White Paper

Aggregated Load Resources providing Non-spin Reserves

Version 0.1

Revision History

Date	Version	Description	Author
10/15/12	0.1.0	Initial Working Draft (separated from white paper: Functional Description of Aggregated Load Resources)	P. Wattles

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1 Background and Introduction

Since 2002, the ERCOT protocols have permitted qualified Load Resources (LRs) to provide Ancillary Services (AS). Participation by LRs in the ERCOT AS markets has been provided almost exclusively by LRs equipped with Under-Frequency Relays (UFRs) providing Responsive Reserve Service (RRS). Participating LRs have consisted exclusively of single-site Loads, typically midsize to large industrial sites.

New technology now enables aggregations of smaller loads to provide effective demand response, and these technologies offer the ERCOT region a sizeable pool of demand response potential; for example, residential load, driven primarily by air conditioning, comprises over 51 percent of ERCOT summer peak demand.[1] However, for a variety of reasons, ERCOT's AS markets have been inaccessible for such aggregations.

ERCOT staff and stakeholders have undertaken a long-term initiative to enable participation by Aggregated Load Resources (ALRs) in all ERCOT AS and energy markets. This white paper focuses on the near-term objective of enabling participation by ALRs in the Non-spin Reserves (Non-spin) market, which has the lowest barriers to entry for LR participation. The Non-spin market should prove attractive to ALR participation for the following reasons:

- Non-spin participation does not require an LR to be equipped with a UFR;

[1] Based on ERCOT data from peak interval on August 3, 2011, collected by customer class from ERCOT systems. Non-Opt In Entity data extrapolated to system-wide total.

- Resources deployed for Non-spin reserves have a 30-minute response time (ramp period), which is an attractive feature for many Loads;
- LR deployments for Non-spin are not locational in nature under current market rules, which improves access for aggregations of smaller customers.

2 Telemetry Validation

A key threshold for participation by ALRs will be their ability to meet ERCOT telemetry requirements.

The telemetry standards incorporated into the ERCOT Protocols, Operating Guides and other technical documents are built upon requirements and "good utility practices" that have been in place between the electric utilities and generation resources for decades. Each Qualified Scheduling Entity (QSE) representing a Load Resource is required to send a defined set of data, representing real-time conditions at the Resource, to ERCOT every 2 seconds. The intervals (refresh rate) and communication path for data sent from the Resource to the QSE are neither dictated nor defined by ERCOT rules; rather they retain the standard of "good utility practice."

The objective of ALR telemetry validation is to create an acceptable standard that provides ERCOT operations with assurance that the telemetered values from the QSE provide an accurate representation of the physical load characteristics of the aggregation. The QSE telemetry signal to ERCOT must meet all existing requirements and specifications as defined in the Protocols, in Section 7 of the ERCOT Operating Guides, and in the ERCOT ICCP

Comment [pw1]: Set windows for collecting premise-level data for telemetry validation. Notification/schedule. Applicable to NOIEs only.

Handbook.[2] QSE telemetry data shall include Real-Time data for each ALR consistent with that required for Load Resources, as described in Nodal Protocols Section 6.5.5.2, Operational Data Requirements

Because the ramp period for a Nonspin deployment is 30 minutes, this white paper proposes that the data provided in the QSE telemetry signal for a single-site LR or ALR providing Nonspin Reserves can be accurately validated using 15-minute interval data at the ALR member Load sites[3]. Such 15-minute data must be time-stamped within appropriate standards in correlation with ERCOT 15-minute settlement clock intervals, and may be provided by the following:

