

Revision Request Comment Form

RR #: 468	Date: 8/27/2021
RR Title: Order 2222 Compliance	
SUBMITTER INFORMATION	
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OBJECTIVE OF REVISION	
<p><i>Provide the objective language from the revision request for which you are submitting comments.</i></p> <p>Objective section copied directly from RR # 468:</p> <p><i>“In September 2020, FERC issued Order No. 2222 to amend regulations and adopt reforms to remove barriers to participation of distributed energy resource (DER) aggregations in RTOs and ISOs. FERC determined current market rules designed for traditional resources can create barriers to entry for emerging technologies and thus are unjust and unreasonable and may restrict efficient operation of resources and competitiveness of wholesale markets. The requirements outlined in Order No. 2222 include:</i></p> <ol style="list-style-type: none"> <i>1. Defining terms for Distributed Energy Resources (DER) and Distributed Energy Resource Aggregators (DERA).</i> <i>2. Provisions for small utilities to allow participation of DERAs.</i> <i>3. Establishing DERAs as Market Participants and allowing DERAs to register under one or more participation models that accommodate the physical and operational characteristics of the DER Aggregation.</i> <i>4. Establishing a minimum size requirement for DER Aggregations that does not exceed 100 kW.</i> <i>5. Addressing locational requirements for DER Aggregations.</i> <i>6. Addressing distribution factors and bidding parameters for DER Aggregations.</i> <i>7. Addressing information and data requirements for DER Aggregations.</i> <i>8. Addressing metering and telemetry requirements for DER Aggregation.</i> <i>9. Addressing coordination between SPP, the DERA, the Distribution Utility and the relevant electric retail regulatory authority.</i> <i>10. Addressing modifications to the list of resources in a DER Aggregation.</i> <i>11. Addressing a Market Participant Agreement for DERAs.</i> <p><i>Early in 2021, the MOPC established the Order 2222 Task Force to meet to discuss Tariff language and other governing documents to ensure compliance with the Order. The Task Force is comprised of the Chairs of the stakeholder groups, industry groups, and State Regulators that will be impacted by the Order. The Tariff language herein represents months of discussions with the Order 2222 Task Force and also on Day 2 of the monthly MWG meeting, members of several of the stakeholder group represented on the Task Force join the discussion with questions and suggestions on compliance language.</i></p> <p><i>In June 2021, SPP staff began engaging the Distribution Utilities in the SPP footprint to review and discuss the requirements of the Order with these parties that are not typically involved with SPP and its stakeholder process. To date, staff and SPP stakeholders have reviewed issues such as the DERA registration process, interactions necessary between SPP, the DERA, the Distribution Utilities and the regulatory bodies of those Distribution Utilities to facilitate DER Aggregations in the markets, and an evaluation process required by the Order to allow Distribution Utilities to evaluate the safety and reliability impacts on their systems of DERs joining aggregations. In August, the portions of the Tariff language included in this RR, were provided to the Distribution Utilities to assure their opportunity to see what the requirements from the Order will include that involve the Distribution Utilities participation.</i></p> <p><i>SPP staff will be seeking endorsement from the 2222 Task Force that this Tariff language complies with the requirements in the Order and in the coming months, the other stakeholder groups will go through the language in detail to provide understanding of the language. Approval of the language will be sought from the primary stakeholder groups including the MOPC and the SPP Board of Directors in the January cycle. The compliance filing is due to FERC by April 28, 2021.”</i></p>	

COMMENTS

Advanced Energy Economy (“AEE”), Climate + Energy Project, Natural Resources Defense Council, Sustainable FERC Project, and Sierra Club Kansas Beyond Coal (“PIOs”) respectfully submit the following comments to the SPP Order 2222 Task Force (“Task Force”) on the draft changes to SPP’s Open Access Transmission Tariff (“Tariff”) and Market Protocols published for public stakeholder review and feedback in RR 468 on August 16, 2021. These comments do not necessarily represent the individual positions of the full diversity of AEE member companies. We appreciate the opportunity to provide feedback and look forward to continuing to work with SPP staff and membership on SPP’s Order 2222 compliance filing to FERC.

PIOs offer the following comments to accompany the proposed redlines in the revision request below.

Market Protocols:

- Section 1: No comments or revision suggestions.
- Section 4.2.2.5.10 (NEW): PIO comments:

1- SPP’s Tariff and Market Protocols should include a new Resource type for DER Aggregations to enable full market participation and capture the unique operational characteristics of DER Aggregations, while also allowing DER Aggregations to register as any other valid resource type for which they may be eligible under the SPP Tariff and Market Protocols. Revisions are offered below to reflect this comment.

We note that paragraph 142 of Order 2222 emphasizes the need for heterogeneous aggregations that have capabilities none of the constituent resources do and are concerned that mapping DER Aggregations onto existing resource types may lose these benefits. We suggest evaluating a set of use cases for heterogeneous aggregations against existing resource types to identify lost value. Two aggregations of interest are (1) solar plus storage and (2) demand response plus behind-the-meter (but possibly injecting) generation.

