Modifications to AFC Dispatch Process Related to OATT Reservations

This document outlines a series of potential modifications to the dispatch methodology used in the AFC process to model OATT reservations, including service to network and native loads. Although the modifications discussed in this document will address negative generation occurrences, the changes proposed herein are not limited to that issue. For example, the document also proposes changes to the AFC modeling process for transmission service requests that are accepted, but unconfirmed and for network resources that are in excess of network load.

Additional Information Required From Transmission Customers

All network customers will have the option of submitting dispatch information in three formats: the Hourly Format, the Stack Format and the Unit Commitment Format. This includes the Transmission Provider's wholesale merchant function (the "SPO") when serving the Transmission Provider's native load. The choice of which format to use will be left to the network customer. If the network customer does not provide information that complies with the requirements for one of these options or does not provide any information at all, the Default Format will be used to model service to that customers load.

Network customers that choose the Stack Format option will be required to submit the following information:

- Forecasted hourly load for each hour of the next 7 days, (Days 1-7) and forecasted peak-hour load for each day of the next 24 days (Days 8-31).
- Three separate lists (or "stacks") of OASIS reservations for all confirmed network resources (short-term and long-term), with each list arranged in the dispatch order preferred by the network customer with the resource to be dispatched first listed first and the resource to be dispatched last listed last. A separate "stack" should be submitted for each of the following periods: (1) the peak hours (HE[1] 7 - 22) for each day of the next 7 days; (2) the off-peak hours (HE 1-6, 23-24) for the next 7 days; and (3) the peak hour for the next 24 days. The reservations listed in each stack will be identified by OASIS ID numbers.[2]
- The sum total of the OATT reservation capacity listed in the Stack Format file must be at least equal to the highest forecasted load in each hour of three periods above.

Network customers that choose the Hourly Format option will be required to submit the following information:

- Forecasted hourly load for each hour of the next 7 days, (Days 1-7) and forecasted peak-hour load for each day of the next 24 days (Days 8-31).
- Forecasted hourly dispatch for each hour of the next 7 days, (Days 1-7) and for the peak-hour load for each day of the next 24 days (Days 8-31). The forecasted hourly and peak-hour dispatch must be provided on a reservation-specific basis and can only include confirmed reservations for short-term and long-term designated network resources. Network resources

[1] "HE" denotes Hour Ending.

[2] Where the designated network resource is power purchase contract that is being sourced from a unit directly interconnected with the Entergy transmission system, the OASIS ID number used must be specific to that generating unit.

that do not currently have an OASIS ID number will be required to obtain an OASIS ID number that will be used for purposes of this option.
- The forecasted hourly dispatch listed in the Hourly Format file must be equal to the forecasted load in each of three periods above.

Network customers that choose the Unit Commitment (UC) Format option will be required to submit the following information:

- Forecasted hourly load for each hour of the next 7 days, and forecasted peak-hour load for each day of the next 24 days.
- A UC Format file that contains the network customer's designated long-term network resources and the following information for those resources: minimum and maximum run levels, resource availability (*i.e.*, outage schedule) and a forecasted hourly dispatch of those resources for each hour of the next 7 days, (Days 1-7) and for the peak-hour load for each day of the next 24 days (Days 8-31). The forecasted hourly dispatch does not have to equal total network load and cannot include resources for which firm transmission service has not been reserved.
- One or more Stack Format files containing the customer's OASIS reservations for short-term confirmed network resources arranged in dispatch order. As with the Stack Format option, the network customer will submit a separate "stack" for each period (peak during the next 7 days, off-peak during the next-seven days, and peak for the next-24 days) for which the Hourly Format file is insufficient to meet load in any hour.
- The UC and Stack Format files, when combined, must provide sufficient resources to meet forecasted network load in each hour of the three periods above.

The following additional points apply to all of the files listed above (Stack, Hourly and UC):

- All files will be treated as confidential information belonging to the network customer submitting that information. The files themselves will not be posted on OASIS, but the dispatch levels produced by the AFC process will be included in the AFC models posted on OASIS.
- All files will be submitted on at least a daily basis by a specific deadline yet to be determined. We anticipate that the deadline will be in the morning in sufficient time to resynchronize AFC values prior to the day's business. We are willing to accommodate multiple updates a day as this will improve accuracy.
- It is recognized that the customer dispatch files referenced herein are only projections of anticipated unit commitment/dispatch decisions that often will not reflect the real-time operating status of units. While economics will certainly be an important determination in developing these dispatch files, it is recognized that economics will not be the only consideration.