- Interval Data Recorder (IDR) or Advanced Metering Infrastructure (AMI) Electric Service Identifier (ESI ID) metering maintained and read by a Transmission & Distribution Service Provider (TDSP) and submitted regularly to ERCOT via the Texas Standard Electronic Transaction (TX SET) process (for IDR metering) or via the approved file format defined in Retail Market Guides Appendix G (for AMI metering);
- IDR, AMI, or equivalent metering, in the form of a non-settlement ESI ID or a designated unique meter identifier, maintained and read by the TDSP within a Non-Opt In Entity (NOIE), and submitted to ERCOT by the NOIE TDSP either via TX SET or on a schedule and in a format defined by ERCOT;
- Other 15-minute interval metering meeting accuracy standards prescribed in Public Utility Commission of Texas (PUCT) Substantive Rule 25.142 (Submetering), attested by a Professional Engineer, and submitted to ERCOT on a schedule and in a format prescribed by ERCOT.

ERCOT will evaluate the population of the ALR to determine whether the resource-level data may be validated using a statistically-valid sample of the population, or whether telemetry data

[2] Available at http://www.ercot.com/services/mdt/userguides/.
[3] If more granular site- or device-level data is available, ERCOT may work with the meter-reading entity to acquire such data for telemetry validation.

will be required universally from each device or premise for the validation process. *See Statistical Sampling section of this white paper*. It is anticipated that universal 15-minute interval metering will be required for most ALRs, and that statistical sampling will be employed only for extremely large aggregations. Ongoing telemetry validation is dependent upon timely and accurate meter data submissions. ERCOT shall develop metrics for telemetry validation; failure to meet the requirements may result in suspension of the ALR's qualification to provide Nonspin Reserves. An ALR that has been suspended for this reason may be reinstated only upon successful reinstatement of accurate and timely meter data submissions.

3 Uniformity

QSEs representing ALRs will be required, at the time of RARF submittal, to declare whether the ALR will have a static population or whether it will be subject to frequent change in population.

For static population ALRs, ERCOT will assign the performance evaluation methodology following RARF submittal, and the methodology is unlikely to change.

For non-static ALRs, following RARF submittal ERCOT will analyze the Sites comprising the ALR to ensure they meet uniformity standards developed and maintained by ERCOT. To meet the uniformity standard, an ALR should be composed exclusively of loads with similar load shapes and, depending on the size of the aggregation, load magnitude[4]. The uniformity (*a.k.a.* homogeneity) standard will enable scalable growth, statistical sampling consistent with industry standard load research practices, and acceptable churn management within the membership of an ALR. Uniformity will thus ensure accuracy in ERCOT measurement & verification of ALR performance.

Comment [pw2]: Document to be developed and posted by ERCOT Staff.

[4] Prospective ALRs consisting of combinations of residential, commercial and/or industrial premises will automatically fail the uniformity test.

As ALR populations change, QSEs will be required to ensure that the ALR continues to meet the uniformity standard as determined by ERCOT. ERCOT at its discretion may conduct periodic uniformity reviews for an ALR. It is expected that it will be possible for an ALR to fail a uniformity test in its early formative stages, but later to qualify as uniform as the aggregation grows.

4 Management of Changes to ALR Populations

Some ALR populations are expected to be dynamic and scalable. Particularly at the residential level, ALR populations have the potential to reach into the tens of thousands of customers, with dynamically changing populations.

Changing ALR parameters will be managed by the Resource Entity, the QSE, the TDSP, the meter-reading entity (if not the TDSP) if applicable, and ERCOT as follows:

1. ALR parameters will be established in the Network Model by the ALR's Resource Entity using the Resource Asset Registration Form (RARF), similar to how parameters are established today for Generation Resources and LRs. ALRs that are subject to relatively high levels of membership churn — that is, dynamically changing populations — should set their RARF parameters at levels that will accommodate several months of potential growth so as to reduce the need for frequent RARF submissions.
2. ALR population changes may be submitted to ERCOT on a monthly basis on the first day of each calendar month. At the outset, population changes will be submitted in a file format specified by ERCOT. Eventually, population changes will be managed via a new interface accessible by participating QSEs, TDSPs and ERCOT:
    a. In the competitive choice areas, QSEs will manage the ALR population by ESI ID, which ERCOT will then cross-reference to its internal systems.
    b. In the NOIE territories, ~~QSEs~~ the NOIE QSE or NOIE TDSP will provide a unique meter identifier for each member of the aggregation ("Site"). If the meter ID and meter data are provided by the NOIE QSE, the QSE~~s~~ ~~and TDSPs~~ will be required to affirm the accuracy and integrity of ALR membership and meter data. If the meter ID and meter data are provided by the NOIE TDSP, no such affirmation is required.