2- Telemetry and metering requirements should be consistent with operational needs for actionable grid operator response and settlement. Note Order 2222 at 268, “we [FERC] expect that RTOs/ISOs will base any proposed metering and telemetry hardware and software requirements for distributed energy resource aggregations on the information needed by the RTO/ISO while avoiding unnecessary requirements that may act as a barrier.”

Operator actionable information should be all that is required for telemetry. This may mean no telemetry for small (<10MW) resources that are not providing ancillary services. Large grids such as SPP automate response to balancing loads through various ancillary services. The vast majority of DER Aggregations are expected to be small – consistent with the impact of a relatively large retail load’s variability. We also note that in many cases, DERs participate under retail tariffs with no telemetry to SPP, suggesting that operational issues with un-telemetered resources are manageable. Telemetry requirements for such resources should be based on *bona fide* operational needs, and not simply be treated as the price of admission to wholesale markets.

Metering requirements should be consistent with the requirements needed for settlement of market products, and consider capabilities of existing retail meters. For example, PJM requires only hourly metering for DR resources providing energy and capacity/reliability services and allowed settlement timelines that matched distribution utility meter read schedules. This treatment increases market efficiency and lowers barriers to entry for small resources by enabling settlement of hourly energy contributions against the average of 5-minute location marginal price (LMP) settlements. We would urge such treatment for DERs. Metering needs should match the needs of the service provided. More robust metering is appropriate for resources providing 10-minute reserves and regulation service. Revisions are offered below to reflect this comment.

3- Order 2222 is clear on its requirement that SPP allow DER Aggregations that are “as geographically broad as technically feasible” to participate in its markets (*See* Order No. 2222, 172 FERC ¶ 61,247 at P 188). As Advanced Energy Management Alliance (“AEMA”) stated in recommendations submitted to the Order 2222 Task Force on 4/1/2021, the “efficiency and economies of scale relative to multi-node homogeneous aggregation of DER make aggregation across multiple nodes an important element of participation for some specific instances.” AEMA further suggested the Task Force consider aggregations across multiple nodes at a limited scope, for example over multiple PNodes within a defined SPP Zone or Balancing Area. Aggregations over a certain limit, for example 10 MW, might be limited to a single node. It is also worth noting, SPP’s current approach to Demand Response aggregations allows load to be aggregated across multiple electrically equivalent PNodes. However, Demand Response resources registering at an aggregated pricing node (“APNode”) are limited to resources located at a “single location” (how this may be applied to DER Aggregations is unclear). If DER Aggregations across multiple PNodes or APNodes are not technically feasible, SPP should justify and

explain why not (and, further, explain why other resource types may be treated differently in this regard under SPP's Tariff and Market Protocols). If there is a threshold or level at which multi-nodal DER Aggregations become technically infeasible, PIOs recommend SPP conduct further analysis and provide additional information on SPP's evaluation of the feasibility of participation of multi-nodal DER Aggregations to stakeholders for comment. Revisions are offered below to reflect this comment.

If full multimode aggregation is not supportable, at a minimum, we suggest:

- To ensure all DERs have a path to market, 'orphan' resources totaling less than 100kW at a node be allowed to aggregate across nodes.
 - Aggregations that will only provide ancillary services be allowed to aggregate within a Reserve Zone.
- Section 6.1: PIOs suggest language to provide for multi-node aggregation in Tariff (OATT) Section 12.8 below.
 - Section 6.2.3: PIOs propose revisions to include DER Aggregations with assets across multiple nodes and locations. Revisions are offered below to reflect this comment.
 - Appendix E: RR 468 proposes to extend the current 3-month time period for "Terminating a Resource due to Deactivation, Retirement or Mothball" to 12 months. This represents a drastic and unjustified extension of time as applied to DER Aggregations. This proposed change would create an unreasonable barrier to entry and create unnecessary risks to participation of DER Aggregations in SPP's markets. PIOs recommend SPP evaluate whether the current 3-month window is reasonable as applied to DER Aggregations, and whether it should be shortened to 30 days or less under certain circumstances. Additionally, PIOs recommended SPP undertake a review of all timing elements included in this section to determine whether they are just and reasonable as applied to DER Aggregations under Order 2222

The time periods and procedures described in Appendix E seem in general to be unwieldy for mass market programs or in a competitive environment. Mass market programs may well have many thousands of participants, with assets joining and leaving on a daily basis. It is unclear if the Appendix E procedures would handle this. Order 2222 mandates a competitive retail market for DER aggregation, and we are concerned that the long time periods to change asset owners may create anticompetitive barriers. Consider that in regions with retail choice, RTOs generally assign switching customers to their new LSE within a day or two.