Pre-Processing of Dispatch Files

RFCALC will pre-process all dispatch files provided by network customers and SPO. If RFCALC determines that any of the files submitted by a network customer or SPO do NOT meet the applicable requirements, RFCALC will dispatch according to the Default Format. The pre-processing function performed by RFCALC will ensure that various requirements are met, including (but not limited to): (i) the format of the files is correct; (ii) all reservations specified in the files are confirmed reservations for firm network service; (iii) hourly dispatch levels and PMAX values are consistent with designated network resource capacity; (iv) sufficient network resources have been provided to meet network or native load; and (v) hourly dispatch values for individual units are reflective of the facility in question in terms of minimum and maximum run levels and ability of the unit to ramp over the entire range of run levels. After RFCALC confirms that the Stack, Hourly and UC Format files for each customer meets the applicable requirements, RFCALC will follow the sequential process described below to build power flow models and dispatch generation to serve network and native load. Any other data validation checks will be determined by the ICT.

Process for Modeling Network Resources for Native and Network Load

All network customers under the OATT will have the option of submitting dispatch information in either the Hourly, Stack or Unit Commitment Formats. After RFCALC confirms that the Stack, Hourly and UC Format files meet the applicable requirements, RFCALC will dispatch generation to meet network load in the following manner:

- For customers that choose the Hourly Format, RFCALC will dispatch the reservations as specified in the file. All reservations (or portions thereof) that are not dispatched in the Hourly Format file but that are still available for scheduling by the customer on a firm basis will be treated as "Excess Reservations."

- For customers that choose the Stack Format, RFCALC will dispatch the reservations sequentially in the dispatch order until the load requirements are met. Once RFCALC has dispatched the reservations such that generation meets load, any remaining reservations (or portions thereof) will be treated as "Excess Reservations."

- For customers that choose the UC Format, RFCALC will dispatch the available network resources at the hourly levels specified in the UC Format file. RFCALC will use the reservations identified in the Stack Format file to meet load to the extent that the dispatch of the UC Format file does not fully serve the load. If there are any reservations remaining after load has been met, those reservations will be treated as "Excess Reservations." If the reservations are not sufficient to meet load and additional generation is required, RFCALC will return to the network resources in the UC Format file and redispatch those resources to their full resource levels to eliminate the shortfall. If a shortfall still exists RFCALC will search OASIS for any

other reservations (including accepted-unconfirmed reservations) and will dispatch those resources to meet the load.[3]

Example of Modeling Process Using UC Format

Like the network customers, SPO will have the option of submitting information under the Hourly, Stack or UC Formats. Assuming that SPO chooses the UC Format option, we anticipate the dispatch process occurring as follows. SPO would provide a UC Format file that contains the hourly forecasted dispatch of all long-term network resources, including grandfathered network resources. For each of these resources, the UC Format file would contain the same information required of other customers using this format: minimum and maximum run levels and the availability (*i.e.*, outage schedule) and forecasted hourly dispatch of those resources for each hour of the next 7 days, (Days 1-7) and for the peak-hour load for each day of the next 24 days (Days 8-31). All short-term network resources would be included in Stack Format file.

Once RFCALC confirms that SPO's UC Format file meets the applicable requirements, RFCALC will dispatch the network resources at the hourly levels specified in the UC Format file. RFCALC will use the reservations identified in the Stack Format file to meet load to the extent that the dispatch of the UC Format file does not fully serve the load. If there are any reservations remaining after load has been met, those reservations will be treated as "Excess Reservations." If the reservations are not sufficient to meet load and additional generation is required, RFCALC will return to the network resources in the UC Format file and dispatch those resources to meet the load. If a shortfall still exists, RFCALC will search OASIS for any other reservations (including accepted-unconfirmed reservations) and will dispatch those resources to meet the load.

For customers that take service under a grandfathered, pre-Order No. 888 agreement, their load will be included in Entergy's native load (either by including that load in the load forecast or by adding it based on a scaling factor) and service will be modeled via the dispatch for that load submitted by SPO. For grandfathered customers that have the ability to independently designate additional firm resources under their grandfathered agreement, they will be allowed to submit a Stack Format file for those firm resources to the extent doing so is consistent with the terms of the grandfathered agreement. To accommodate such requests, RFCALC will ramp up the reservations in the Stack Format file and ramp down the appropriate existing resources under the pre-Order No. 888 agreement. The availability of new resources and ability of existing resources to ramp down to accommodate such resources will be based on the contractual and operational characteristics applicable to each grandfathered customer. Any reservations that cannot be accommodated by this dispatch may be treated as Excess Reservations to the extent doing so is consistent with the grandfathered agreement.

For jointly-owned coal units that are designated as network resources for customers under the Entergy OATT and are subject to a joint dispatch arrangement with SPO, such units will be dispatched via SPO's UC Format file. However, the dispatch amount attributable to SPO's native and grandfathered load will reflect the ownership rights of those customers and the dispatch amount attributable to other

[3] If RFCALC reaches this point, it will mean that the UC Format files did not have sufficient generation to meet load. Rather than reverting immediately to the Default Format option, RFCALC will first try to obtain additional reservations for that customer over OASIS. If that is unsuccessful in eliminating the shortfall, RFCALC will use the default format.

network customers' load will reflect the ownership rights of those customers. The point-to-point service from those units will be treated separately in a manner consistent with that service.

