com.

Q. PLEASE DESCRIBE YOUR RESPONSIBILITIES WITH THE MIDWEST ISO AS THEY RELATE TO THIS FILING.

A. The Midwest Independent System Operator ("Midwest ISO") asked me to review the procedures the Midwest ISO has developed to deal with transmission-related agreements entered into by parties in the Midwest prior to the emergence of Open Access Transmission Tariffs. In the Midwest, these are sometimes called "pre-OATT" contracts or "Grandfathered Agreements" ("GFAs"), because the procedures applied to them may not be the same as those that apply to all other parties functioning under the OATT. This is especially true when an RTO begins to implement an Energy Market Tariff ("Tariff"),

as the Midwest ISO proposes to do, with its reliance on RTO-coordinated markets, locational marginal pricing ("LMP") and financial transmission rights ("FTRs").

Q. WHAT IS THE PURPOSE OF YOUR TESTIMONY?

A. I first describe the general problem that typically arises with respect to such Grandfathered Agreements and set forth principles and objectives in deciding how to treat GFAs. I explain how an LMP-based Tariff changes the way in which transactions are handled, compared to the treatment these GFAs are used to receiving. I then describe different approaches an RTO could use with GFAs, such as voluntary conversion to full Tariff service, a second-best approach that requires Tariff compliance by at least one of the GFA parties, and other options. I describe in more detail the three options the Midwest ISO Tariff offers to GFA parties for handling their transactions. Finally, my task is to evaluate whether the proposed procedures that the Midwest ISO will apply to transactions pursuant to the GFAs are reasonable and in the public interest, even though they differ in some ways from procedures that will apply to other transactions and parties.

Q. PLEASE SUMMARIZE YOUR CONCLUSION REGARDING THE MIDWEST ISO'S PROPOSED TREATMENT OF GRANDFATHER AGREEMENTS.

A. Previous decisions by the Commission substantially constrain the choices for the Midwest ISO in crafting a workable solution for the treatment of GFAs. Although the proposed Midwest ISO framework includes alternatives that would be consistent with protecting the rights under the existing GFAs and minimizing the shift of costs from GFA Transmission Owners ("TOs") to others, it is my understanding that the most likely option to be selected by GFA parties would go substantially further. The net effect would be to expand the benefits under the GFAs and shift costs away from TOs towards others,

while distorting the incentives for efficient scheduling in the day-ahead market for a large part of the load. The GFAs will operate under an incentive to expand arbitrage opportunities by submitting formal day-ahead schedules that deviate from real-time expectations. Within these constraints, the Midwest ISO has defined a largely workable framework and recommended that it be applied only for a transition period. The good news is that these limitations do not apply to the real-time market that the Midwest ISO will administer. Hence, the principal impact could be limited to cost-shifting and increased uplift. To the extent that efficient arbitrage operates through virtual bidding, reliability problems should be minimized under the proposed Midwest ISO framework. With a well designed real-time market and virtual bidding to provide counterflow for GFA day-ahead schedules in the day-ahead market, the Midwest ISO proposal provides the GFA parties with an incentive to implement efficient schedule adjustments. The magnitude of the increase in uplift payments is difficult to predict, but it could be substantial and thus encourage efforts to improve the transitional mechanism.

II. PRINCIPLES AND OBJECTIVES IN DESIGNING MECHANISMS TO HANDLE GRANDFATHERED AGREEMENTS

Q. PLEASE DESCRIBE WHAT YOU MEAN BY A "GRANDFATHERED AGREEMENT" OR "GFA".

A. I will use the term "GFA" to refer to any number of pre-OATT contractual arrangements, signed prior to September 16, 1998, and entered into by a transmission owner ("TO") and a transmission customer ("TC"). The testimony of Dr. Ron McNamara of the Midwest ISO provides a more detailed discussion of the nature and magnitude of these GFAs in the Midwest ISO. These arrangements typically provide either point-to-point or network service and involve the use of the owner's transmission system to move power from one or more resources to some other location(s), where it is available to the serve the transmission customer's loads. Some GFAs merely involve the right of a transmission customer to use the TO's system to transmit power from the customer's own or contracted resources to its loads or to some intermediate drop-off point. Other GFAs may also include some obligation by the TO to supply the power, such as through a full requirements contract. My understanding is that a typical GFA would specify the tariff charges for transmission service, which may or may not include unbundled charges or rates for losses and any ancillary services needed to support the expected transactions. If the GFA provides for "firm" transmission service, the transmission rate would presumably cover costs for any redispatch the TO might have to provide to relieve congestion and maintain firm service. The GFA may also indicate conditions under which redispatch will not be provided, in which case curtailment such as under TLR

rules[1] might apply. The Midwest ISO has listed the agreements that fall in these various GFA categories in Attachment P to the Midwest ISO's Open Access Transmission Tariff ("OATT", or Midwest ISO OATT).

These various arrangements are called "Grandfathered agreements" because they were entered into prior to September 16, 1998, that is, prior to the Commission's development of open access transmission tariffs. Consistent with its directives in Order No. 888, these GFAs were not made subject to unilateral revision by the Commission as a result of the adoption of a new transmission tariff. The general idea is that the parties to these GFAs have contractual rights to have the terms and conditions of their contracts honored, notwithstanding the fact that those terms and conditions may be different from the provisions of the OATT.

Q. DOES TREATING PRE-EXISTING CONTRACTS AS "GRANDFATHERED" AGREEMENTS MEAN THAT ALL OF THE TERMS AND CONDITIONS OF GFAS MUST BE HONORED EXACTLY AS WRITTEN?

A. In the literal sense, this would not be possible, reasonable or in the public interest. The environment is always changing, and parties to contracts must fulfill their obligations under the contract in the context of that environment. The focus should be to preserve the material benefits and obligations under the contract, not to require that everything be exactly the same. Under Order No. 2000, FERC has indicated that the goal in treating GFAs is to balance respect for existing contractual arrangements against the need for uniform (or at least not unduly discriminatory) treatment, whether the issue is scheduling,

[1] Transmission Line Loading Relieve rules developed by the North American Electric Reliability Council. TLR curtailments are used to "unschedule" the grid when a regional security coordinator determines that flows from accepted schedules would violate transmission security limits. TLR rules are implemented by Control Area operators, who are often, but not always, transmission owners.

transmission pricing or the elimination of pancaked rates.[2] As in other cases where new RTOs have assumed operational control of transmission from existing transmission owners, some changes in how these contracts are implemented are unavoidable, because operational control of the transmission referenced in the contracts has already passed from one transmission provider (the original TO) to a different transmission provider (in this case, the Midwest ISO). As the sole transmission provider, the ISO must now perform many of the system operational functions that would have fallen to the TO had the TO not become a member of, and ceded operational control of its transmission to, the Midwest ISO. It is my understanding that parties to GFAs in the Midwest generally accept at least the need to recognize the Midwest ISO as the exclusive transmission provider for the Midwest ISO-controlled grid.

In addition, there are other changes in implementation that, as a practical matter, will be necessitated by the change in how transactions are handled under the current Midwest ISO OATT compared to how they will be handled under the proposed Tariff. These generally involve matters of physical scheduling of transactions to ensure that the Midwest ISO properly accounts for these transactions as part of its short-run reliability functions. I discuss these necessary changes later in my testimony and explain why the changes are essential for both reliability and other reasons and in the public interest.

[2] *Regional Transmission Organizations*, Order No. 2000, FERC Stats. & Regs. [Regs. Preambles 1996-2000] ¶ 31,089 at 31,205 (1999), *on reh'g*, Order No. 2000-A, FERC Stats. & Regs. ¶ 31,092 (2000), *petitions for review dismissed sub nom., Public Utility Dist. No. 1 of Snohomish County, Wash. v. FERC*, 272 F.3d 607 (D.C. Cir. 2001); *Southwest Power Pool, Inc*., 106 FERC ¶ 61,110 (2004) ("*SPP RTO Order"*).

Q. ARE THERE ADDITIONAL CHANGES IN HOW GFA TRANSACTIONS ARE TREATED FINANCIALLY THAT WOULD BE DESIREABLE?

A. Yes. In addition to meeting the uniform "physical" scheduling requirements, other changes would be desirable to allow GFA transactions to be treated financially in the same way that other transactions and parties will be treated when the Midwest ISO implements its Tariff. These changes would conform the practices envisioned in the original GFAs with the more efficient transmission pricing approaches proposed in the Tariff. The goal would be to have all transactions, including GFA transactions, subject to the same efficient incentives that users will have under the Midwest ISO Tariff, thereby encouraging more efficient decisions related to choice of generation, scheduling and grid use, dispatch and investments. Eventually, having all transactions in the Midwest handled comparably under these market-based mechanisms would be beneficial to the region. But however desirable these changes may be, whether these changes should be imposed on parties with pre-existing contracts is a different question and requires further consideration, given the rights and obligations agreed to under those contracts.

Q. WHAT PRINCIPLES AND OBJECTIVES WOULD YOU RECOMMEND WHEN DECIDING HOW TO HANDLE GFA TRANSACTIONS?

A. I believe there is a hierarchy of preferred outcomes based on principles of economic efficiency and providing comparable, non-discriminatory transmission service. First, there are substantial benefits to be achieved if all parties that use the Midwest ISO grid are treated in a comparable manner and are subject to the efficient incentives provided by the LMP-based Tariff proposed by the Midwest ISO. For these reasons, voluntary

conversion of the GFAs to revised agreements consistent with the Midwest ISO Tariff should be preferred and encouraged.[3]

Where voluntary conversion does not occur, there is a clear next-best solution that requires one of the GFA parties, typically the TO, to arrange for transmission service under the Midwest ISO Tariff on behalf of the GFA customer and be financially responsible for any LMP-based Tariff charges and settlements occasioned by the GFA transactions, while continuing to honor its contractual commitments to the GFA customer. Under this approach, the TO/scheduling party would also be entitled to receive an allocation of Financial Transmission Rights ("FTRs") and any other benefits of the Tariff.

