MISO Resource Adequacy Forum
July 2, 2015
Organization of MISO States (OMS) Response
For the State Regulatory Sector

Introduction

The Organization of MISO States (OMS) appreciates the opportunity to provide responses to the policy questions that were introduced at the June 5th Resource Adequacy (RA) Policy Forum. Since the release of the RA Issues Statement and the subsequent launch of the MISO RA Workshop process there have been several opportunities for stakeholder feedback on how to ensure all concerns related to RA are accurately captured and understood. At the June 5, 2015 RA Policy Forum MISO framed what they believe to be the top priorities of the stakeholders – seasonal considerations, locational considerations, and generation interconnection processes – as broad policy questions. OMS will take this opportunity to stress the relative importance of these three areas, highlighting the benefits that MISO should be striving to achieve.

Before any changes to the current Resource Adequacy Construct (RAC) are considered, the OMS urges MISO to keep the following in mind when evaluating any possible change to the existing resource adequacy processes – **resource adequacy within MISO is largely a state responsibility**. Unlike most other RTOs in the Eastern Interconnection, MISO is predominately composed of traditional vertically-integrated, state-regulated utilities. The vast majority of OMS members exercise plenary and exclusive jurisdiction over decisions regarding the type and amount of generation constructed within their boundaries by their utilities, and what costs those utilities are allowed to recover.

To date, MISO's RAC has recognized and respected state and local regulators resource adequacy decisions. It does not attempt to force new capacity into regions that state and local regulators have determined do not need additional capacity. The Planning Reserve Auction (PRA) is a voluntary component of the RAC.

State and local regulators inherently evaluate their jurisdictional utilities' capacity decisions as part of their normal responsibilities. They consider not only the consequences of those decisions over the near-term, but also the effect of these decisions 10, 20, 30, and sometimes 40 years into the future. During this evaluative process, state and local regulators quantify their jurisdictional utilities' capacity costs. They gather and receive evidence from industry experts, environmental interest groups, consumer advocates, industry trade groups and other affected stakeholders. Regulators hold hearings where local, regional, and sometimes national interests are represented and considered by the individual regulators and their staff. The majority of MISO's traditional, vertically-integrated utility generator capacity costs – and thus, the majority

of MISO's generator capacity costs – recover their capacity costs through this process, and bundled retail rates.

To this point, MISO's RAC and Energy and Operating Reserve Markets, working in tandem with state and local regulation, have resulted in reserve margins above all federal, state, and local requirements. Given the many challenges the industry faces, OMS recognizes that, as the reserve margins tighten within MISO, it is more important than ever to have accurate information. Specifically, details for new generators, proposed and actual unit suspensions and retirements, and accurate forecasting by all parties for demand and energy pursuant to MISO's Module E-1 and NERC requirements will be critical. Furthermore, OMS recognizes that additional communication and analysis will be needed regarding fuel reliability and diversity, electric and natural gas coordination, demand response, energy efficiency, as well as imports and exports, to provide the most updated and accurate data to MISO. OMS and its members are committed to facing these challenges and have already begun that process.

I. Seasonal Considerations

The first policy question posed by MISO was "How should MISO's resource adequacy processes appropriately account for and address seasonal issues?" MISO also provided several topics to consider, all of which were interrelated to some degree. The solutions proposed below represent options that OMS believes will help states in their responsibility to manage resource adequacy while maintaining reliability, providing flexibility, and increasing transparency to all market participants. The solutions OMS is proposing have been grouped into two tiers, with Tier 1 solutions serving as predecessors to the potential Tier 2 solutions, making no implication of priority.

Table 1: Tier 1 Seasonal Solutions

Solution	Benefits	Tradeoffs
Seasonal Capacity (ICAP) Ratings – by season	Higher thermal efficiencies for fossil and nuclear units in winter can be captured. Better understand system risk – including coordination of generation and transmission outage for LRZ/ancillary zones.	More work than current assessment.
Seasonal Forced Outage Rates/capacity de-rate	Seasonality of wind, solar, and hydro production can be captured. Fuel delivery issues, such as gas pipeline constraints. Cycling characteristics and run times vary by season, impacting generator performance.	Resources will need to aggregate data according to number of seasons.