Process for Calculating Net-Interchange

To calculate the Net Interchange (NI), RFCALC will balance load and generation as it goes through the modeling process. RFCALC will sum up all the export reservations out of Entergy control area and set the initial value of NI equal to the total amount of export. As RFCALC reads each of the files submitted by network customers and models import reservations (*i.e.*, imports into the Entergy control area), it will adjust the NI to account for those reservations. At the end of this process, where the NI is positive, the total generation dispatch in the Entergy control area will be equal to the control area load plus the NI value; where the NI is negative, the total generation dispatch in the Entergy control area minus the NI value should be equal to the control area load.[4]

Process for Modeling Unconfirmed Reservations (Point-to-Point and Network)

Reservations that are in accepted mode (*i.e.*, have been accepted by Entergy, but not confirmed by the customer) will no longer be modeled in the base case after resynchronization, unless necessary to ensure that a network customer's generation is sufficient to meet its load. Reservations that are in accepted mode will be algebraically decremented against the two proxy flowgates (PMAX and TIECAP) *and* the remaining top-fifteen flowgates until such time as they are withdrawn, rejected or confirmed, or until such time as RFCALC requires modeling of those reservations to meet the customer's load or to create proxy files under the Default Format discussed below. Once an accepted request is confirmed, it will only be modeled if included in the customer's dispatch files or until such time as RFCALC requires modeling of those reservations to meet the customer's load or to create proxy files under the Default Format discussed below. As discussed in the following section, confirmed requests that are not modeled by RFCALC will be decremented against the two proxy flowgates (PMAX and TIECAP) *but not* the remaining top-fifteen flowgates.

Process for Decrementing Excess Reservations

Under the procedures described above, there will be instances where reservations that have been confirmed are not modeled or "dispatched" in the base case. These reservations are referred to as "Excess Reservations." To prevent overselling, RFCALC will algebraically decrement the impact of Excess Reservations on the two proxy flowgates (PMAX and TIECAP). For those reservations that are partially dispatched in the base case model (*i.e.*, not at full output), the un-modeled impact of those reservations will be decremented against these two flowgates also.

Entergy also sought comment from stakeholders on whether RFCALC should algebraically decrement the other flowgates included in the top 15 most limiting flowgates used to evaluate the un-modeled reservations. Commenting parties were also asked to address whether Entergy would still be obligated to provide firm service for the excess reservations, whether customers should be allowed to schedule excess reservations that are not modeled, and whether overselling of firm service could occur if

[4] The process for modeling external control areas is not being addressed in this proposal.

algebraic decrementing was not used. The use of a TRM value in lieu of algebraic decrementing has also been discussed.

Entergy's is proposing at this time that the impact of Excess Reservations would *not* be decremented against the other flowgates included in the top fifteen, without first gaining real-time operating experience with the modifications described herein. If after implementing these modifications Entergy, the ICT or any customer believes the practice of ignoring the impact of these reservations on the other flowgates should be modified, the issue will be raised in the ICT stakeholder process and all parties will have the opportunity to comment on any proposal prior to implementation, including any proposal to rely on TRM in lieu of decrementing. While the ability to schedule any reservation (including Excess Reservations and reservations modeled in the AFC process) may be limited by real-time operating conditions, customers will not lose the right to schedule Excess Reservations simply because those reservations are not modeled in the AFC process.

Process for Modeling Network/Native Load Reservations Under Default Format

RFCALC will be modified to dispatch a network customer's OATT reservations and network resources according to the Default Format during any resynchronization where a valid Hourly, Stack or UC Format file is not available for that network customer. This includes instances where a network customer or SPO does not provide any file or the file does not meet the applicable requirements.

The Default Format option will be a modified form of the UC Format option, where RFCALC creates proxy files for the individual UC Format file and Stack Format file. RFCALC will first create a proxy for the UC Format file by identifying long-term network resources from OASIS and relying on default PMIN and PMAX values. RFCALC will then create a proxy Stack Format File that lists all existing short-term OASIS reservations (including confirmed and accepted reservations) and assigns an dispatch priority based on reverse queue order (*i.e.* the reservation which was queued last will have the highest priority).[5] RFCALC will first dispatch the long-term resources in the UC file to meet as much load as possible. If additional generation is required to meet the projected load requirement, the short-term reservations in the proxy Stack Format file will be dispatched sequentially until load has been met. Any remaining reservations will be treated as "Excess Reservations." If the proxy files created for SPO or any network customer do not provide sufficient generation to equal load, even after RFCALC pulls all OASIS reservations into the dispatch, then RFCALC will dispatch all remaining network resources up to their full output. Entergy will not scale the customer's load down due to concerns regarding the reasonableness of this result.

Process for Modeling Point-to-Point Reservations

The current process models all firm point-to-point reservations (imports and exports) at the reservation level. This practice is not being modified.

[5] This priority is based on the admittedly simplistic assumption that additional service requests placed closer in time to real-time operations represent more economic transactions. Under these circumstances, though, because the network customer has failed to provide better data, this assumption is provides a workable alternative.