There are other possible approaches that depart even further from full conformance with the Midwest ISO OATT and Tariff, and they become progressively more problematic. I discuss some of these possibilities and their implications, but it is important to emphasize that these more problematic approaches are not offered in the Midwest ISO OATT or Tariff. Given these problems, I concur with the Midwest ISO's decision and recommend that these other approaches not be considered by the Commission. Instead, at a minimum, certain conforming changes relating to physical scheduling requirements should be applied to all GFA transactions for reliability reasons; this minimum level of conformance with the Tariff is both necessary and in the public interest, for reasons I discuss later in my testimony.

[3] FERC has expressed a similar preference for voluntary conversion with respect to other RTO applications. See, e.g., *SPP RTO Order*, 106 FERC at P 108.

Q. IF VOLUNTARY CONVERSION DOES NOT OCCUR, WHY IS THE SECOND APPROACH THE "NEXT-BEST" SOLUTION?

A. A principal goal should be a system in which those who make decisions to use the grid face efficient incentives that reflect the costs their usage imposes on the grid. That would encourage efficient grid use and support a more efficient use of generation and transmission resources. Applying this principle to all grid users would then ensure comparable, non-discriminatory service to all parties, consistent with the Commission's mandates. Ideally, we would want the transmission customer on whose behalf the GFA transactions were implemented to be subject directly to the efficient incentives of the Tariff, including exposure to LMP-based energy and transmission usage charges. Faced with a system that charged (or paid) each grid user the marginal costs (or benefits) that each grid use imposed on the system, the customer would then have the correct incentives to schedule efficiently, to use the grid (or not) when it was economic (or not) to do so, and to contribute to or rely on the Midwest ISO's economic dispatch when appropriate. With marginal cost pricing applied to these choices, there would be no cost shifts either way between GFA parties and other parties using the grid. Thus, in addition to the efficient incentive properties, this approach would support the Commission's goal of comparable, non-discriminatory transmission service for all grid users.

All other things being equal, we would want the party that is financially responsible for each decision affecting grid use to see the right incentives at the margin. Voluntary conversion by the transmission customer would achieve these objectives.

In the absence of voluntary conversion, the next best solution would be to have at least the TO acting on behalf of the GFA customer face similar incentives for efficient

scheduling, grid use and dispatch when defining schedules to serve the GFA customer. Under this next-best approach, GFA *transactions* would be subject to the transmission usage charges of the Tariff (for which the TO would be responsible), even if the GFA customer were subject to the pricing terms of the GFA in its dealing with the TO. The TO would submit schedules in the day-ahead energy market reflecting the TO's best estimate of the expected transmission usage under the GFA, given the TO's knowledge of the transmission customer's intentions and its own experience and judgment. The TO would be financially responsible for any day-ahead transmission usage charges and also responsible for any real-time deviations between the day-ahead schedules it submitted and the real-time transmission usage by the GFA customer (including deviations by the supplier from day-ahead injection schedules). Giving the TO the financial responsibility for both its day-ahead actions and any real-time deviations would give the TO an incentive to schedule efficiently. Further, the TO would have the flexibility to determine which day-ahead schedules to submit, including virtual schedules if it chose, giving the TO the ability to hedge the expected real-time usage, and thus reducing its financial exposure to real-time deviations and prices.

As the entity responsible for paying for any congestion and marginal losses associated with the schedules it submitted, the TO would also be entitled to receive an allocation of FTRs and a proportionate share of any rebates from the marginal losses pool. This arrangement would make the TO responsible for selecting the FTRs that it thought best hedged its congestion costs, once again matching the entity responsible for making decisions with the entity responsible for the financial consequences of those decisions. In the absence of voluntary conversion, in which the transmission customer

itself would face these incentives, no other entity except the TO would have the same incentives to do the job of scheduling and risk management as well.

In effect, GFAs would then be treated like any other contract outside the Midwest ISO market, and the necessary scheduling of GFA transactions would be handled by the TO within the Midwest ISO market rules. At the same time, the approach preserves for the GFA customer the value of its contract, but without providing the customer with additional rights under the contract beyond those inherent in the firm physical transmission rights provided under the GFA.

Q. IS ECONOMIC EFFICIENCY THE ONLY REASON FOR PREFERRING THESE ALTERNATIVES FOR TREATING GRANDFATHERED AGREEMENTS?

A. No. A second goal would be to minimize cost-shifting and uplift charges. One of the common features of either of these methods is that the allocation of FTRs for the GFA contracts would be determined *ex ante* at the same time as the allocation of other FTRs. The FTR allocation would be either to the GFA customer or the TO. The allocation could be evaluated for simultaneous feasibility with all other FTRs in order to preserve revenue adequacy. Any other method that involves *de facto* allocation of FTRs for GFA contracts after the initial allocation to other parties would complicate the estimation of transmission capacity and lead to over or under allocation of that capacity. The net effect would be either an under allocation of FTRs to other parties, as the Midwest ISO carves out capacity it estimates might be needed later for the GFAs, or a possible substantial over allocation of FTRs that would result in revenue inadequacy and an increase in uplift payments.

Q. HOW DOES THE NEXT-BEST APPROACH SQUARE WITH THE NOTION OF HAVING "GRANDFATHERED" AGREEMENTS?

A. When an RTO becomes the transmission provider and takes over operational responsibilities from an existing TO, there are two very different ways to interpret what that transfer of responsibility means for the relationship between the existing TO and the RTO. One interpretation is to assume that the Midwest ISO steps into the shoes of the TO and assumes whatever responsibilities the TO had with respect to transmission service in dealing with the TO's pre-existing transmission customers. This view effectively makes the RTO function as though it were a party to the GFA, with the RTO becoming like the TO under the contract. Under this view, the RTO must now implement the existing contract terms and conditions as written, providing transmission service in the same way as envisioned by the GFA, and assuming both the contract risks and obligations. This view of the Midwest ISO/TO relationship is consistent with proposals that require the RTO to "carve out" sufficient transmission capacity to cover whatever transmission usage the GFA customer is entitled to under the GFA, effectively treating any GFA transactions outside the Tariff and reducing the amount of the grid subject to the Tariff.

An alternative view that appears to be more consistent with the Commission's long-held goals is that the RTO does not become a party to the GFA. Instead, the RTO is the independent transmission provider for the TO, providing transmission service and market support to accommodate the GFA and any other transactions as defined by the TO. In the absence of voluntary conversion, the TO is still the responsible party for arranging and paying for whatever transmission service is needed under the RTO tariff to

honor the TO's obligations and terms of the GFA. Under this view, the RTO is not obligated to implement the existing contract terms and conditions as written but only obligated to provide transmission service under its tariff, along with Tariff market support for that transmission service, as the accepted transmission provider for the TO and other parties alike. And the TO must honor the transmission provider's tariffs, including the Tariff, which includes being responsible for any market-based usage charges, as well as being entitled to an allocation of FTRs and marginal losses rebates. This view of the Midwest ISO/TO relationship is consistent with the "next-best" solution describe above and treats GFA *transactions* like any other transaction within the Tariff, while treating the GFA *itself* like any other contract "outside" the market.

Q. HOW WOULD YOU EVALUATE THE FIRST PERSPECTIVE OF VIEWING THE MIDWEST ISO AS SUBSTITUTING FOR THE TO AND THUS RESPONSIBLE FOR IMPLEMENTING THE GFA TERMS AND CONDITIONS?

A. That interpretation leads to the Midwest ISO stepping into the shoes of the TO. If carried to one extreme, this could lead the Midwest ISO to begin functioning more like a Market Participant than a neutral market operator, with the temptation to use its unique position to influence market outcomes. The Midwest ISO, not the TO, would need to decide which schedules to anticipate from the GFA customers and how best to manage the financial risks of exposure to congestion charges (or, in the case of the Midwest ISO, exposure to FTR revenue shortfalls). Equally important, this approach could in some cases give the GFA customer expanded profit opportunities that it would not have under its GFA. These opportunities could arise if the GFA customer were permitted to (a) participate without restriction in the Midwest ISO Day-Ahead Energy Market; (b) take

positions in that market through offers to sell and bids to purchase at likely GFA schedule locations;[4] and (c) schedule its physical transmission usage in real-time without any LMP-related costs. Having stepped into the shoes of the TO, the Midwest ISO would be obligated to accommodate these physical schedules while giving the GFA customers incremental benefits from its market actions, which they could gain either through capturing the value of firm transmission rights even when the rights were not exercised or through capturing arbitrage profits in the Midwest ISO markets when operating outside the Midwest ISO scheduling rules. In effect, putting the Midwest ISO in place of the TO would in effect expand the contract to give further benefits to the customer and shift costs from the TO. Depending on how the rules would operate in the hypothetical, shifting the burden to the Midwest ISO could create reliability and additional gaming opportunities.

Q. HOW WOULD YOU DESCRIBE THE MIDWEST ISO'S PROPOSED TREATMENT OF GFA TRANSACTIONS?

A. For both historic and policy reasons described in my testimony, the Midwest ISO has concluded that it cannot impose mandatory conversion to full Tariff service, nor can it impose a "next-best" approach on unwilling parties. The Tariff allows GFA parties to convert their agreements to full Tariff service voluntarily. In addition, the Midwest ISO has chosen to offer GFA parties who do not choose voluntary conversion a choice of

[4] Selling energy at one location and purchasing energy at another location is the equivalent of using transmission between the two locations and paying a usage charge equal to the difference in locational prices. As a participant in the Midwest ISO Day-Ahead and Real-Time Energy Markets, a GFA customer could, in some cases, use this equivalent strategy for arbitrage advantages while implementing its actual GFA schedules in real time without paying LMP-based usage charges. If the GFA customer were also allocated FTRs, it could also realize the economic value of its firm rights by scheduling less than its GFA entitlement and effectively selling back any transmission it did not use in real time. This would not be possible under the GFA's physical rights alone. The point is that an LMP/FTR-based market provides many opportunities for beneficial trading and arbitrage – an argument for conversion -- but that structure also provides opportunities for harmful arbitrage, cost shifting and unjust enrichment if a party can use the structure's flexibility without being subject to the full financial consequences of its choices.

three options – Options A, B, or C – which I describe in more detail later. Essentially, Option A is virtually the same as the "next-best" approach I describe above, so that "next-best" treatment is available to those who choose it.