We suggest SPP take advantage of the aggregation model to hide the complexity of individual DERs entering and leaving, and consider an approach where changes to the individual resources in an aggregation be treated similarly to "Resource Reasonable Limit MW Value Changes."

- Appendix D.9.1: No comments or revision suggestions.

Tariff (OATT):

- Section 1, Definitions: PIO Comments:

1- Expand the definition of "Distributed Energy Resource Aggregation" to enable all eligible Market Participants to offer DER Aggregations into SPP's markets. The proposed language appears to limit registration of DER Aggregations to Distributed Energy Resource Aggregators, rather than Market Participants more broadly. Revisions are offered below to reflect this comment.

2- Broaden the definition of "Resource" in the Tariff to capture the unique operational characteristics and capabilities of DER Aggregations. RR 468 proposes to change the current definition of "Resource" to "An asset that injects energy into the transmission grid or reduces the withdrawal of energy from the transmission grid." (*underline added*) It further proposes to remove the following language from the definition of Resource: "including a Demand Response Resource, a Variable Energy Resource, a Dispatchable Resource, External Resource, External Dynamic Resource, a Quick Start Resource." "Asset" is not currently in tariff definitions, but it is referenced in the Market Protocols and draft Participation Agreement (Attachment AH).

As proposed, the definition of "Resource" appears to exclude heterogenous DER Aggregations and many technology configurations contemplated under Order 2222, and could result in the unintended consequence of inadvertently incentivizing participation purity – which is clearly inconsistent with the intent of Order 2222. PIOs provide possible revisions to the definition of Resource to make it technology-neutral and inclusive of flexible, heterogenous DER Aggregation resources capable of injecting, reducing and/or increasing withdrawal of energy on the transmission grid. Revisions are offered below to reflect this comment.

- Attachment AE – Section 2.2 Registration (20) (new subsection): PIOs provide revisions to accommodate the creation of a new market resource type for DER Aggregations, while also allowing DER Aggregations to register as any valid Resource

type for which they may qualify. PIOs also provide suggestions to remove unnecessary barriers to registration and streamline the process.

- Section 2.19 (new section): PIOs provide revisions to accommodate the creation of a new market resource type for DER Aggregations, while also allowing DER Aggregations to register as any valid Resource type for which they may qualify. PIOs also offer revisions to reflect our previous comments concerning metering and telemetry and allowing multi-nodal aggregations of DER Aggregations above.
- Section 2.8.3 (new section): No comments or revision suggestions.
- Section 12.1 (new section): PIOs suggest removing “through at DERA” portion within new section heading.
- Section 12.2 (new section): Minor revision suggested for consistency in terms.
- Section 12.3 (new section): PIOs offer revisions to streamline and mitigate risks in process for “double-counting” check in registration.
- Section 12.4 (new section): No comments or revision suggestions.
- Section 12.5 (new section): No comments or revision suggestions.
- Section 12.6 (new section): No comments or revision suggestions.
- Section 12.7 (new section): No comments or revision suggestions.
- Section 12.8 (new section): PIOs provided revisions to reflect recommendation that SPP consider multi-node aggregations.
- Section 12.9 (new section): No comments or revision suggestions.

Section 12.10 (new section): SPP has proposed that the DERA must establish real time telemetry through the ICCP connection. PIOs support having any necessary real time telemetry requirements to be provided at the Aggregation level. As stated in comments above (and at Task Force meetings) PIOs remain concerned that the value of real time telemetry for small size resources is not commensurate with the value. PIOs proposes that SPP establish a minimum size for which real time telemetry requirements should be provided (for example, 10 MW as proposed in revision language draft below). ICCP requirements should be relational to the services being provided. Revisions are offered below to reflect these comments.

- Section 12.11 (new section): No revision suggestions. We support AEMA’s suggestion that if SPP continues to retain penalties for non-performance, the current levels of application should remain the same as they are today. For example, the URD threshold of 5 MW.
- Section 12.12 (new section): No comments or revision suggestions.
- Section 12.13 (new section): PIOs propose alternative language aligned with comments on Attachment AE – Section 2.2(20) above.
- Section 12.14 (new section): No comments or revision suggestions.
- Section 13 (new section): Order 2222 (at 292-297) requires that distribution utility review be transparent and provide specific review criteria. The proposed tariff does not meet this requirement, specifying a DU review process that is essentially a black box. We read Order 222 paragraph 296 as establishing that simply saying the review process covers “safety and reliability” is not sufficient; FERC directs RTOs/ISOs to establish specific criteria. Lack of transparency or excessive DU discretion over review creates opportunity for anti-competitive behavior. This section should list, or delegate to the DUs to file, specific screens, studies, and criteria that will be reviewed.