3. ALR parameters applicable to the Day-Ahead and Real Time ERCOT markets will be established by the QSE via the Current Operating Plan (COP) and Market Operations Interface (MOI) inputs to the ERCOT Energy and Market Management Systems (EMMS). Such changes may be made as part of the QSE's regular COP and MOI submissions.
4. ALR parameters related to real-time performance and the Ancillary Services Monitor will be submitted via telemetry, as detailed elsewhere.
5. For an ALR in which statistical sampling is in place, ERCOT will periodically review the ALR population churn to determine whether the existing statistical sample remains sufficiently accurate. If ERCOT determines that a change to the statistical sample is warranted, ERCOT and the meter-reading entity shall coordinate revisions to the list of Sites from which resource-level data is being collected.

5 Network Modeling: Texas Load Aggregation Points (TLAPs)

Opening the ERCOT markets to participation by aggregations of distribution-connected small commercial and residential loads will require development of alternative Network Modeling provisions. This section of the white paper sets forth ERCOT's recommendation for those provisions during the interim phase of ALR access. This interim phase is applicable to ALRs that are qualified only to provide Nonspin Reserves and that meet the other requirements detailed herein. Enabling participation by ALRs in Responsive Reserve Service, Regulation Service, and (eventually) the ERCOT Real-Time Energy Market will require more stringent and granular network modeling.

In the current market, LR participation in Ancillary Services is limited to individual Loads which are modeled in the ERCOT system as part of the Network Operations Model. These LRs are associated with a single transmission element ("Load in ERCOT CIM"[5]) in the ERCOT System. The network modeling requirement exists for LRs today because it is a requirement for all Resources (generation or load), even though LRs are eligible only for Ancillary Services and not for real-time energy dispatch.[6]

The location of a Load Resource in the Network Model is identified in the Resource Asset Code, specific to a Load in the ERCOT CIM. To accommodate distribution-connected Loads, ERCOT and the TDSPs have developed acceptable methodologies for assigning single-site Load Resources to a specific Load in the ERCOT CIM. This process is subject to a tolerable level of uncertainty, depending on local conditions at a given time.

[5] "Load in ERCOT CIM" is defined as the level to which the TDSP is modeling Load in the ERCOT Common Information Model (CIM).

[6] LRs providing AS are technically subject to locational dispatch for purposes of congestion management; however, such deployments are exceedingly rare. Instead, LRs providing AS are typically dispatched as a block or in groups for purposes of addressing system-wide capacity needs.

The eventual long-term goal for ALR participation in the markets is to allow the membership of an ALR to associate with multiple Loads in the ERCOT CIM, preserving the ability of the ERCOT ISO to dispatch resources based on their location and allowing QSEs maximum flexibility in growing the ALRs through customer recruitment. The interim approach, applicable only to Nonspin Reserves, will enable ALR access to the Ancillary Services market in the near term without requiring significant system changes, while honoring the key components of the long-term solution and preserving operational reliability for the ERCOT ISO.

Both approaches to ALR modeling will adhere to the concept of load aggregation points, which are geographical areas described here as Texas Load Aggregation Points (TLAPs).