It is my understanding that the Midwest ISO expects, however, most GFA parties to select Option B, which is another hybrid approach. This Option B approach will require one of the GFA parties to be the scheduling entity for purposes of complying with the Midwest ISO's physical scheduling rules and also requires that the GFA parties designate who will be the party responsible for the LMP-based Tariff transmission usage charges. Option B, however, then provides rebates that make that party financially indifferent to the Tariff transmission usage charges for any GFA transactions scheduled in the Day-Ahead Energy Market.

Option C would, like Options A and B, make one of the parties responsible for scheduling under the OATT and Tariff and make one of the parties responsible for Tariff transmission usage charges. Option C, however, would not seek to make the party financially indifferent, nor would it allow the party to participate in the allocation of FTRs. Under Option C there would be no refund of marginal losses on individual transactions of the type contemplated for Option B, but the parties would receive allocations from the proposed marginal losses pool applicable to all market participants.

Q. DOES THE "OPTION A" APPROACH REPLICATE THE EXISTING GFA BENEFITS AND CONDITIONS?

A. Yes. The success of the approach under Option A would depend on the allocation of FTRs to the TOs. However, the basic obligations and charges to the GFA customer continue under the GFA, and the TO in turn coordinates the use of the GFA under the

new Tariff structure. However, Option A provides a framework for achieving the goal of supporting the Tariff and protecting customers under the GFAs while mitigating any cost-shifting or increases in uplift.

Q. GIVEN THE TWO CONTRASTING APPROACHES YOU DESCRIBED EARLIER, WHERE DO YOU PLACE THE PROPOSED OPTION B, THE APPROACH THE MIDWEST ISO EXPECTS MOST PARTIES TO CHOOSE?

A. Option B appears to be a hybrid. On the one hand, it requires the GFA parties to designate a scheduling entity that must comply with all of the Tariff's physical scheduling requirements. Compliance with the physical scheduling requirements would appear to be necessary under any reasonable approach. Further, to preserve the transmission rights in its GFA, the scheduling entity must schedule expected GFA transactions in the Day-Ahead Energy Market, and the Midwest ISO will accommodate those transactions, with redispatch if necessary, as long as there are sufficient dispatch offers to accommodate the transaction and achieve a feasible dispatch. These transactions would be nominally subject to the Midwest ISO tariff's transmission usage charges, and deviations from the day-ahead schedules would be subject to real-time LMPs, as would occur under the "next-best" approach.

On the other hand, based on descriptions in the Tariff and developmental documents,[5] the Midwest ISO's Option B approach is designed to make the GFA parties financially indifferent to the LMP-based usage charges for any schedules submitted in the

[5] Tariff, at section 38. November 24, 2003 Grandfathered Agreement Meeting presentation by the Midwest ISO, http://www.midwestiso.org/meeting_agendas/gfa/GFA%20Meeting%20112403.pdf; January 21, 2004 Grandfathered Agreements Meeting presentation by the Midwest ISO, http://www.midwestiso.org/meeting_agendas/gfa/gfa_01212004.zip; January 28, 2004 Grandfathered Agreement Meeting presentation by the Midwest ISO, http://www.midwestiso.org/meeting_agendas/gfa/gfa_01282004.zip; see

Day-Ahead Energy Market. It does this by rebating any congestion charges associated with day-ahead schedules and rebating the difference between marginal and average losses. In effect, this is equivalent to awarding the GFA parties FTRs for that day exactly equal to the day-ahead schedule. Since this occurs after the award of other FTRs, the approach will force the Midwest ISO to define *ex ante* the FTRs that would best hedge the GFA transactions against congestion charges (and to assume these FTRs in the FTR allocation process)[6] and to create another mechanism to ensure the GFA transactions pay net only for average losses. The end result is that neither GFA party would face the LMP-based incentives for efficient scheduling, grid use, and dispatch for the formal submission of its day-ahead schedules. In addition, to limit undue profit opportunities by the GFA customers, the approach also attempts to mimic the "use-it-or-lose-it" properties of the GFA's firm physical rights, so that neither party receives any FTR settlement value for any rights it does not schedule. However, as discussed further below, there is a simple scheduling practice to get around this attempt to preserve the "use-it-or-lose-it" feature.

Hence, these mechanisms for achieving financial indifference will create the likelihood that the Midwest ISO will face periods of both FTR revenue surpluses or shortfalls, depending on how well the FTRs that Midwest ISO assumes for the GFA transactions during the allocation process match the actual transmission usage scheduled

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also, Midwest ISO Presentation Materials for Pre-filing Conference, March 10, 2004, http://www.midwestiso.org/meeting_agendas/ttc/Meeting%20Materials%20for%20Technical%20Conference.ZIP.

[6] The Midwest ISO would define these FTRs and assume them in the FTR allocation process, but it would not allocate these FTRs to the GFA parties. The GFA parties would not otherwise participate in the FTR allocation process.

in the Day-Ahead Energy Market. I discuss these implications in more detail later in my testimony.

Q. DOES THE OPTION B APPROACH RELICATE THE EXISTING GFA BENEFITS AND CONDITIONS?

A. No. In effect, the financial implications of Option B would create added benefits for both parties to the GFA. For the customer, the full "use-it-or-lose-it" feature of physical schedules would be eliminated or substantially reduced. Furthermore, the chance of a curtailment under TLR rules would be reduced. And for the TO the cost of any redispatch needed to accommodate firm transactions under the GFA would shift to the Midwest ISO (and hence to those who pay the uplift charges).

A customer under the GFA could avoid the "use-it-or-lose-it" feature of its physical transmission right under the existing GFA through the simple procedure of always scheduling its full entitlement day-ahead whenever it anticipates real-time congestion. The day-ahead schedule would be made without cost under Option B, but for any reduced physical flow in real time the GFA customer would be paid for the unused transmission schedule through the settlements in the real-time (balancing) energy market. Thus the Tariff Option B provides a mechanism for capturing additional benefit beyond that of the current GFA.

Further, under the existing GFA, whenever the system is constrained the customer might be subject to curtailment. However, with the Tariff the redispatch service provided by the Midwest ISO should reduce or substantially eliminate the need for TLRs except for the cases when there are no bids available in the real-time market. This is one of the

inherent efficiencies under the Tariff, and it inevitably provides additional benefits to the GFA customer compared to the pre-Tariff rights.

When the system is constrained, there would necessarily be redispatch required to maintain firm transmission rights under the GFA. The cost presently would fall to some degree on the TO. However, under Option B there is no redispatch cost imposed directly on the TO as this cost is socialized through a combination of uplift payments and reduced allocations of FTRs to other parties. The TO loads would bear a proportionate share of the resulting uplift.

In effect, therefore, the Option B approach goes beyond simply preserving rights and benefits under the existing GFAs. Option B creates added benefits for the GFA parties and shifts the corresponding costs onto other non-GFA parties in the market.

Q. DID MIDWEST ISO CONSIDER REQUIRING GFA PARTIES TO USE THE "NEXT-BEST" APPROACH YOU DESCRIBE ABOVE?

A. Yes. In its earlier Tariff filing of July 25, 2003, the Midwest ISO both encouraged voluntary conversion to market-based OATT service and proposed the "next-best" approach for GFAs that did not voluntarily convert.[7] It is my understanding, however, that this proposal met with substantial opposition from various stakeholders, who pointed out that both the original Midwest ISO founding agreements and prior Commission approvals had indicated that GFA transactions would not be subject to substantial changes in treatment occasioned by the development of a Midwest ISO OATT and

[7] Midwest Independent Transmission System Operator, Inc., Initial Filing of Open Access Transmission and Energy Markets Tariff, Docket No. ER03-1118-000, filed July 25, 2003, at 22-23; Prepared Testimony of Ronald R. McNamara, Docket No. ER03-1118-000, filed July 25, 2003, at 31-35 ("McNamara Testimony").

Tariff.[8] In subsequent guidance provided by the Commission, it also became clear that the Midwest ISO should fashion a proposal that would garner substantial support from affected stakeholders.[9] After FERC granted the Midwest ISO's October 17, 2003 motion to withdraw the original Tariff, the Midwest ISO was left with the need to develop a compromise that would garner support and continue to honor these prior commitments in some way that did not unduly undermine the need to encourage voluntary conversion and without seriously undermining the principles and framework of the Tariff.

I describe and analyze the Midwest ISO proposal in more detail in Part IV of my testimony.

III. HOW THE TARIFF WILL CHANGE HOW ENERGY TRANSACTIONS ARE HANDLED AND WHAT THAT MEANS FOR GFAS.

Q. DOES THE PROPOSED MIDWEST ISO TARIFF SIGNIFICANTLY CHANGE THE WAY IN WHICH TRANSACTIONS WILL BE HANDLED IN THE MIDWEST?

A. Yes. There are important changes in both the formal treatment of transactions and the financial implications when those transactions use the Midwest ISO grid. While the traditional features of transmission service will continue under the OATT, the addition of the Tariff will significantly improve how transmission service is supported in the Midwest.

[8] Agreement of Transmission Facilities Owners to Organize the Midwest Independent Transmission System Operator, Inc., A Delaware Non-stock Corporation, As Accepted by the Federal Energy Regulatory Commission; *Midwest Indep. Transmission Sys. Operator, Inc.*, 84 FERC ¶ 61,231 (1998) (subsequent history omitted).