	Better captures fuel constraints by time of year and location. Weather related issues by season are better incorporated into analyses.	
Transmission Ratings by season	Knowing transmission rating by season will allow for accurate analysis of the set of resources that is actually generating during a specific season. Currently done for 4 seasons by some TOs.	TOs would have to agree to weather conditions for local area and calculate the line/equipment ratings
Load Forecasts by Season	There would be more visibility around what types of resources will be needed to meet future loads. Non-coincident peak demand and energy are already forecasted on a monthly basis for 2 years out for NERC standards. Summer and Winter season forecasts are already created for years 3 through 10 to meet NERC standards.	LSEs may not currently do this robustly – i.e., weather variation for non-summer seasons. May need to modify NERC summer and winter forecasts if number of seasons is greater than 2.

Table 2: Tier 2 Seasonal Solutions

Solution	Benefits	Tradeoffs
Seasonal PRA	Leads to system with seasonally appropriate amount of resources vs. resources planned for summer peak only. Captures LMR availability for each season. Recognizes MISO locational diversity of capability.	Requires business rule changes, verification process, LRZ CIL's-CEL's
Seasonal Assessment by LRZ and footprint	Assess the LRZ for generation and transmission capability to meet seasonal load requirements. Includes coordination of generator and transmission planned outages. Will provide a longer-term seasonal view of resources, based on NERC-required 10 year out forecasts.	
More accurate Maintenance Margin studies	With seasonal capacity ratings, outage rates, and transmission ratings, an increase in	May require a longer planned request for outage.

	accuracy of maintenance margin studies is possible. More efficient outage planning. Greater reliability.	
Market Participant Flexibility	Retirement and interconnection timing flexibility Allows for mothballing and outage scheduling and matching the seasonal models	Requires intra-year capacity rating process

OMS's comments from the February Hot Topic on RA stated, "The current resource adequacy processes may need to be modified slightly in order to address the recurrence of an extreme winter event." OMS suggests MISO move forward with investigation of a multi-season RAC. When comparing the current annual construct (summer peak) to a multi-season construct, the characteristics of all resources would be more accurately captured. Such resources would include wind generation which performs better during the high wind winter season, and the summer availability from Manitoba Hydro's winter peaking system. Furthermore, natural gas generators would have lower forced outage rates in the summer and shoulder seasons when demand for natural gas is much lower. Load requirements, resource availability, and plant operations vary throughout the year; thus a multi-season construct would improve the RAC by allowing for better estimations and projections provided by the various market participants.

Other benefits of a multi-season RAC include better alignment with: the Financial Transmission Rights (FTR) seasonal auctions, the quarterly network and commercial model updates submitted by the Transmission Owners (TOs) and Market Participants, and the quarterly Generator Availability Data System (GADS) information submitted to NERC. OMS supports MISO investigation of a multi-season RAC that accredits resources on a seasonal basis because the differences in generation/energy source availability and performance.

MISO should not pursue any solution that would conflict with state determinations regarding the proper fuel mix for any given utility. OMS does believe, however, that MISO can investigate a construct that assigns more appropriate value to the different generator types, capturing their specific impacts to RA on a seasonal basis.

II. Locational Considerations

The second policy question posed by MISO was: "How should MISO use locational considerations in resource adequacy processes?"

This topic is rooted in the original Resource Adequacy Construct (RAC) filing by MISO, which created the Local Resource Zones (LRZs) and provided for differences in capacity prices by zone. Many stakeholders have since expressed concerns that how zones are treated in the PRA doesn't represent the actual physics of the transmission system, and instead imposes artificial barriers and unequal treatment of capacity.

Table 3: Locational Solutions

Solution	Benefits	Tradeoffs
Reexamination of LCR, CIL, and CEL and impacts on PRA	Recognizes actual planning capability and any risks to serve load. Increase zonal competition in PRA by increasing number of sellers available to loads. Address market power concerns. Efficient and proper use of transmission capacity that influences the PRA.	Can interfere with the IMM/FERC concept of having a "capacity price signal" for where to build.
Allow/provide long term financially contracted capacity to hold its value and not be subjected to higher auction prices by late comers and unhedged participants	First movers who plan years in advance for capacity are hedged against auction prices. Documents forward committed energy and capacity and transmission service that avoids any need for a mandatory 100% forward capacity market.	First movers are unable to realize potentially higher prices from auction. Allow IPPs and obligation to serve entities to have a separate forward market. More detail required, but improves accuracy of total cost to customers.
States determine local capacity needs and resource considerations	Recognizes water and other environmental impacts that need to be mitigated, which are beyond market signals. Accounts for pipeline construction and other infrastructure needs.	
Incorporate location of LMRs into Emergency Procedures	Will be able to use LMRs that are actually located within the defined emergency area, addressing the needs of the system in a targeted and precise manner. Adds confidence to use of LMRs.	May increase use of certain LMRs, while others rarely get used.