ALR participation in Nonspin Reserves proposes to meet the network modeling requirement by assigning ~~the~~ an ALR~~'s entire DR capacity~~ to a single Load in the ERCOT CIM, via a collaborative process between ERCOT and the TDSP(s), subject to the following conditions:

1. All Sites in the ALR are situated within the same TLAP, as described below.
2. The DR capacity (in MW) of the ALR does not exceed the load on the electrical bus associated with the Load point to which the ALR is assigned.
3. The DR capacity (in MW) of the ALR does not exceed a level that would pose potential operational concerns, including but not limited to congestion. The level will be established by ERCOT specific to the ALR.
4. Any other ALRs within the TLAP, regardless of QSE, are assigned to different Loads in the ERCOT CIM.
5. The cumulative DR capacity (in MW) of all ALRs within the TLAP does not exceed a level that would pose potential operational concerns, including but not limited to congestion. The level will be established by ERCOT specific to the TLAP.

Comment [pw3]: Define how this value is arrived at.

Comment [pw4]: Use different term.

This white paper acknowledges that the interim proposal will eventually prove unworkable because ALRs can be expected to grow in size to levels that cannot be supported by the "single Load in the ERCOT CIM" model. Additionally, as ALRs grow, the interim solution will prove inconsistent with the concept of locational dispatch.

In addition, this white paper acknowledges that the interim approach will naturally cap the size of any ALR to the available Load at the designated Load in the ERCOT CIM (by definition, a much smaller MW value than would be available across the TLAP), and as such may require aggregators to recruit and manage a larger number of ALRs to achieve the same DR capacity.

TLAP General Characteristics

1. A TLAP is defined as a collection of Loads in the ERCOT CIM in a geographically-concentrated area typified by little or no internal transmission congestion, but which may be subject to congestion at the interface with neighboring TLAPs.
    - The TLAP is conceptually similar to the Sub-LAP system designed by the California ISO for its Reliability Demand Response Product[7].
2. ERCOT will designate TLAPs.
3. TLAPs are envisioned to be smaller than the current four primary Load Zones in ERCOT, although in some cases a NOIE Load Zone may qualify as a TLAP.
4. When possible and practical, TLAPs will be contained within the footprint of a single TDSP (competitive choice area or NOIE).
5. The entire population of any ALR (Sites in the aggregation) is confined to a single TLAP.
6. Multiple ALRs, represented by one or more QSEs, may exist within a TLAP.

Comment [pw5]: Discuss development of translator to make it easier for QSEs to determine which TLAP an ESI ID is located in; also where TLAP boundaries are (by known geographical characteristic.)

ERCOT and stakeholders may develop a translator interface that could be designed to make it easier for QSEs and aggregators to associate specific ESI IDs to TLAPs, and also to more granularly define TLAP boundaries by certain geographical characteristics[8].

ERCOT and the TDSPs shall develop a communications interface that enables both parties to be continuously aware of new ALR market entrants and of changes to the membership of existing ALRs.

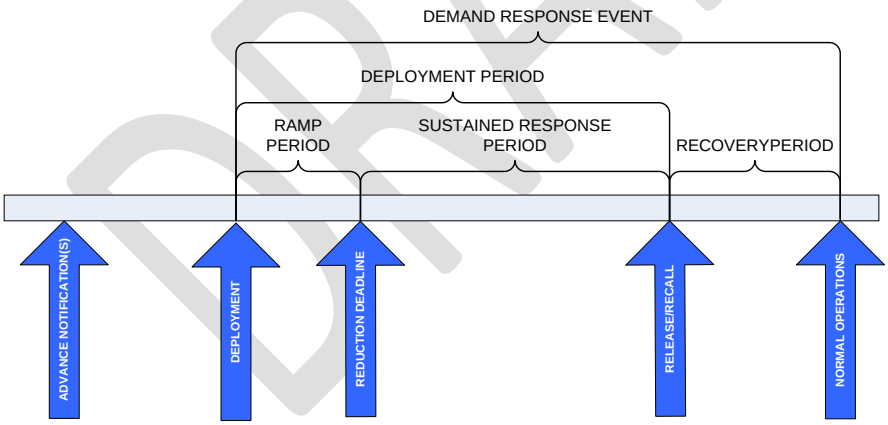
[7] http://www.ercot.com/calendar/2011/02/20110225-DSWG. There are 23 Sub-LAPs within the CAISO footprint.
[8] TLAPs are not defined by county lines, city limits, or ZIP Codes, but rather by transmission system constraints.