[9] *Midwest Indep. Transmission Sys. Operator, Inc*., 105 FERC 61,145 at P 60 (2003).

Q. PLEASE SUMMARIZE THE PHYSICAL CHANGES IN HOW MIDWEST ISO WILL HANDLE TRANSACTIONS COMPARED TO HOW SERVICE IS PROVIDED TODAY.

A. These changes are generally described in Dr. Ron McNamara's testimony, and they center around the transfer of additional operational responsibility from the existing TOs and local Control Area operators to the Midwest ISO as regional transmission provider and regional system operator. Perhaps the most significant change involves the introduction of a regionally coordinated, bid-based, security-constrained economic dispatch to manage congestion and support transactions across the Midwest ISO-controlled grid.

The introduction of a bid-based regional dispatch to support transactions will change how transmission schedules are accommodated in the Midwest. While advance requests for transmission service will still be handled as requests for network integration service or point-to-point service and differentiated between "firm" or "non-firm" physical reservations as before, actual transmission schedules submitted in the Day-Ahead and Real-Time Energy Markets will be analyzed with a Network Model and accommodated by the Midwest ISO's regional security-constrained dispatch, provided the transmission user is willing to pay a transmission usage charge defined by LMP. The transmission usage charge is not intended as a substitute for the recovery of transmission revenue requirements; those requirements will still be recovered as now through the transmission rates applied to network and point-to-point customers (including any pricing terms in the GFAs). Instead, the Tariff's transmission usage charge includes the marginal costs of any redispatch that is needed to accommodate each scheduled transaction and the

marginal cost of losses associated with each transaction. The Midwest ISO's regional dispatch will also cover imbalances or deviations from those schedules, thus providing a real-time balancing market to support bilateral trading, just as required in the Commission's Order No. 2000. Usage charges and market sales and purchases will be settled at prices defined by LMP, with FTRs providing the financial equivalent of today's "firm" transmission reservations. In essence, the use of a regionally coordinated, bid-based dispatch to support schedules, and payment of a transmission usage charge reflecting congestion and losses are similar to the ways that transactions are handled today within the New York ISO and ISO-New England, and for congestion in PJM. Hence, moving to this manner of supporting transmission service is an essential step in the evolution to a joint and common market between the Midwest and the Eastern ISO/RTO regions.

Q. WILL TRANSACTIONS NEED TO BE SCHEDULED WITH THE MIDWEST ISO?

A. Yes. All transactions will be scheduled with the Midwest ISO. Transactions undertaken under the GFAs will need to conform to the common "physical" requirements for scheduling transactions on the Midwest ISO grid.

Q. WHAT DO YOU MEAN BY "PHYSICAL REQUIREMENTS FOR SCHEDULING TRANSACTIONS?"

A. Every system operator must have certain kinds of information to operate the grid reliably. In addition to extensive information about the status of the grid and each of its component facilities, this information includes data concerning (1) injections, including the amounts and locations where energy and reactive power are being (or could be)

generated and (2) similar data regarding expected and actual withdrawals. The system operator needs to know the schedules for all net injections and withdrawals at each location to be able to determine the expected flows during each dispatch interval.[10] The operator must also have additional information concerning generator start-up times, ramping rates, minimum and maximum generation levels, minimum run times, and other data that may affect flows and/or the ability to dispatch or redispatch generation if the need arises. Comparable data from dispatchable loads, if any, is also necessary.

Today, much of this scheduling information is exchanged (or through established practice, is understood) between the GFA parties, or may be known internally by the TO as both transmission provider and generation supplier. As these functions become coordinated by the Midwest ISO on a regional basis, however, this information will have to be provided in a more consistent and transparent manner to the Midwest ISO, using common forms, data requirements and deadlines established by the Midwest ISO. This will necessarily require that one or the other party to each GFA transaction make explicit and provide to the Midwest ISO what may only have been implicit and/or known only between the GFA parties. Providing this information to the transmission provider that is responsible for dispatch and system reliability is not an option; it is a necessity.

Q. DO THE MIDWEST ISO OATT AND TARIFF PROVIDE THAT GFA PARTIES SUBMIT THIS NECESSARY PHYSICAL SCHEDULING INFORMATION?

A. Yes, they do. In general, the OATT and Tariff will require that all grid users submit the same essential scheduling information to the Midwest ISO for its use in scheduling transmission use and arranging the bid-based, security-constrained, economic dispatch

[10] Under the Midwest ISO's Tariff, the dispatch interval will be hourly for the day-ahead energy market and every five minutes for the real-time market.

that will accommodate those uses within the security limits of the transmission system. Out of necessity, GFA transactions will be treated the same way with respect to physical scheduling requirements as all other transactions that will be using the Midwest ISO-controlled grid. In addition, the Midwest ISO will require that the GFA parties designate which party will be responsible for meeting the Midwest ISO scheduling requirements and the party that will be subject to any Midwest ISO-related charges that may apply to the GFA transactions.

Q. DOES THIS MEAN THAT GFA TRANSACTIONS MUST ALSO IDENTIFY INJECTION AND WITHDRAWAL LOCATIONS?

A. Yes. As transmission provider and coordinator of the regional security-constrained dispatch, the Midwest ISO will need to know the injection and withdrawal locations for all transactions that it must accommodate on the grid it controls. Whatever degree of locational precision the Midwest ISO requires to implement its scheduling and dispatch in a reliable manner should be the minimum required and should be the same for all parties and transactions.

Q. SHOULD GFA TRANSACTIONS ALSO HAVE TO MEET THE SAME SCHEDULING DEADLINES AS OTHER TRANSACTIONS?

A. Yes, and for basically the same reasons. To the extent that GFA parties choose to use the Midwest ISO Day-Ahead Energy Market (the proposed Midwest ISO treatment of GFA transactions will encourage GFA parties to submit transactions in the day-ahead energy market), the GFA parties will need to schedule their transactions by the same deadlines that apply to all other parties participating in the Day-Ahead Energy Market. The transmission provider, whether it is the Midwest ISO or remains the original TOs, must

know what transactions it must accommodate on the grid and what it must do through the security-constrained dispatch to accommodate those transactions while keeping flows within reliability limits. If the Midwest ISO requires other parties to submit their offers, bids and schedules for the Day-Ahead Energy Market by, for example, 9:00 a.m. the day ahead, so that it can perform security analysis and arrange the day-ahead security-constrained dispatch and unit commitment, then it also needs to have the same information about GFA transactions by the same time from GFA parties. Otherwise, the Midwest ISO would be limited in its ability to arrange a security-constrained economic dispatch that accounted for and accommodated all expected grid uses. If reliability is to be maintained, the scheduling system should provide a framework and incentives to reflect the best information available in the day-ahead and real-time.

Q. WHAT WOULD HAPPEN IF GFA PARTIES WERE EXEMPT FROM MEETING THE MIDWEST ISO DAY-AHEAD SCHEDULING DEADLINES?

A. The consequences would be adverse and would depend on how the Midwest ISO responded to the uncertainty created by not knowing what to expect from GFA transactions.[11] Under one possibility, the Midwest ISO could assume that if GFA parties did not schedule transactions by the deadline for the Day-Ahead Energy Market, they would not be using the grid. No transmission would be reserved in that market for their possible transactions, and the Midwest ISO would arrange its day-ahead security-constrained dispatch as though such transactions would not create flows, would not create

[11] This concern is greater when any significantly portion of the grid's capacity could be used by GFA transactions. While the exact amount of usage required to support the GFA transactions is difficult to judge, Midwest ISO officials have developed estimates that range between 20 and 40 percent of the grid capacity, depending on conditions and assumptions about the degree of simultaneous usage. *See* McNamara Testimony (Exhibit No. ___ (MISO-4)). I have not evaluated these estimates, but even the smaller percentage would pose the types of concerns discussed here.

or increase congestion and would not affect the need for redispatch. If the GFA parties subsequently scheduled transactions, it would increase flows, could create or increase congestion, and could affect the need for redispatch. Day-ahead schedules that were thought to be feasible could now be infeasible. In real-time, the Midwest ISO would still have to deal with actual congestion, but the opportunity to manage this congestion day ahead would have been compromised. At best, other Market Participants might have the incentive to submits additional bids in the day-ahead market to arbitrage expected differences with the real-time settlements. But the other Market Participants would not have the information available to the GFA parties. Absent very good rules and pricing incentives, these arbitrage opportunities might not eliminate the difficulties created by the different treatment of GFA schedules.

Under another possibility that allowed GFA parties to be exempt from the physical scheduling rules, the Midwest ISO could (1) assume that some expected level of GFA transactions would eventually be implemented; (2) try to estimate the amounts, times and locations of those transactions; and (3) endeavor to reserve or "carve out" physical transmission capacity to accommodate those expected transactions as part of the day-ahead process. If the Midwest ISO forecast correctly, then the only consequence might be the administrative inconvenience and costs of trying to accommodate schedules at different times from different parties. But if the Midwest ISO did not forecast correctly, as could easily and often be the case, then the consequences could be more serious, with potential financial impacts on other parties and, in the extreme, reliability impacts on the system as a whole.

Q. PLEASE DESCRIBE THE CONSEQUENCES FOR EITHER UNDERESTIMATING OR OVERESTIMATING GFA GRID USE.

A. If the Midwest ISO underestimated the amounts that GFA parties eventually scheduled, then the Midwest ISO would likely misjudge the degree (and location) of congestion created by day-ahead schedules. If the eventual GFA schedules exacerbated congestion, the day-ahead security-constrained dispatch would not fully accommodate all schedules, day-ahead schedules would thus be infeasible, and additional redispatch would be required in real time. If the eventual GFA schedules produced counter-flows that reduced day-ahead congestion, then the day-ahead redispatch could go too far, relieving "phantom congestion" that did not actually exist, and imposing unnecessary day-ahead redispatch costs on other parties.