Reexamination of the zonal auction design parameters – Capacity Import Limit, Capacity Export Limit, Local Reliability Requirement, and the Local Clearing Requirement – is needed for improvement of the MISO RAC. The current methods for developing these auction design

parameters lead to local clearing requirements in the range of 73% to 97% of the planning reserve margin requirement for the respective zones. However, local clearing requirements at these are not set with consideration of meeting NERC reliability requirements. If there's an ability to set a lower LCR while providing reliability and meeting the footprint planning reserve margin, the method of calculation of the LCR should be revisited.

Because MISO's local auction design parameters, particularly the local clearing requirement, are designed to produce local auctions with concentrated sellers and only very limited competition, the local market power mitigation measures are critically important. However, the local auction offer caps are currently established based on principles of opportunity cost, namely PJM auction clearing prices, without regard for how feasible a transaction with PJM actually is.

OMS supports MISO's recent changes to the LRZ Reevaluation triggers, including the state request provision. MISO should also evaluate whether zonal configurations should consider supplier concentration levels, particularly in circumstances where market power may be an issue.

The location of LMRs should be incorporated into the existing registration procedures and given a high priority. This simple fix will ensure that these resources are used most effectively throughout the recently updated emergency procedures.

III. Generator Interconnection Process

The third policy question was: "How should the generation interconnection process reflect the operational and planning flexibility needed to demonstrate capacity deliverability?" This question is attempting to address the incongruity that has been discovered between the Generator Interconnection Process (GIP) and the RAC. The issue stems from the interconnection reliability study analyzing both peak and off-peak conditions while resource adequacy only considers the summer peak. It may be possible to eliminate this issue by implementing the seasonal solutions that are discussed in Section I.

Other concerns related to the GIP are related to the costliness and timeliness of the process. The solutions below are primarily geared towards these two concerns.

Table 4: Tier 1 Generator Interconnection Solutions

Solution	Benefits	Tradeoffs
Alignment of GIP reliability study with seasonal assessments/capacity ratings	After incorporating seasonal solutions, the reliability study performed for NRIS will be able to account for seasonal differences that may affect the deliverability of new resources.	

	Will allow for "seasonal conditionality" of NRIS.	
More flexible interconnection study process	Allow quicker solutions with reasonable accurate estimate of transmission builds Allow for pay for accuracy, and pay others for withdrawals	Recognize that multiple sites/sizes are not going to be built for the final choice. Change pricing for generation group sensitivity analysis as they all won't be picked to go into single GIA

Table 5: Tier 2 Generator Interconnection Solutions

Solution	Benefits	Tradeoffs
Improved interconnection modeling	Reduced incentive to overbuild transmission in the near term, leading to lower costs.	Need to agree on modeling of renewables and simple cycle gas unit and LMRs

OMS believes that there needs to be a more flexible process in place for states and utilities to propose new generation, putting it on a level playing field with transmission solutions. This can be accomplished through changes to the existing GIP and the procurement process of Network Resource Interconnection Service (NRIS). MISO has currently identified several potential misalignments between the current RAC and the GIP which need to be addressed. This is especially important for planning the replacement of retiring generators. Another example of the generator/transmission incongruity was illustrated in the *Issue Statement on MISO Resource Adequacy Concerns:*

> Currently, resources that intend to retire but are kept in service by MISO for reliability reasons are modeled as "available" in the planning analysis until MISO determines that they can retire without affecting reliability. This modeling assumption may result in inefficient overbuilding of the transmission system, because MPs may be directed to build upgrades that will not be needed once the old resources that were temporarily kept in service actually retire. (Emphasis added). These potentially unnecessary upgrades may serve as a barrier to integrating new resources onto the MISO system.

Correcting any assumptions or processes that can lead to unnecessary and/or inefficient transmission build-out should be given a very high priority. The current process for generation interconnection approval with conditional or non-conditional agreements should be revamped within the MISO Transmission Expansion Plan (MTEP) for better alignment with transmission projects proposed in MTEP and the subsequent approval process by the MISO Board of Directors (BOD).

How the GIP will fit with any new seasonal ratings or processes will need to be considered. It's feasible that conditional agreements would be able to reflect varying amounts of seasonal interconnection service. This will allow newly interconnected resources to maximize their revenue based on actual system availability, reducing the incentive for inefficient expansion of the transmission system.