FERC also “expect[s] that the state and local interconnection processes for distributed energy resources will provide the appropriate platform to address and study potential distribution system impacts” (Order 2222 at P 294). Nearly all distribution utilities have detailed state jurisdictional interconnection criteria that already address distribution system safety and reliability. In developing the specific criteria for this section, SPP should be mindful that the DU study here does not duplicate studies already performed as part of the retail interconnection process. Additionally, DU rejection of DER participation must be limited to grounds not covered by the retail interconnection process, and must clearly document what distribution system issues are specifically created by wholesale market participation.

- Attachment AH Appendix 1: No comments or revision suggestions.
- Attachment AH Appendix 2 (new appendix): PIOs proposes alternative language consistent with the requirements of Order 2222 and the Federal Power Act.

PROPOSED REVISION

Provide proposed modifications (redlined) to the revision request for which you are providing comments. Use language from the revision request and redline with your additional edits.

Market Protocols

4.2.2.5.10 Distributed Energy Resource Aggregation (DER Aggregation)

DER Aggregations may be registered as a Distributed Energy Resource Aggregation Resource (DERAG) or any other valid Resource type and are subject to the same service provision rules as any other Resource within that type. The Market Participant registering the DER Aggregation must meet the requirements described in Section 2.2(20) of Attachment AE of the SPP Tariff, Section 2.19 of Attachment AE of the SPP Tariff, Section 2.8.3 of Attachment AE of the SPP Tariff, and Section 12 of Attachment AE of the SPP Tariff.

The Market Participant is required to submit telemetry data through ICCP consistent with the telemetry required for the registration type under which the DER Aggregation is registered. If the DER Aggregation less than or equal to 10 MW, ICCP telemetry is not required. For example, if the DER Aggregation is comprised of solar generating resources and the Market Participant registers the DER Aggregation as a DVER then the telemetry data must also include information required in Section 4.1.2.6.

DER Aggregations that include Demand Response must identify a corresponding Demand Response Load Asset and its associated PNode or APNode at which the load will be reduced as described in Section 6.2.3.

6.2.3 Demand Response Load Asset

As part of the registration of a Dispatchable Demand Response Resource, a Block Demand Response Resource, or DER Aggregation, the Asset Owner must also identify a corresponding Demand Response Load Asset and its associated PNode or APNode at which the load will be reduced. A Demand Response Load Asset may only be represented by an APNode if the load is in the same location (e.g. a single industrial process served by more than one bus). The PNode or APNode of the Demand Response Load Asset must be contained within the associated Dispatchable Controllable Load, DER Aggregation Resource, or Block Demand Response Settlement Location definition and have a single Meter Data Submission Location.

SPP Tariff (OATT)

Section 1 (Main body) of the Tariff Definitions

Distributed Energy Resource (“DER”): Any resource located on a Distribution Network, any subsystem thereof, or behind a customer meter.

Distributed Energy Resource Aggregator (“DERA”): ~~The~~ An entity that aggregates one or more Distributed Energy Resources for purposes of participation in the Energy and Operating Reserve Markets.

Distributed Energy Resource Aggregation (“DER Aggregation”): One or more Distributed Energy Resources registered as ~~an aggregation by a DERA~~ a Resource by a Market Participant for purposes of participation in the Energy and Operating Reserve Markets.

Distribution Network: Electric delivery facilities and equipment connecting the transmission grid to the retail electricity customer that are not included in the Transmission System.

Distribution Utility: An electric utility that owns and operates a Distribution Network.

Resource: An asset that is capable of one or more of the following: (a) injecting energy into the transmission grid, (b) reducing the withdrawal of energy from the transmission grid, and (c) increasing the withdrawal of energy from the transmission grid that has been registered in the market.

Market Participant: An entity that generates, transmits, distributes, purchases, or sells electricity or provides Ancillary Services with respect to such services (or contracts to perform any of the foregoing activities) within, into, out of, or through the Transmission System or an Upgrade Sponsor receiving Incremental LTCRs. Market Participant expressly includes: (a) Transmission Owner(s) and any of their Affiliates including Transmission Owners providing transmission service to: (i) bundled retail load for which such Transmission Owners are taking neither Network Integration Transmission Service nor Firm Point-To-Point Transmission Service under this Tariff; and (ii) load being served under Grandfathered Agreements for which such Transmission Owners are taking neither Network Integration Transmission Service nor Firm Point-To-Point Transmission Service under this Tariff, (b) Transmission Customers, (c) Network Customers, (d) Generation Interconnection Customers, (e) any Eligible Customer offering Resources for sale into the Energy and Operating Reserve Markets that executes the Service Agreement specified in Attachment AH, or on whose behalf an unexecuted Service Agreement has been filed at the Commission, (f) any retail customer or eligible person that is not precluded under the laws or regulations of the relevant electric retail regulatory authority including state-approved retail tariff(s) from participating directly in wholesale demand response programs in the Energy and Operating Reserve Markets and that is technically qualified to offer Demand Response Load (as defined in Attachment AE of this Tariff) into the Energy and Operating Reserve Markets or an aggregator of such retail customers that offers qualified Demand Response Load into the Energy and Operating Reserve Markets under Section 2.8 of Attachment AE, (g) an entity that executes the Service Agreement specified in Attachment AH and registers the assets of one or more Asset Owners, (h) an Upgrade Sponsor that executes the Service Agreement specified in Attachment AH and (i) a Distributed Energy Resource Aggregator as defined in Section 1 of this Tariff.