Conversely, if the Midwest ISO overestimated the amounts that GFA parties eventually scheduled, then the Midwest ISO would also misjudge the amount of congestion created by day-ahead schedules and hence the level of redispatch required to relieve the congestion and accommodate the schedules. Again, depending on the direction of flows created by the GFA schedules, the ISO could once again wind up with infeasible day-ahead schedules (or conversely, with an inefficiently underutilized grid), or increased need for real-time redispatch, and/or unnecessary costs imposed on other parties.

All of these adverse impacts could be reduced if GFA parties were required to schedule their transactions under the same physical scheduling rules and deadlines as all other parties using the Midwest ISO grid.

Q. IF GFA PARTIES WERE ALLOWED TO SCHEDULE THEIR TRANSACTIONS AT ANY TIME WITHOUT FINANCIAL CONSEQUENCES, WOULD THAT CREATE OPPORTUNITIES FOR MARKET MANIPULATION?

A. Yes. This possibility exists for any party that is allowed to participate in the market and submit schedules outside the Midwest ISO's common scheduling rules without financial consequences.

Q. WOULD EXEMPTING GFA TRANSACTIONS FROM THE DAY-AHEAD SCHEDULING DEADLINES ALSO UNDERMINE THE MIDWEST ISO'S RELIABILTY UNIT COMMITMENT PROCESS?

A. Yes. The main purposes of a reliability unit commitment process are to (1) optimize unit commitment decisions so as to achieve a more efficient (lower cost) commitment of resources, (2) ensure that there are sufficient resources committed in advance to reliably meet the Midwest ISO's expectations of real-time loads, and (3) lower commitment risks for generators. It is not clear how the Midwest ISO could accomplish these commitment objectives if some significant portion of the load and generation in the Midwest ISO region were not required to indicate their intentions to generate and consume energy under the same rules and at the same times as everyone else. Depending on how the Midwest ISO handled this large uncertainty, Midwest ISO could either commit too much or not enough generation to meet the next day's loads, with resulting adverse consequences either for real-time reliability or for those who had to pay the excess commitment costs.

Q. PLEASE SUMMARIZE THE FINANCIAL CHANGES IN HOW MIDWEST ISO WILL HANDLE TRANSACTIONS.

A. The principal changes, as described in the testimony of Dr. Ron McNamara, involve the use of LMP to manage and price congestion and losses, and the use of FTRs to hedge congestion costs. Under the proposed Midwest ISO Tariff, the Midwest ISO will administer bid-based spot markets in real time (balancing market) and day ahead (Day-Ahead Energy Market) and price energy and transmission usage bought and sold in those markets at market-clearing prices defined by LMP. Transmission schedules will pay a transmission usage charge defined as the difference between the LMP at the sink and the LMP at the source, making the treatment of "bilateral" transactions financially equivalent to simultaneous sales at the source and purchases at the sink at the respective LMPs. Deviations (or imbalances) from schedules committed to in the Midwest ISO's Day-Ahead Energy Market will be settled at real-time LMPs. The LMPs will reflect not only the marginal cost of any redispatch needed to accommodate scheduled transactions within security limits (the marginal cost of congestion) but also the marginal cost of losses. The Midwest ISO will allocate FTRs, initially in the form of "obligations," to market participants, allowing the FTR holders to hedge the congestion component of LMP-based usage charges and/or spot sales and purchases.

The use of LMP will create settlement surpluses for both congestion and marginal losses. The settlement surplus for congestion will be used to fund the payments to FTR holders, with the Midwest ISO settling FTRs in the Day-Ahead Energy Market based on day-ahead LMPs. The Midwest ISO's proposed mechanism for allocating FTRs is described in the testimony of Dr. Paul Gribik. The settlement surplus created by the use

of marginal losses will be allocated back to Market Participants through a residual losses rebate mechanism based on sub-regional losses pools. This mechanism is described in the testimony of Dr. Ron McNamara.

Q. WOULD THE APPLICATION OF LMP-BASED MECHANISMS TO GFA TRANSACTIONS BE BENEFICIAL TO THE MIDWEST?

A. Yes. As the Commission has consistently recognized in Order No. 2000 and in many RTO-related decisions, the use of LMP provides substantial benefits over any other system for managing and pricing congestion, allocating and pricing transmission use and pricing spot energy. The reasons are explained in Dr. Ron McNamara's testimony, and I have testified to this Commission on several occasions about those benefits.[12] To summarize, (1) using LMP supports an efficient, economic dispatch, thus promoting the efficient utilization of generation to serve loads at the lowest costs, consistent with reliable operations; (2) it aligns market prices with reliable dispatch, thus supporting reliability by providing price signals to participants that encourage them to do what the system operators need them to do to maintain reliable operations; (3) it aligns the incentives for transmission use with the marginal cost of redispatch, thus encouraging efficient transmission usage; (4) it efficiently prices redispatch so that redispatch can be offered as a more effective and reliable substitute for the curtailments under TLR; (5) it provides efficient incentives for consumption and demand-side response; (6) it provides efficient incentives for generator investments and siting decisions; (7) in conjunction with the pricing and award of FTRs, it provides efficient incentives for transmission

[12] The Commission recently had occasion to examine and reaffirm the many benefits of using a regionally coordinated, security-constrained economic dispatch priced at LMP. *See* "Initial Decision," issued on March 12, 2004 by ALJ Cowan in Docket No. ER03-262-009, *The New PJM Companies*, 106 FERC ¶ 63,029 (2004).

investments and a benchmark for gauging the economic justification for transmission upgrades; (8) it avoids the strategic bidding ("gaming") to maximize congestion-related side payments that are needed in any non-LMP pricing system; and (9) compared to non-LMP systems, LMP makes more transparent, and reduces the exposure to and profits from, the exercise of market power.[13]

The Commission should recognize the critical importance of preserving these features of the Midwest ISO design and avoid any rules to accommodate the GFAs that would undermine the operation of the market. The Midwest ISO design is intended to preserve the integrity of the real-time market, and make the day-ahead market consistent in terms of its network description, pricing locations, and other features to come as close as possible to capturing the expected conditions in the real system. The various treatments of GFAs proposed by the Midwest ISO differ primarily in the timing and magnitude of the allocation of FTRs, at least in the effect if not the formalities. Hence, without others defects in the rules, the impacts could be limited to cost shifting and uplift outcomes.

Q. WOULD YOU URGE GFA PARTIES TO CONVERT THEIR CONTRACTS TO AGREEMENTS CONSISTENT WITH THE LMP-BASED PROVISIONS OF THE TARIFF?

A. Yes. That would be the best outcome for the Midwest ISO region as a whole, because it would mean that all of the benefits of an LMP/FTR framework would apply to all transmission uses in the region.

[13] I have written extensively on these attributes of LMP (and FTRs). See the articles and papers listed at: http://ksghome.harvard.edu/~.whogan.cbg.Ksg/

The merits of conversion for individual GFA parties would depend on their particular circumstances. In some cases, placing their transactions fully within the LMP/FTR framework of the Tariff would be beneficial to the GFA parties. For example, a GFA transmission customer might well benefit from the ability to acquire redispatch from the Midwest ISO at LMP-based transmission usage charges rather than self provide redispatch or face uneconomic and involuntary curtailment in those cases where TLRs might otherwise apply. In addition, GFA parties would benefit from the scheduling flexibility provided when transmission rights are in the form of FTRs rather than physical rights. With FTRs, the holder of the right receives the full value of the FTRs whether or not the actual schedules match the FTRs. This flexibility could prove helpful to those parties that choose Option B under the Midwest ISO proposals. Under Option B, the GFA parties must designate in advance which scheduling locations they expect to use, and their entitlement to "financial indifference" will be tied to using those scheduling locations. However, if they need to use some other scheduling location to meet their loads (or simply find it more economic to do so), schedules from non-designated locations would not be entitled to Option B treatment. In that event, parties may find that they would have been better off pursuing FTRs to cover their expected transactions and taking advantage of the scheduling flexibility that financial rights afford.

These potential benefits may not prove attractive in all cases. For example, GFA parties with firm rights may believe that their reduced risks of potential TLR curtailments make it unnecessary to voluntarily convert to the LMP-based Tariff. Or they may conclude that they might not receive a sufficient allocation of FTRs to ensure the

financial equivalence of the firm service they now receive.[14] Uncertainties about the total recovery of residual losses might also affect any decision to convert to LMP-based Tariff service. There are likely other cases in which one or the other party enjoys negotiated advantages under the GFA that are preferable to those they might have under a comparable LMP/FTR framework. Without knowing these individual circumstances, there is no way to evaluate the merits of conversion for every case.

Q. SHOULD THE COMMISSION COMPEL GFA PARTIES TO BECOME FULLY SUBJECT TO LMP-BASED TARIFF PROVISIONS?

A. Because this would require a change in the price terms of the GFAs, such a mandatory conversion requirement would be problematic, and could be lengthy and costly, especially if Commission precedent required that that each GFA be individually examined and conversion found to be in the public interest. There are both reliability requirements and financial implications at stake. In my opinion, as long as the GFA transactions meet all of the Midwest ISO's physical scheduling requirements, including common scheduling data and deadlines for the Day-Ahead Energy Market, and then settle any deviations from their day-ahead schedules at real-time LMPs, the Midwest ISO should be able to maintain reliable operations. Further conversion to meet LMP-based Tariff requirements should then hinge on the financial consequences for each GFA, and it is not clear that immediate mandatory conversion of all GFAs can be justified at this time, even if there were general benefits to the Midwest region. A transition period to

[14] The amount of FTRs that could be allocated would be limited to a set that was simultaneously feasible given the capacity of the grid. The simultaneous feasibility test is commonly used by ISOs in LMP/FTR markets to ensure that the set of FTRs allocated to the market participants can be fully funded from the congestion rentals collected in the day-ahead energy market, given the same grid capacity used in the allocation. The Midwest ISO proposes to use such a test when allocating FTRs.

evaluate how well the Midwest ISO OATT and Tariff function given the amount of unconverted GFA transactions would be useful in making this determination at a later date.