6 Measurement & Verification

ALR participation in the ERCOT markets will require performance measurement and verification (M&V) consistent with industry standards and good utility practice, and comparable to that applicable to single-site Load Resources and Generation Resources.

6a. Event Performance M&V

This subsection describes how ERCOT proposes to measure and verify the performance of an ALR in response to a Nonspin Reserves deployment event, which is initiated via electronic instruction. ALR demand response performance evaluation methodologies shall be consistent with the national standards for DR M&V developed by the North American Energy Standards Board (NAESB) and subsequently adopted by the Federal Energy Regulatory Commission. The following figure is the timeline terminology graphic for a DR event as approved in the NAESB standards:



Also relevant to this white paper is the following NAESB definition:

Demand Reduction Value: Measurement of reduced electricity usage by a Demand Resource during a Demand Response Event.

ERCOT will assign an ALR to one of the following performance evaluation methodologies, which have been adopted as part of the NAESB standards, and will use the applicable methodology to evaluate ALR performance:

1. *Meter Before/Meter After (MB/MA)*. This performance evaluation methodology is currently in use in ERCOT for M&V of UFR-type Load Resources providing RRS. ERCOT may assign an ALR to the MB/MA methodology based on the aggregation's flat load shape (e.g., load factor of X or greater, as determined by ERCOT). Performance is calculated by recording the resource's telemetered load over the five minutes preceding the dispatch instruction, and comparing it to the ALR's telemetered load at the reduction deadline, or end of the appropriate ramp period (for example, in the case of RRS dispatched by VDI, 10 minutes).
2. *Baseline.*[9] A baseline is defined as an estimate of where the load would have been in the absence of the DR deployment. Baselines are appropriate for loads or aggregations of loads that are predictable in nature, and therefore can be modeled based on their historical usage patterns. This methodology may apply to either a single-site LR or an ALR. Baseline methodologies vary by region and by their applicability to a specific load or aggregation. ERCOT has developed three different baseline types for purposes of DR M&V for Emergency Response Service. Implementation of this performance evaluation methodology for Ancillary Services or the Real-Time Energy Market will require a change to the Protocols.
3. *Maximum Base Load (MBL)*. This methodology is appropriate for loads or aggregations with unpredictable load shapes that are therefore ineligible for the meter before/meter after methodology and are also incapable of being accurately baselined.[10] If ERCOT determines that ALR performance cannot accurately be measured via MB/MA or a

[9] NAESB Wholesale DR M&V Standards differentiate between resources with universal interval metering ("Baseline Type 1") and those that are measured using statistical sampling ("Baseline Type 2"). Either method is applicable to ALR M&V and the distinction is not made here.

[10] MBL is in use in ERS under the name "Alternate Baseline," which is a misnomer because the MBL does not attempt to estimate where the load would have been in the absence of the deployment.

baseline assignment due, ERCOT will assign the ALR to the MBL. (In addition, a QSE may elect to assign any ALR to the MBL.) Under the MBL, the load or aggregation commits to operating at or below a fixed and known level throughout the sustained response period. The MW obligation of an MBL resource should be no higher than the resource's average load (over the committed period of time) minus its declared MBL.

Comment [pw6]: We need to determine whether this should be part of the interim white paper, or scrapped altogether.

ERCOT will assign ALRs to their appropriate performance evaluation methodology based on an analysis of the ALR's historical meter data. This is proposed to be a manual process at the outset. Performance evaluation methodology assignments will depend on the following factors:

- The predictability of the load as determined through analysis of historical meter data.
- The amount of historical interval meter data available.
- Whether the ALR's membership is subject to ERCOT's uniformity requirements.