ATTACHMENT AE

2.2 Registration

- (20) (a) The DER Aggregation must meet the technical and operational requirements applicable to the Resource type for which it is registering in order to participate in the Energy and Operating Reserve Markets as described in Section 2.19 of this Attachment AE.
- (b) A Market Participant that intends to aggregate 100 kW or more of one or more of the following: (a) installed nameplate capacity and (b) ~~or~~ response capacity of DER must complete Attachment AH, Appendix 2, ~~including information regarding the relevant electric retail regulatory authority, Distribution Utility, and Load-Serving Entity (“LSE”),~~ as part of its registration application.
- (c) Through execution of Attachment AH, Appendix 2, the ~~DERA~~ Market Participant must attest that:
- (1) ~~the DER is eligible for registration in a~~ the DER Aggregation is eligible for registration;
 - (2) if applicable, the relevant electric retail regulatory authority affirmed that it allows DERs of the relevant utility to participate in a DER Aggregation for a LSE distributing 4 million Megawatt hours (“MWh”) or less in the previous fiscal year;
 - (3) ~~the LSE affirmed that the DER~~ The DER Aggregation is not participating in a retail rate for the same service ~~as the proposed DER would provide under the DER Aggregation;~~
 - (4) ~~if applicable, the relevant electric retail regulatory authority affirmed that it does not prohibit the participation of load reduction demand response in the Energy and Operating Reserve Markets of a LSE that distributed more than 4 million Megawatt hours (“MWh”) in the previous fiscal year;~~

- ~~(5)~~ (4) the LSE affirmed that the ~~DERs~~ DER Aggregation capacity will not be used to simultaneously (1) reduce the LSE's obligation, or any other LSE's obligation, to purchase services from the Energy and Operating Reserve Markets; while (2) that same capacity is also offered into the Energy and Operating Reserve Markets.
- ~~(6)~~ (5) participation of ~~DERs~~ the DER Aggregation in the Energy and Operating Reserve Markets is compliant with the tariffs and operating procedures of the relevant Distribution Utility(ies) or LSE and the laws, rules, and regulations of any relevant electric retail regulatory authority.
- (d) In addition to the submittal of a completed Attachment AH, Appendix 2, ~~a DERA~~ Market Participants registering DER Aggregations must conform to the procedures specified in the Section 6.4 of the Market Protocols. The registration package for the DER Aggregation may be rejected if those procedures are not followed and completed. ~~DERAs who are not existing~~ New Market Participants will follow the timeframe for new Market Participants as specified in Section 6.4 of the Market Protocols in addition to the detailed model update timing requirements in Appendix E of the Market Protocols.
- (e) When the ~~DERA~~ Market Participant has completed (c) above, the Transmission Provider will request that the Distribution Utility perform a review and evaluation to determine whether safety or reliability concerns exist that would preclude the DER Aggregation from participation ~~in the DER Aggregation in SPP's markets~~ in accordance with the registration procedures specified in Section 6.4 of the Market Protocols. If the Distribution Utility communicates and shows, in writing, the existence of safety or reliability concerns within sixty (60) Calendar Days of the Transmission Provider's request, registration ~~will pause until the issue can be addressed and resolved. cease.~~
- (f) When the ~~DERA~~ Market Participant has completed (c) above, the Transmission Provider will provide the information attested to by the ~~DERA~~ Market Participant in the executed Attachment AH, Appendix 2 and ~~the list~~ the DERs included in the DER Aggregation provided pursuant to Attachment AH, Appendix 2 to the LSE and the relevant electric retail regulatory authority, if applicable, at the electronic mail address provided in the executed Attachment AH, Appendix 2. The LSE and, if applicable, the relevant electric retail regulatory authority will have twenty-eight (28) Calendar Days to review the information the ~~DERA~~ Market Participant attested to in Attachment AH, Appendix 2 and ~~the list~~ DER list included in the DER Aggregation provided pursuant to Attachment AH, Appendix 2 and communicate via electronic mail to the Transmission Provider if any of the information attested to in Attachment AH Appendix 2 is incorrect and the nature of the incorrect information. If the Transmission Provider does not receive communication via electronic mail from either the LSE or the relevant electric retail regulatory authority or does receive communication via electronic mail from either the LSE or relevant electric retail authority confirming the DERA's attestations in Attachment AH, Appendix 2, the DERA's attestations in Attachment AH, Appendix 2 will be considered acceptable and registration will proceed.
- (g) If the Transmission Provider receives information that it believes to be incorrect, the Transmission Provider will notify the Market Participant ~~DERA~~, and will provide the Market Participant the opportunity to cure inaccurate registration information within the following sixty (60) Calendar Days. If the registration information is not corrected

and resolved within that time period, registration will cease. ~~forward the relevant facts and any suspect attestation(s) to the FERC Office of Enforcement within fourteen (14) Calendar Days.~~