Q. BECAUSE FORCED CONVERSION IS NOT AN OPTION, IS THE HYBRID APPROACH PROPOSED BY THE MIDWEST ISO IN THE PUBLIC INTEREST?

A. Yes. As I have explained, in order to operate the Energy Markets efficiently and reliably, the Midwest ISO must be able to account for all flows of energy on the systems it operates. The hybrid proposal allows the Midwest ISO to do this by requiring GFA transactions to meet the common scheduling requirements that apply to all transactions. Because the Midwest ISO hybrid proposal does not require actual modification of the GFAs, the hybrid approach does not require a lengthy, problematic and costly analysis of modification of each contract. Given the Commission's requirements to in effect immunize GFA parties from any costs in any hour and for any day-ahead scheduling decision under the contract, there appears to be no realistic alternative to the Midwest ISO proposals. This creates incremental benefits for the GFAs with the costs appearing in uplift charges. It would not be in the public interest to impose additional constraints on scheduling and market activities in what would likely be a largely futile attempt to limit the expanded benefits under the GFAs, at the risk of creating substantial inefficiencies in scheduling and possible reliability compromises that would affect all Market Participants. As discussed further below, when coupled with effective use of virtual bidding to support the integrity of net day-ahead schedules, the Midwest ISO

proposal is in the public interest as it allows for the efficiency and reliability advantages the Commission and the Midwest ISO intend in the market design.

Q. ARE THERE ADDITIONAL MECHANISMS THE MIDWEST ISO COULD USE TO ENCOURAGE VOLUNTARY CONVERSION TO TARIFF SERVICE?

A. The Midwest ISO proposes to offer FTRs in the form of obligations. GFA parties that are considering full voluntary conversion or the next best approach of accepting FTRs for their GFA financial rights would therefore have to nominate FTR obligations to replace their existing rights. The characteristic of an obligation is that the FTR holder receives a payment for the difference between the congestion component of the sink and source LMPs when that difference is positive, but the holder must pay the difference when the difference is negative. The payment obligation is normally not a problem as long as the FTR holder also implements a corresponding transaction in the same direction as its FTR. In that event, the party will be paid this same difference in LMP congestion for the counterflow provided by its schedule, and this will offset the payment obligation under the FTR. Obligations can thus work well for covering base-load transmission usage, not only because they provide a hedge against congestion in the direction of the FTR but also because the financial risk of incurring FTR charges when congestion is reversed is minimized by the offsetting payments to the party for the corresponding counterflows from fairly predictable base-load generation to loads. However, these risks are greater for less predictable intermediate and peak generation and usage. It is possible to offer different FTRs for different periods, such as peak and off-peak. However, if FTRs do not differ enough for various times over the load duration curve, FTR options might provide a better fit with less risk. The characteristic of FTR options is that when the difference in

the congestion component of the LMPs is negative, the holder of the FTR is not obligated to pay this difference. The Midwest ISO might therefore encourage more voluntary conversion of GFAs or choice of the next best approach if FTR options were offered to help mitigate the financial risks of relying exclusively on obligations for grid usages that are less certain.

As has been true in other RTO regions, initial software limitations can require the Midwest ISO to offer only FTR obligations at first. The reason is that development of a dependable and workable simultaneous feasibility test for FTR options is not a simple matter, and much care should be taken in how this requirement is implemented. If this obstacle can be overcome, it would be useful for the Midwest ISO to offer FTRs in the form of options, as well as obligations.

Q. ARE THERE OTHER MECHANISMS THE MIDWEST ISO SHOULD CONSIDER TO ENCOURAGE VOLUNTARY CONVERSION TO FULL TARIFF SERVICE?

A. Other possible incentive mechanisms might involve some type of subsidy by one group for another's benefit. I have argued that the Midwest region as a whole would benefit from having all GFA transactions under the same LMP-based rules, which would then argue for at least some regional financial backing for mechanisms to encourage parties to convert their GFAs to full Tariff service. I believe such mechanisms should be explored further.

It is important to note that the Midwest ISO's Option B treatment of non-converting GFAs, which effectively makes GFA parties financially indifferent to the application of day-ahead LMP-based settlements, is itself a mechanism that requires other

participants – or at least Load-Serving Entities within each security region (MAIN, ECAR, etc) -- to cover any revenue shortfalls created by applying LMP to GFA transactions while holding them financially indifferent. If the parties that must cover this financial risk are willing to do that, they should also be willing to consider similar mechanisms that make the GFA transactions more directly subject to the incentive properties of LMP. In other words, the Midwest ISO approach of providing a financial backstop for achieving "financial indifference" for GFA parties might not be very different from what it would take to encourage voluntary conversion of GFAs to full, LMP-based Tariff service. Developing this mechanism, however, would require significant stakeholder involvement and would probably succeed only after the parties had some experience with the Optional approaches proposed by the Midwest ISO.

IV. ANALYSIS OF THE PROPOSED MIDWEST ISO TREATMENT OF NON-COVERTED GRANDFATHERED AGREEMENTS

Q. PLEASE DESCRIBE THE MIDWEST ISO'S PROPOSED TREATMENT OF GFA TRANSACTIONS IN CASES WHERE THE GFA PARTIES ELECT TO REMAIN "GRANDFATHERED."

A. The Midwest ISO approach first separates the physical scheduling requirements for GFA transactions from the financial consequences of accommodating those transactions. All GFA transactions will be required to comply with the same physical scheduling requirements that apply to all other transactions. This will require that the parties designate a "scheduling entity" responsible for meeting those requirements, and that entity will then schedule each GFA transaction with the Midwest ISO. For reasons that I discuss in Part II of my testimony, these requirements are essential for maintaining

reliable operations and for performing a security-constrained economic dispatch and day-ahead unit commitment. These requirements are thus clearly in the public interest.

Q. HOW DOES THE MIDWEST ISO PROPOSE TO HANDLE THE FINANCIAL CONSEQUENCES OF GFA TRANSACTIONS?

A. The Midwest ISO proposes to offer non-converting GFA parties a choice between three options: A, B, and C. These options, described in section 38.7.3 of Module C of the Tariff, differ primarily in the extent to which the party that is financially responsible for the GFA transactions under the Tariff is exposed to the Tariff's LMP-based charges.

Q. WHAT HAPPENS IF THE GFA PARTIES CHOOSE OPTION A?

A. Under Option A, either of the GFA parties may elect to take financial responsibility for all Tariff settlements. The responsible entity would be subject to any LMP-based transmission usage charge for each transaction it schedules, including the payment of congestion between the source and sink and the payment of marginal losses. In addition, the party would participate like any other party in the allocation of FTRs and would receive payments (or make payments, if congestion were reversed) for the FTRs it held, providing a hedge against the congestion charges (or payments, if congestion were reversed). Further, the party would also receive its proportional share of rebates from the marginal losses pool, just like other parties. In other words, the GFA transactions would receive the same financial treatment as non-GFA transactions.

Q. HOW DOES "OPTION A" COMPARE TO THE PREFERRED APPROACHES YOU DESCRIBE IN PART II OF YOUR TESTIMONY?

A. If the transmission customer chooses Option A, it is essentially the same as "voluntary conversion" to full Tariff service, but on an annual, reversable basis. The main

difference is that since the threshold choice is whether to convert voluntarily or to remain under GFA treatment and choose between the three options, the transmission customer choosing to remain under GFA treatment but selecting Option A for a year retains the ability to select Options A, B or C in future years, if not full voluntary conversion. Option A thus gives a transmission customer a one year "taste" of what voluntary conversion might mean while retaining its right to return to other optional GFA treatments at least during the transition period. Since this provides an incentive for transmission customers to explore the implications of voluntary conversion, and thus may encourage such conversion, I conclude that it is a reasonable approach and in the public interest.

Q. WHAT IF THE TRANSMISSION OWNER SELECTS OPTION A?

A. If the Transmission Owner selects Option A, it is essentially the same approach as the "next best" approach I describe in Part II. For reasons discussed there, offering parties the option of choosing this approach is also reasonable and in the public interest.

Q. WHAT HAPPENS IF THE PARTIES CHOOSE OPTION B?

A. The Option B approach is premised on the idea of making non-converting GFA parties financially indifferent to the LMP-based charges for congestion and marginal losses in the day-ahead market, provided they schedule their GFA transactions in the Day-Ahead Energy Market and comply fully with the Midwest ISO's physical scheduling requirements. Once GFA transactions were scheduled in the Day-Ahead Energy Market, the Midwest ISO would accommodate those schedules with its security-constrained economic dispatch, thus providing redispatch to maintain the "firmness" of the implicit transmission rights awarded in the GFA.

During settlements of the Day-Ahead Energy Market, any scheduled GFA transactions would be charged the LMP-based transmission usage charges, just like any other transaction scheduled in the Day-Ahead Energy Market. The GFA transactions, however, would also be credited in their settlements as though the scheduling party had a perfectly matching set of FTRs, thus exactly offsetting the congestion component of the transmission usage charge. In other words, the Midwest ISO would settle each GFA transaction scheduled in the Day-Ahead Energy Market as though that transaction were perfectly hedged against LMP-based congestion charges.

The transmission usage charge would also contain a component reflecting the marginal losses associated with the GFA transaction. For parties selecting Option B, the Midwest ISO would then apply a method designed to achieve the effect of charging GFA transactions at the "average" cost of losses, rather than the marginal cost of losses. To achieve this effect, the Midwest ISO mechanism would rebate to the responsible GFA party the difference between the marginal losses actually included in the transmission usage charge and the Midwest ISO's calculation of "average" losses. The resulting difference paid by the GFA party would be the "average" cost of losses. Although it is not clear how to implement this provision (the uniqueness of marginal loss contribution does not apply to average losses) the effort to immunize GFA from paying for marginal losses at the margin will be a substantial benefit.