ERCOT may determine that an ALR's performance is capable of being accurately measured and verified under multiple performance evaluation methodologies (potentially including multiple baseline types); in such cases, ERCOT will provide the QSE with the list of applicable methodologies (or baseline types), allowing the QSE and ALR to select their preferred option.

ALR performance will be measured and verified by ERCOT through the following process:

Comment [pw7]: Review Protocols regarding portfolio-first performance evaluations. Also move from CLREDP concept to different performance metric.

Real-Time Metrics

1. For ALRs assigned to a baseline type, the key metrics in real-time evaluation will be the following QSE telemetry data values:
    a. Net Real Power Consumption (NRPC), which represents the aggregated real-time Load for all Sites in the ALR; and
    b. Scheduled Power Consumption (SPC). For ALRs assigned to a baseline type, the required SPC values will be expanded to include both current requirements and the ALR's projected power consumption covering the next eight settlement

intervals (two hours). (Projected load values will be provided in blocks of X seconds, as determined by ERCOT.)

Comment [pw8]: Reference separate document)

As is required of LRs today, these values will be communicated by the QSE to ERCOT every two seconds via QSE Telemetry[11]. Under normal (non-deployment) conditions, SPC will be equal to NRPC.

2. Following dispatch and before the applicable reduction deadline, the values for NRPC should begin to deviate from the values for SPC. At this point, the values will be represented in one of the following scenarios, depending upon the applicable performance evaluation:
    a. If the ALR is assigned to the MB/MA methodology, the "meter before" value will be calculated as the average of all NRPC values for the five minutes preceding the dispatch instruction, and the SPC values throughout the Sustained Response Period should be equal to this value.
        i. The ALR's real-time demand reduction value for the event will be calculated as the average of the difference between the NRPC and the SPC throughout the Sustained Response Period.
    b. If the ALR is assigned to a baseline type, the SPC values will represent the real-time baseline, and should therefore comprise a reasonable estimate of where the ALR's load would have been in the absence of the deployment, as calculated by the ALR and the QSE.
        ii. The ALR's real-time demand reduction value will be calculated as the average of the difference between the NRPC and the SPC (the baseline), calculated on a five-minute basis, throughout the Sustained Response Period.
    c. If the ALR is assigned to the MBL methodology, the ALR's NRPC should remain at or below its declared MBL throughout the Sustained Response Period of an event. The ALR's SPC during the Sustained Response Period should represent

[11] Protocols Section 6.5.5.2. Note that SPC is explicitly required at present only for Controllable Load Resources.

the rolling average of its NRPC for the preceding 30 days of the same day-type (weekday or weekend/holiday). In addition, for the non-deployment intervals in the ALR's obligation period, the ALR's capacity obligation may not exceed the value of its SPC minus its declared MBL[12].

i. The ALR's real-time demand reduction value will be calculated as the average of the difference between the NRPC and the SPC, calculated on a five-minute basis, throughout the Sustained Response Period.

Comment [pw9]: Keep or scrap?

Control Group M&V

1. ERCOT may designate certain ALRs as candidates for M&V via Control Group analysis. Candidate ALRs would be required to have large numbers of Sites in the membership. In these cases, ERCOT would randomly assign Sites to sub-groups of roughly equal size as they are identified by the Resource entity; the size of the sub-groups will be determined by ERCOT to accurately represent the total load of the ALR to produce the baseline for a DR event. ERCOT would designate periodically one of the sub-groups to act as the control group for the ALR, and QSEs would be required to disarm or otherwise disable the DR capability of the members of the Control Group for a designated Operating Day (or series of Operating Days), and would adjust their offers accordingly[13].
2. Designation of which sub-group would act as the Control Group would need to change on a frequent basis, as determined by ERCOT, to preserve the behavioral integrity of the Control Group Sites.
3. Following an event, ERCOT would compare the performance of the ALR membership to the Load characteristics of the Control Group, with the Control Group performance serving as the baseline.