- (1) The Transmission Provider will not accept the Market Participant's ~~DERA's~~ Offers for the applicable DER Aggregation until the ~~misrepresentation inaccurate registration information~~ is remedied.
 - (2) If changes to registration are required to remedy the ~~misrepresentation inaccurate information~~, these changes must be completed according to the schedule in the Market Protocols.
- (h) The Transmission Provider is not responsible for interpreting the tariffs and operating procedures of Distribution Utilities, LSEs, or the laws, rules, or regulations of a relevant electric retail regulatory authority.
- (j) The Transmission Provider is not liable or responsible for ~~DER Aggregations or DERAs~~ Market Participants participating in the Energy and Operating Reserve Markets in violation of any law, rule, or regulation of a relevant electric retail regulatory authority including state-approved retail tariff(s).

2.19 Distributed Energy Resource Aggregations

A ~~DERA~~ Market Participant may register a DER Aggregation as any valid Resource type for which it meets the technical and operational requirements, including a DER Aggregation Resource (DERAG) type, and the DER Aggregation will be subject to the same service provision rules as any other Resource within that type. The interconnection requirements under Attachment V of this Tariff do not apply to a ~~DER participating in~~ a DER Aggregation.

For a DER Aggregation to be registered, the following rules apply:

- (1) The minimum size for a DER Aggregation is 100 kW of ~~one or more of the following:~~ (a) installed nameplate capacity, ~~or~~ and (b) response capacity.
- (2) A DER Aggregation must include one or more DERs.
- (3) A DER Aggregation registration must be consistent with the nodal aggregations applicable to other Resources providing the same service in accordance with Section 2.2(3) of this Attachment AE.
- (4) A DERA must provide Offer parameters as prescribed in Section 4.1 of this Attachment AE.
- (5) The metering requirements of DER Aggregations includes real-time telemetry and settlement quality metering, consistent with Section 10.1.(5) and Section 12.10 of this Attachment AE and as outlined in Appendix C and Appendix D of the Market Protocols. ~~Resources that are less than 10-MW in size and not providing regulation services are not required to provide ICCP telemetry.~~
- (6) A DER Aggregation may include different technology types in a single aggregation, including a combination of technologies that allow the DER Aggregation to do one or more of the following: inject, reduce and increase withdrawal of energy on the transmission system.
- (7) DER Aggregations consisting of multiple technology types, including at least one ESR, are eligible to register as an ESR as described in Section 2.17 of this Attachment AE.

12.1 Eligibility to Participate ~~through a DERA~~

Eligibility requirements for a DER Aggregation to participate in the Energy and Operating Reserve Markets are found in Section 2.19 of this Attachment AE.

12.2 Types of Technologies

The types of technologies eligible to participate in ~~DERAs~~ Aggregations are stated in Section 2.19 of this Attachment AE.

12.3 Double Counting of Services

Double counting of services in the Energy and Operating Reserve Markets occurs when a DER participates in one or more retail programs under its LSE ~~and also while it simultaneously~~ participates in the same service in the wholesale market. If the ~~DERA~~ Market Participant offers services from the ~~DERs~~ Aggregation into the Energy and Operating Reserve Markets also participating in ~~their~~ a LSE's programs but offering a different service, this is not considered double counting. As part of the ~~DERA's~~ Market Participant's registration process, based on information provided in its attestation in Appendix 2 of Attachment AH of this Tariff, the ~~DERA~~ Market Participant must attest that ~~an individual the DER Aggregation is or is not participating will not participate~~ in the same service on the retail side. ~~and the LSE of the DER must confirm this.~~

If a DER is found to be participating in a retail program offering the same services that the DER is offering through a DER Aggregation in the Energy and Operating Reserve Markets, the Transmission Provider will no longer accept offers, from the DERA for that aggregation until the individual DER(s) are removed from the DER Aggregation following the process in Section 12.13 of this Attachment AE to modify the list of DERs in the DER Aggregation. For example, Offers for the Day-Ahead Market and the RTBM, and meter values for RTBM for the applicable Operating Day(s) would no longer be accepted and other actions could be taken if a DER is found to be double counting.

12.4 Minimum and Maximum Size of Aggregation

The minimum size of a DER Aggregation is specified in Section 2.19 of this Attachment AE. At this time, there is no maximum size specified.

12.5 Minimum and Maximum Capacity Requirements for DERs participating in a DERA

There is no specifications for minimum or maximum capacity requirements for DERs in a DERA.