Q. HOW WOULD THE MIDWEST ISO PROPOSAL UNDER "OPTION B" ALLOW FOR INCREASED BENEFITS?

A. As discussed above, the Midwest ISO intends for the day-ahead schedules to preserve the "use-it-or-lose-it" feature of the physical GFA transmission right. However, the GFA

customer would have a strong incentive to simply schedule its full right in the day-ahead market whenever it anticipated congestion in the real-time market. It would incur no cost for the schedule and would in effect then be paid to reduce its schedule in the real-time market to match its actual power flow through the natural transactions in the balancing settlements. The GFA customer then benefits from the economic value of its scheduling right with no real "use-it-or-lose-it" feature, and the TO shifts its redispatch obligations to the Midwest ISO. Together, the assumption of a perfect FTR hedge and the rebate of the difference between marginal losses and "average" losses would leave the GFA parties better off than under the existing GFA terms and conditions.

If the GFA did nothing more, it would be exposed to some risk that the real-time congestion cost would reverse sign from its expectation, but this should be rare and on average the GFA should be able to capture the expected value of the FTR.

The impact on the market depends on how virtual schedules operate to eliminate the arbitrage opportunity created by the formal GFA schedules that differ from the real-time expectations. If there were no virtual bidding allowed, then the implied congestion in the day-ahead market would exceed the expected real-time conditions, and the Midwest ISO would regularly be in the position of seeing net schedules in the day ahead that it and everyone else knew would not be consistent with reality. This could create reliability problems, gaming opportunities or, at a minimum, substantially complicate the tasks at the Midwest ISO.

Fortunately, the Midwest ISO Tariff design anticipates the use ff virtual bidding. If there were perfect information about the difference between the formal GFA schedules (set to capture the benefits of increased FTRs everyday) and the expected real-time

requirements under the GFA, other parties would have an incentive and a capability to submit counterflow schedules in the day-ahead market and be paid day-ahead for relieving congestion. Until prices were driven to equilibrium, there would be a premium paid for these virtual awards. These other Market Participants would be taking the risk that a particular congestion charge might be even greater in real time, but this risk is similar to the risk taken by the GFA.

Most importantly, the virtual bidders would be providing a valuable service for the Midwest ISO and all Market Participants by moving the *net* day-head schedules closer to the real-time expectations. This would counteract the perverse scheduling and reliability effects of the rules under Option B for treating the GFAs. It is important for the Commission to acknowledge that this virtual bidding is part of the solution and not part of the problem. With a well-designed market, this type of arbitrage activity should be encouraged.

Of course, if the other Market Participants were the only source of the virtual bids in the day-ahead markets, they would never have perfect information and the net schedules would still exhibit the residual effects of the artificial formal schedules of the GFAs. However, the one group that would have better information would be the parties to the GFAs themselves. If these parties provided separate virtual bids for counterflow in the day-ahead market, they could select those bids to exactly match the difference between their formal schedule submitted under the GSA and their own plan and expectation for the actual requirement in real-time. In effect, this would move their collection of the counterflow payment under the implicit FTR from the real time to the day ahead. This would be beneficial for the GFA parties in reducing the little risk they

face in estimating congestion costs and beneficial for the rest of the Midwest in improving the quality of the net day-ahead schedules.

Q. WOULD ALLOWING GFA PARTIES TO PROVIDE VIRTUAL BIDS IN THE DAY-AHEAD MARKET BE FAIR AND AVOID GAMING?

A. The fairness question addresses the fairness of Option B. Once it is determined that something like Option B is needed under the guidance provided by the Commission, the question turns to how to best implement the approach without creating further problems in the operation of the market.

It would be a significant policy mistake to eliminate virtual bidding. In reality, it would be difficult to police all the ways that virtual bidding might arise in practice if not in name. Since virtual bidding is part of the solution of using the market to seek out efficient and reliable net day-ahead schedules, the Commission should support it as a central part of the Tariff design.

Furthermore, once we have accepted that Option B already allows the GFA customers to capture the implicit FTR benefits through the balancing market, we recognize that the remaining question is how to make virtual bidding more effective. This leads to the conclusion that the most effective use of virtual bidding would be in the hands of the GFA parties along will all others in the market.

Were it possible to prohibit GFA parties from submitting virtual bids in the day-ahead market, the effect on the uplift is not clear, so there would not be an obvious cost-shifting advantage. But there would be obvious difficulties in obtaining good net day-ahead schedules. Hence, the conclusion would be to allow such virtual bidding by all parties.

This argument highlights the core feature of Option B. In principle, disciplined by the real-time incentives, Option B could simply be a transfer of money to the existing GFA parties, without any major impacts on reliability or efficiency. Given a Commission decision to support the cost shift and resulting uplift implications, it would be desirable to minimize the side effects.

Q. HOW WOULD THE MIDWEST ISO ACCOUNT FOR THE "IMPLICIT" FTRS THAT IT ASSIGNS TO THE GFA SCHEDULES IN ORDER TO ACHIEVE THE EQUIVALENT OF PERFECT HEDGES FOR THOSE SCHEDULES?

A. When the Midwest ISO conducts the allocation of FTRs, the Midwest ISO can assign a set of FTRs to each GFA that it believes will best match the expected transactions that could be undertaken under that GFA. For the most part, Midwest ISO can use the same allocation rules for that purpose that it applies to other parties that are entitled to allocations, except that the Midwest ISO is selecting the FTRs to be designated on behalf of the GFA parties. Assigning FTRs to cover expected GFA transactions from parties that chose Option B would allow the Midwest ISO to evaluate the simultaneous feasibility of the entire set of allocated and GFA-assigned FTRs. Meeting the Simultaneous Feasibility Test is a necessary condition for assuring revenue adequacy – that is, for ensuring that, for the grid capacity assumed in the allocation's simultaneous feasibility test, there will be enough congestion rents collected in each day-ahead energy market to satisfy all of the FTR entitlements.

Q. DO YOU ANTICIPATE ANY DIFFICULTIES WHEN THE MIDWEST ISO RESERVES FTRS FOR THESE EXPECTED OPTION B TRANSACTIONS?

A. During the allocation process, it will be impossible for Midwest ISO to predict exactly how many and which FTRs to assign to GFA transactions, because the exact number, locations and quantities of such transactions cannot be known with certainty in advance. The Midwest ISO will have to make an estimate, after evaluating the GFAs and discussing likely schedules with the GFA parties. And like any guess, sometimes it will be too high, sometimes too low, or assume the wrong source and/or sink locations.

Q. WHAT ARE THE CONSEQUENCES IF THE ASSUMPTIONS ABOUT THESE TRANSACTIONS ARE EITHER TOO LOW OR TOO HIGH?

A. If the Midwest ISO underestimates the amount of transmission usage by the actual GFA transactions, it will tend to assign insufficient FTRs to those transactions, leading to misleading conclusions about the validity of the Simultaneous Feasibility Test. This in turn can increase the number of settlement periods in which there would be insufficient congestion revenues collected from day-ahead transactions to fund all of the FTR entitlements. There would be an increased likelihood of revenue shortfalls that would have to be handled in some fashion.

Conversely, an over-estimate of GFA transactions and a corresponding over-assignment of FTRs to GFAs in the allocation process would tend to increase the chances of revenue surpluses in the Day-Ahead Energy Market settlements. Assigning too many FTRs to GFA transactions would also reduce the number of FTRs that could be allocated to non-GFA parties under the Simultaneous Feasibility Test. Over time, we might expect

the Midwest ISO to improve its estimates, but it would be unrealistic to expect the Midwest ISO to get it right all the time.

Q. WHY WOULD OVER- AND UNDER-ASSIGNMENTS OF FTRS TO GFAS RESULT IN REVENUE SURPLUSES OR SHORTFALLS IN THE DAY-AHEAD ENERGY MARKET SETTLEMENTS?

A. The reason is because the FTRs assigned in the allocation process for purposes of meeting the Simultaneous Feasibility Test would not be the same FTRs the Midwest ISO would have to assume in the Day-Ahead Energy Market in order to ensure financial indifference for each settlement period. If insufficient FTRs were assigned in the allocation process to match the actual transactions for a given day or hour, the Midwest ISO would assume there were more FTRs assigned for that day or hour to make up the difference. That would lead to revenue shortfalls for the affected Day-Ahead Energy Market settlement period. Conversely, if too many FTRs were assigned in the allocation process to match the actual transactions for a given hour or day, the Midwest ISO would assume there were fewer FTRs assigned to make up this difference for the hour or day. That would lead to revenue surpluses.

Q. CAN THE MIDWEST ISO USE THE SURPLUSES TO OFFSET THE SHORTFALLS?

A. Yes. It seems likely that no matter how well the Midwest ISO does in predicting GFA schedules, its assignment of FTRs in the allocation process will both assign too many FTRs in some cases and too few in other cases. Any resulting revenue shortfalls and surpluses in the day-ahead settlement intervals could be used to offset each other. The Midwest ISO proposes to take this offsetting approach. It is important to note, however,

that surpluses could apply to one GFA and shortfalls apply to another; there will be implicit cost shifting between the various GFAs and between the GFAs and those who fund or absorb the net shortage or surplus.

Q. HOW DOES THE MIDWEST ISO PROPOSE TO HANDLE THE NET FTR REVENUE SHORTAGE OR SURPLUS?

A. The Midwest ISO proposes to create an account for these monies. If there is net revenue shortage in that account, the amounts will be recovered from the Load-Serving Entities within the Midwest ISO. It is my understanding that the original intent was to have regional allocations of these costs to reflect the regional distribution of the GFAs. However, apparently software constraints at the moment dictate that the allocation will be proportional across the Midwest ISO.