[12] This availability calculation, which is unique to the MBL methodology, assures that the ALR is not being overcompensated.
[13] Control Group size would be controlled so as to have minimal effect on the ALR's overall DR capacity.

After-the-Fact Performance M&V

1. ERCOT anticipates that it will enhance its systems to perform the following M&V functions on an automated basis, with occasional manual interventions needed.
   a. ERCOT may validate the ALR's real-time demand reduction value (as telemetered by the QSE) by comparing it to and ensuring consistency with the ALR's actual energy usage throughout the demand response event, as determined through evaluation of interval meter data.
   b. The validated demand reduction value should be within X range of the ALR's DR obligation at the time of dispatch. The value of X should be consistent with the performance standards applicable to Generation Resources and single-site Load Resources.

7 Statistical Sampling

ERCOT will permit statistical sampling of an ALR's membership only for ALRs that pass the uniformity test (see *Uniformity* section) and only if the ALR is deemed by ERCOT to be capable of statistical sampling consistent with industry best practices.[14] Statistical sampling will be deployed primarily for purposes of reducing cost and complexity in telemetry validation. In addition, especially for ALRs with large numbers of Sites, the samples may be used for event performance validation using 15-minute interval meter data.

[14] An example of industry best practice is the lagged-dynamic sampling methodology detailed in the former ERCOT Zonal Protocols, Section 18.7.2, Load Profiling of ESI IDs under Direct Load Control and Load Profiling Guide Section 16.2, Direct Load Control.

As a general rule, in order to meet the standard of "industry best practices," data from the sample must produce estimates of sufficient accuracy that allows the ALR to qualify for M&V via a baseline type and must reflect the behavior of the ALR as a whole to an acceptable level of accuracy as determined by ERCOT.

Statistical sampling accuracy is best ensured if both the membership of the ALR and the QSE are unaware of which members of the aggregation comprise the sample. Accordingly, ERCOT will design ALR statistical samples will pull appropriate data as necessary without disclosing the sample's identity to the QSE or the Resource Entity.

In order to ensure integrity of statistical sampling the QSE shall submit descriptive information to ERCOT about the prospective ALR, including but not limited to:

- Population description, including premise type;
- History and projection of growth in program participation;
- Description of Load (devices) that will be curtailed:
- Load curtailment technology;
- Load curtailment deployment strategy (e.g., cycling strategy);
- Demand reduction per premise, including estimation methodology;
- Description of contractual restrictions with customers, if appropriate; and
- M&V technology, equipment specifications, and quality control procedures; and
- A complete list of current Sites in the ALR. In the case of ALRs in a competitive choice area, this means ESI IDs; in a NOIE territory, this means a list of premises and unique meter IDs as prepared by the NOIE TDSP.

ERCOT will communicate to the QSE the results of its statistical sampling review. A qualified sample may need to change based on growth and/or churn within the ALR.

Comment [pw11R10]: Statistical sampling section may be deleted from Nonspin white paper. Applicable only to RRS, Reg and SCED, where more granular telemetry validation data is required.

8 Settlement

Nonspin Reserves are procured by ERCOT in the Day-Ahead Market (DAM), either through competitive offers or via QSE Self-Provision, for each hour of the following Operating Day. QSEs representing Resources providing Nonspin are compensated as follows:

- If the capacity is offered competitively into the DAM, the QSE is paid a capacity payment per MW equivalent to the Market Clearing Price of Capacity (MCPC).
- If the capacity is self-provided by a QSE representing a Load Serving Entity, it offsets some or all of the QSE's Load Ratio Share obligation for the service.

Because there are no additional energy payments associated with the provision and deployment of Nonspin, no impact is anticipated to either Settlement Points or Settlement Point Prices for this interim phase of ALR enablement.