12.6 Single Resource Aggregation

A ~~DERA~~ DER Aggregation may include one or more DERs as specified in Section 2.19 of this Attachment AE.

12.7 Locational Requirements

Specifications for locational requirements for DERs in DERAs are found in Section 2.19(3) of this Attachment AE.

12.8 Distribution Factors and Bidding Parameters

For DER Aggregations in the Energy and Operating Reserve Markets ~~must be that aggregated~~ at a single node. ~~Therefore,~~ distribution factors are not needed for wholesale market purposes. This requirement is also found in Section 2.19(3) of this Attachment AE. ~~DERAs that register DER Aggregations in the Energy and Operating Reserve Markets across multiple nodes, distribution factors will be provided to develop the single DER Aggregation pricing node.~~

DERAs may register and operate ~~it's~~ a DER Aggregation under any existing participation model that it is physically and operationally capable of meeting, ~~including as a Distributed Energy Resource Aggregation (DERAG),~~ therefore the bidding parameters in Section 4.1 of this Attachment AE will apply to a DER Aggregation as they do to any other Resource registered under that participation model.

12.10 Metering and Telemetry System Requirements

The metering requirements for ~~DERAs Aggregations~~ will include real-time telemetry and revenue (settlement) quality metering consistent with Section 10.1(5) of this Attachment AE and as outlined in Appendix C and Appendix D of the Market Protocols. ~~Resources that are less than 10 MW in size and not providing regulation services are not required to provide ICCP telemetry.~~ The DERA will coordinate with the applicable Distribution Utility or Load Serving Entity to obtain any information necessary to provide the Transmission Provider with real-time telemetry and revenue (settlement) quality metering consistent with Section 10.1(5) of this Attachment AE and as outlined in Appendix C and Appendix D of the Market Protocols.

Real-time telemetry requirements are as follows:

- (1) The ~~DERA—Market Participant~~ must establish a connection through the Inter-Control Center Communications Protocol (ICCP) and communicate real-time data with the Transmission Provider through the ICCP connection. ICCP connections are outlined in the latest version of the ICCP Handbook found on the Transmission Provider's website and in the Market Protocols.
- (2) ~~Resources that are less than 5-MW in size and not providing regulation services are not required to provide ICCP telemetry.~~
- (3) Real-time telemetry will be provided at the DER Aggregation level.
- (4) MW values that represent market activity at the Transmission System interconnection point.

12.13 Modifications to List of Resources in a DER Aggregation

(1) Modifications to the list of Resources in a DER Aggregation may be proposed by the DERA at any time and will not require the DERA to re-register or re-qualify the entire list of DERs in the DER Aggregation. Modifications may include:

- a) Additions of Resources to a DER Aggregation;
- b) Removal of Resources from a DER Aggregation; or
- c) Changes to the installed nameplate capacity, response capacity, or size of any individual DER as provided in the original registration materials.

- (2) Any request to modify the list of DERs in the DER Aggregation must include the following, as necessary:
- a) Information regarding the size of any subtraction from the DER Aggregation in order to verify that the DER Aggregation continues to meet the minimum size requirement. If the DER Aggregation drops below the minimum size requirement, offers from that DER Aggregation will no longer be accepted and the DER Aggregation will be suspended until additions are made such that the DER Aggregation meets or exceeds the minimum size.
 - b) An affirmation that the relevant LSE has been notified of the registration and has not provided notice ~~attestation from the relevant LSE~~ that any DER proposed to be added to the DER Aggregation ~~does not~~ participates in a retail rate for the same service as the proposed DER would provide under the DER Aggregation.
 - c) An affirmation that the LSE has been notified of the registration and has not provided notice ~~attestation from the LSE~~ that any DER proposed to be added to the DER Aggregation is ~~not~~ included in a retail program to reduce the LSE's obligation, or any other LSE's obligation, to purchase services from the Energy and Operating Reserve Markets.
 - (d) An affirmation ~~attestation~~, if applicable, that the relevant electric retail regulatory authority has permitted the DER to participate.
- (3) The Transmission Provider will communicate with the Distribution Utility in order to activate the safety or reliability review and evaluation as described in Section 13 in this Attachment AE. The results of the review and evaluation by the Distribution Utility should be communicated in writing to the Transmission Provider.
- (a) If the results of the Distribution Utility analysis conclude that the modifications will not affect the safety or reliability of the Distribution Network operations or if the Distribution Utility does not provide results of the evaluation within the relevant time period, the changes to the list will be made consistent with the timeline for adding a new Resource as outlined in Appendix E of the Market Protocols.
 - (b) If the results of the Distribution Utility analysis conclude that the modifications will affect the safety or reliability on the Distribution Network consistent with the timeline as described in Section 13 of this Attachment AE, then the modification will not be made **until the issue is resolved**.
 - (c) During the period which the analysis is being performed by the Distribution Utility, the DER Aggregation may remain active if:
 - i. the DERA adjusts the bidding parameters to account for any DER withdrawing from the DER Aggregation, and
 - ii. the DER Aggregation continues to meet the minimum size requirement.
 - (d) New DERs being evaluated under this section will not be added to the DER Aggregation until the requirements of this section have been completed.