Q. IS THE PROPOSED ASSIGNMENT OF THE FINANCIAL BACKSTOP RESPONSIBILITY FAIR?

A. The use of uplift charges for the net costs seems necessary, given the constraint of holding GFA parties at least financially indifferent, or better. Of course, the broader the region for spreading the costs, the greater the degree of cost shifting. The use of sub-regions would tend to keep the backstop responsibility focused on those LSEs – often but not always the vertically integrated TOs – in each region that are likely to be the original transmission providers under the GFAs. To the extent that were true, the Midwest ISO approach would not be too different from holding the GFA TOs financially responsible for net congestion charges, while allocating FTRs to those TOs to hedge those costs. On the other hand, the GFA TOs might also find that the backstop costs for their GFAs are being shared by other non-GFA LSEs/TOs in the sub-region, making it less advantageous

to pursue Option A (*i.e.*, the next-best approach) or forms of voluntary conversion. This possibility seems to be even more likely with the decision to abandon regional allocation and spread the costs across the full Midwest ISO. If that turns out to be the case, then those non-GFA parties may have a case for a more equitable cost allocation and/or an argument for mandatory conversion of GFAs or imposition of the next best solution. It is very difficult to predict which outcome will occur in advance. In the meantime, the Commission's guidance to offer approaches that gain substantial stakeholder support means that the Midwest ISO cannot impose either voluntary conversion or the next best approach on unwilling GFA parties. Given that reality, the interim mechanism proposed by the Midwest ISO is less than I would hope but would be a workable starting point; and it should be reevaluated after a defined transition period, as proposed by the Midwest ISO.[15]

Q. PLEASE EXPLAIN HOW THE MIDWEST ISO WOULD ENSURE FINANCIAL INDIFFERENCE WITH RESPECT TO PAYMENT FOR LOSSES UNDER OPTION B.

A. The basic approach outlined is to charge GFA transactions the "average" cost of losses, rather than the marginal cost of losses. The mechanism for doing this is to charge marginal losses to GFA transactions in the Day-Ahead Energy Market but to rebate to the appropriate GFA party the difference between marginal losses and "average" losses for

[15] The Midwest ISO proposes that the transition period will end by February 2008, by which time the parties are expected to develop a new proposal that may not include the three Options allowed during the transition period. I believe that the transition period is a reasonable amount of time for the Midwest ISO and the parties to determine how well the proposed mechanisms are working and to become familiar with the opportunities provided by full compliance with the Tariff. This is particularly true because in any year of the transition, GFA parties always have the option of either voluntary conversion or choosing the next best approach through Option A.

each transaction. It is not clear how to implement this provision. It is clear that it would be a substantial benefit for GFA transactions submitted in the day-ahead market.

The central difficulty will be in defining average losses over a subset of users. Although there is a unique definition of the marginal loss contribution at any point relative to a fixed reference bus, there is no unique definition of the average losses for a subset of the users. Hence, some definition would have to be constructed and would be arbitrary to some degree. The principal concern would be to get agreement in advance on the details, not just the high principle.

Q. IS THIS MECHANISM FOR TREATMENT OF LOSSES FAIR?

A. Given the constraint of making GFA parties indifferent to their exposure to marginal losses, this mechanism seems dictated by the Commission's conditions. It should not be forgotten, however, that part of the important incentive properties of LMP are achieved through the application of marginal losses. To the extent that all GFA transactions face only "average" losses, those incentives are lost and the result will be a less efficient use of the grid and a less efficient set of incentives to encourage investments in generation, demand-side actions and transmission upgrades at the right locations. The same arguments apply to making parties financially indifferent to incentives reflecting the cost of congestion.

For this reason, it would be important for the Commission to recognize that the counterflow and virtual bidding arguments outlined above apply as well to marginal losses. The GFA parties will be paid for marginal losses for counterflow in the day-ahead market with virtual bidding or the real-time market with balancing settlements. To the extent that this arbitrage effect works less than perfectly, it would be prudent to

approve the proposed Midwest ISO approach only for a defined transition period and to reevaluate the Option B mechanism at some point in the future, as the Midwest ISO proposes to do during the transition period.

Q. WHAT HAPPENS UNDER OPTION C?

A. Under Option C, the responsible GFA party would be subject to the Tariff's LMP-based usage charges, just as in Option A. Unlike Option A, however, the responsible party would not participate in the allocation of FTRs. And unlike Option B, the parties would not receive loss refunds on individual transactions. However, like other Market Participants, they would participate in an allocation from the marginal losses pool. And unlike Option B, under Option C the Midwest ISO would not attempt to make the responsible party financially indifferent to the Tariff charges.

Q. HOW DO YOU EVALUATE OPTION C?

A. This option appears to be designed for those GFA parties that have little need for FTRs and little concern about marginal losses. That could be the case, for example, if the generation sources relied on by the parties were relatively close to loads and unlikely to contribute to congestion. Or it might be that the generation/load configuration was such that there were risks if the responsible party were required to accept counter-flow FTRs under the Midwest ISO's FTR allocation rules. Option C would remove the responsible party from that process and thus remove this exposure. Option C thus seems a reasonable approach for minimizing risks for those parties in these situations, and because it requires the responsible party to be subject to the Tariff financial consequences, offering this option to the parties is in the public interest.

Q. HOW WOULD THE MIDWEST ISO APPROACH TREAT DEVIATIONS FROM DAY-AHEAD SCHEDULES OR SCHEDULES SUBMITTED AFTER THE DAY-AHEAD ENERGY MARKET DEADLINE?

A. Under any of the three options, schedules submitted after the Day-Ahead Energy Market deadline would be treated like any other schedule and handled in the real-time market. Any schedules submitted to the real-time market, and any deviations from schedules committed in the Day-Ahead Energy Market, would be settled at real-time LMPs.

This is an important feature because it provides a powerful incentive for efficient use of the system. In effect, the day-ahead schedules bestow property rights to collect congestion and loss revenue. But in the real-time, the incentive is to deviate from the day-ahead schedules if these schedules are inefficient. The GFA customer or the associated TO would have incentives to conform to the redispatch and share in the payments under the balancing settlements. Were it not for imperfect information and the reliability and familiar gaming complications of providing incentives for different day-ahead and real-time schedules, this real-time pricing would by itself undo the day-ahead problems. However, it is most important to get the real-time right. Given the need to compromise, or more, in assigning benefits to GFAs, it is better to do so in the day-ahead market in a manner that limits the effects to financial transfers but achieves efficient net schedules. This is the intent of the Midwest ISO proposals, and with sufficiently flexible virtual bidding participation, the result should be a workably efficient system. The net impact on uplift through the financial transfers is hard to predict, but could be substantial.

Q. IS SETTLING DEVIATIONS FROM DAY-AHEAD SCHEDULES AT REAL-TIME LMP PRICES A GOOD APPROACH?

A. Settling deviations from day-ahead schedules at real-time LMP is the proper treatment. The parties are then free to use the Day-ahead Energy Market or not, and to deviate or not from their day-ahead schedules to the extent they see financial advantage in following those schedules or, alternatively, buying and/or selling energy and transmission in the real-time market at real-time LMPs. This approach gives parties the proper incentives and encourages beneficial arbitrage between the Day-Ahead and Real-Energy Time markets. For these reasons, the proposed rule is in the public interest.

Q. IS THE PROPOSED EXPEDITED RESOLUTION PROCESS FAIR?

A. Yes. As I discussed earlier, in order for the Midwest ISO to operate the markets efficiently and reliably, it must have all the requested information in a timely manner. Specifically, the Midwest ISO must know who will be the entity financially responsible for transactions pursuant to the GFAs, who will be doing the scheduling and to whom to allocate FTRs if applicable. As explained in Dr. McNamara's testimony, the location of generation and load, and maximum possible schedules under the GFAs, need to be provided to the Midwest ISO prior to its FTR allocation to other parties in order to arrive at an equitable allocation of financial rights based on existing entitlements. The purpose of the Expedited Dispute Resolution ("EDR") process is simply to resolve who will provide this information and take the necessary responsibility for scheduling under the selected GFA Option. Barring a simple and immediate agreement by the GFA parties, the EDR provides the Midwest ISO with a default mechanism for gathering the information necessary to implement the markets. In addition, because the EDR process is

subject to further appeal, if parties are not satisfied with the result of the EDR process, parties can seek alternative resolution of their issues. In the meantime, however, the Midwest ISO would have available information it needs to operate the markets.

Q. WHAT DO YOU CONCLUDE ABOUT THE OVERALL APPROACH TO GFAS PROPOSED BY THE MIDWEST ISO?

A. Given the constraint from the Commission on the need to balance the interest in honoring the financial terms of the GFAs, the need for common rules, the positions of the affected parties, and other factors, the Midwest ISO faced a difficult task in developing a compromise that would move in the right direction and encourage parties to make efficient choices while still garnering stakeholder support. On balance, the overall approach taken by the Midwest ISO is workable and may be about all that can be achieved within the limited flexibility left in the design. It encourages voluntary conversion and provides clear mechanisms for parties to choose the next best approach through Options A and C. Where these choices are not likely, the Option B approach at least retains the form for compliance with the Tariff, and that will facilitate full compliance with the Tariff at a later date. As I discuss above, the mechanisms to achieve "financial indifference," while workable, could involve substantial uplift payments. If implemented with less than perfect arbitrage. Option B could undermine the incentive and efficient scheduling properties of the LMP-based Tariff, so I agree that this approach should be offered only for a defined transition period. Moreover, it will be difficult to get the FTR assignment piece of Option B right, and there will be financial consequences for other parties in the form of uplifts when the results are not perfect. The allocation of the resulting costs, however, may eventually encourage more parties to support approaches

that more fully comply with the LMP-based provisions of the Tariff. Given the need for a transition to allow all parties to evaluate the operation of the Tariff, as well as the various GFA options, I conclude that the overall approach taken by the Midwest ISO is reasonable and in the public interest.

Q. DOES THIS CONCLUDE YOUR TESTIMONY?

A. Yes, it does.