During the DER Aggregation initial registration process, once the Transmission Provider has a completed registration package from the DERA, the Transmission Provider will contact the Distribution Utility identified in the Appendix 2 of Attachment AH to instruct the Distribution Utility of its deadline to perform the evaluation of impact of each DER. This timeframe for this evaluation will be no more than sixty (60) Calendar Days from when the Transmission Provider provided notification to the Distribution Utility. For subsequent modifications to the list of DERs, the same timeframe and process for communication by the Transmission Provider to the Distribution Utility for an evaluation will apply.

The Transmission Provider will provide the Distribution Utility with the physical and operational data provided by the DERA during the registration process, or any incremental changes provided by the DERA for subsequent modifications to the DER Aggregation, in order to facilitate the evaluation.

Registration and modifications will be impacted by these concerns as explained in Sections 2.2(20) and 12.13, respectively, of this Attachment AE.

Appendix 2 to Attachment AH

Distributed Energy Resource Aggregator Information:

1. The representations herein are made and attested to by the Distributed Energy Resource Aggregator (“DERA”). A DERA is as described in Section 2.2(20) of Attachment AE.
- ~~2. Please provide the name and contact information of the Load Serving Entity (“LSE”) or LSEs whose customers are included in the DER Aggregation:
(Insert Name of the LSE)
(Insert the business address of the LSE)
(Insert the name of an individual that is employed by the LSE and has the authority to make affirmations on behalf of the LSE (“LSE Contact”)
(Insert the Phone Number of the LSE Contact)
(Insert the electronic mail address of the LSE Contact)~~
- ~~3. Please provide the name and contact information of the Distribution Utility (“Utility”) or Utilities that is responsible for the safety and reliability of the Distribution Network that is connected to the DER Aggregation:
(Insert Name of the Utility)
(Insert the business address of the Utility)
(Insert the name of an individual that is employed by the Utility and has the authority to make affirmations on behalf of the Utility (“Utility Contact”)
(Insert the Phone Number of the Utility Contact)
(Insert the electronic mail address of the Utility Contact)~~
- ~~4. Please provide the name and contact information of the relevant electric retail regulatory authority (“RERRA”) that is the entity that establishes the retail electric prices and any retail competition policies for customers are included in the DER Aggregation:
(Insert Name of the RERRA)
(Insert the business address of the RERRA)~~

~~(Insert the name of an individual that is employed by the RERRA and has the authority to make affirmations on behalf of the RERRA (“RERRA Contact”))~~

~~(Insert the Phone Number of the RERRA Contact)~~

~~(Insert the electronic mail address of the RERRA Contact)~~

5. 2. The DERA represents and warrants that the following is true as of the date of execution of this Appendix 2 of Attachment AH:

- (a) ~~The DER is eligible for registration in a~~ DER Aggregation is eligible for registration in SPP’s markets;
- (b) If applicable, the relevant electric retail regulatory authority ~~RERRA Contact affirmed on (Insert Date) that it~~ allows DERs-Aggregations of the relevant LSE to participate in ~~DER Aggregations~~ SPP’s ~~energy and operating reserves~~ markets for an LSE distributing 4 million Megawatt hours (“MWh”) or less in the previous fiscal year;
- (c) ~~The LSE Contact on (Insert Date) affirmed that the DERs are not~~ The DER Aggregation will not participate in a retail rate for the same service as being offered into the Energy and Operating Reserve Markets;
- (d) ~~If load reduction demand response resources are included in the DER Aggregation, the RERRA Contact, if applicable, on (Insert Date) affirmed that that it does not prohibit the participation of load reduction demand response in the Energy and Operating Reserve Markets of a utility that distributed more than 4 million Megawatt hours (“MWh”) in the previous fiscal year.~~
- (e) ~~The LSE Contact on (Insert Date) affirmed that the DERs capacity will not be used to simultaneously (1) reduce the LSE’s obligation, or any other LSE’s obligation, to purchase services from the Energy and Operating Reserve Markets; while (2) that same capacity is also offered into the Energy and Operating Reserve Markets.~~
- (f) The participation of DERs in the Energy and Operating Reserve Markets is compliant with the tariffs and operating procedures of the relevant Distribution Utility(ies) or LSE and the laws, rules, and regulations of any RERRA.

SPP Operating Criteria

SPP Planning Criteria

SPP Business Practices

Integrated Transmission Planning (ITP) Manual

Revision Request Process

Minimum Transmission Design Standards for Competitive Upgrades (MTDS)

Reliability Coordinator and Balancing Authority Data Specifications (RDS)

SPP Communications Protocols