Portland General Electric
121 SW Salmon Street • Portland, Ore. 97204
PortlandGeneral.com

January 4, 2019

Public Utility Commission of Oregon
Attn: Filing Center
201 High Street, S.E.
P.O. Box 1088
Salem, OR 97308-1088

RE: **UM 1856 – PGE's Coffee Creek Substation Site Analysis and Feasibility of Third-Party Operation and Ownership**

Pursuant to Oregon Public Utility Commission (OPUC or Commission) Order No. 18-290, enclosed is Portland General Electric Company's (PGE's) site analysis and feasibility of third-party operation and ownership for its Coffee Creek Substation proposal. Per the Stipulation, paragraph 24, PGE requests that OPUC Staff express its agreement that PGE presented adequate evidence that Coffee Creek is the best site for the energy storage system based on the universe of available substation sites within PGE's system.

The Commission opened Docket No. UM 1751, in September 2015, to implement House Bill 2193. This House Bill requires large Oregon electric companies (i.e. Pacific Power or PAC, and PGE) to submit proposals by January 1, 2018, to develop qualifying energy storage systems with the capacity to store at least five megawatt hours. In UM 1751, the Commission adopted specific guidelines and requirements for energy storage project proposals, in late 2016, and a framework for PAC's and PGE's Energy Storage Potential Evaluations (Potential Evaluations) in March 2017.

PGE filed its Energy Storage Proposal and Final Potential Evaluation on November 1, 2017, which were investigated in the subsequently opened Docket No. UM 1856. Following multiple rounds of testimony and numerous data requests, workshops and a settlement conference, stakeholders and PGE reached a Partial Stipulation and submitted Joint Testimony in support of the Stipulation. The stipulation resolved nearly all the issues in the proceeding.

Attachment A provides the site analysis and feasibility of third-party operation and ownership for PGE's Coffee Creek Substation proposal to comply with Item No. 02 of Order No. 18-290. Attachment B provides a list of all PGE substations and the site selection for the energy storage system. Attachment C provides a short-listed substation site evaluation matrix. Attachment B and C are confidential and subject to Protective Order No. 17-441.

PGE looks forward to working with OPUC Staff in determining the adequacy of evidence in the site analysis. Should you have any questions or comments regarding this filing, please contact Kalia Savage at (503) 464-7432.

Please direct all formal correspondence and requests to the following email address pge.opuc.filings@pgn.com

Sincerely,

Karla Wenzel
Manager, Pricing & Tariffs

Enclosures
Cc: UM 1856 Service List

Attachment A

Provided in Electronic Format only

Coffee Creek Substation Site Analysis and Feasibility of Third-Party Operation and Ownership

Attachment A - PGE's Coffee Creek Energy Storage Site Analysis

Introduction

Portland General Electric Company ("PGE") files this document to comply with Public Utility Commission of Oregon ("OPUC" or "Commission") Order No. 18-290 which states "consistent with the stipulation, [PGE] will develop analysis justifying the Coffee Creek site selection. As part of that analysis and in the review of other potential locations, [PGE] must consider the feasibility of third-party ownership and operation." This document provides procedural background, the site selection process for the Coffee Creek energy storage system, a detailed review matrix regarding the site selection, the intended project use cases, operation, and applicable learnings. In addition, the document describes why third-party ownership and operation of an energy storage device which is integrated as part of a substation network as proposed at Coffee Creek would not be feasible, and is distinguished from energy devices interconnected, but not integrated, into substations or other points on the transmission and distribution system.

Background: Storage Law, PGE's Proposal, and Partial Stipulation

The Commission opened Docket No. UM 1751 in September 2015 to implement House Bill ("HB") 2193 (2015 Regular Legislative Session), which requires large Oregon electric companies to submit proposals to develop qualifying energy storage systems with the capacity to store at least five megawatt hours ("MWh") the Commission by January 1, 2018. On December 28, 2016, the Commission adopted specific guidelines and requirements, in Order No. 16-504, that encourage Pacific Power's ("PAC") and PGE's energy storage project proposals. On March 21, 2017, in Order No. 17-118, the Commission adopted a framework for PAC's and PGE's Energy Storage Potential Evaluations ("Potential Evaluations") that includes seven elements. On July 14, 2017, PGE filed its Draft Potential Evaluation. Staff and stakeholders reviewed this draft and made recommendations to the Commission through a Staff Report. In Order No. 17-375, the Commission adopted the following schedule: (1) by January 1, 2018, PGE and PAC were to file draft project proposals and updated draft potential evaluations that incorporated the improvements outlined by Staff in its Report; (2) by April 2, 2018, the utilities were to file final project proposals and final potential evaluations; and (3) no later than April 2, 2018, the Commission would begin review of the final filings. PGE's submitted Proposal and Potential Evaluation resulted in a partial stipulation among most of the parties (i.e. PGE, OPUC Staff, CUB, AWEC, NIPPC and RNW), with no party objecting to the stipulation.

As part of the stipulation, Parties agreed that PGE would present its analysis to Staff that the Coffee Creek Substation is the best site for the substation energy storage system based on the options of available substations sites in PGE's system. The stipulation further provided that if Staff did not agree, the Commission would determine whether PGE could move forward with the project. Additionally, the stipulation carved out the issue of third-party ownership as the remaining issue to be litigated. In adopting the stipulation, the Commission declined to direct PGE to expand its request for proposals to third-party owned and operated projects. Instead, the Commission directed PGE to address the feasibility of third-party ownership and operation at the possible alternative locations. The Commission noted that it would closely examine any ownership limitations in future ratemaking proceedings.

Substation Site Selection Analysis

A substation sited energy storage system is important because of the variety of learnings produced. The available learnings are unique to a substation-sited energy storage project as opposed to residential, commercial, mid-feeder, and generation sites. These learnings include the ability to provide Transmission and Distribution ("T&D") integrated locational value through outage mitigation and deferred distribution investment. Thus, PGE sought to identify a location where high potential of T&D locational value was present and there were minimal implementation risks for that location.

The determination that the Coffee Creek Substation was the best among substations for energy storage started with the ranking of substation sites based on the desired site-specific outage mitigation benefits that the sites offered. PGE ranked the list, filtering it using both quantitative[1] and qualitative[2] metrics to establish a shortlist of ideal locations for substation-sited storage on PGE's system. Finally, this shortlist was evaluated on additional physical and operational criteria that resulted in Coffee Creek as the preferred site.

PGE evaluated all 140 PGE-owned distribution substations using the Integrated Planning Tool ("IPT")[3] to determine the site-specific outage mitigation benefits (also known as the locational value) available due to the reduction of system risks from a two-hour, four-hour, and infinite duration energy storage system. The IPT considers the reliability and economic life of T&D assets at PGE substations and calculates a likelihood of component failure which could result in customer outages. A consequence of failure is then calculated, which considers how widespread the resulting outage could be and what customers would be impacted. A total risk value is monetized, which is aggregated from the asset likelihood of failure multiplied by the consequence of failure. PGE uses the IPT to identify where best to make system investments to address system risk in areas of the system which demonstrate the highest risk per the calculation. These IPT results are the input to the site selection process described in this document. For the IPT modeling and analysis details, please see PGE's Proposal.

The following steps were taken to filter the IPT results and identify the short list of potential sites, with consideration for high T&D value per the IPT and minimal barriers to project implementation. Please see Confidential Attachment B "Substation Energy Storage Site Selection" for the detailed site review matrix for the substation site selection process described in this section.

Highest value: The first screening mechanisms considered the availability of locational value as calculated in the IPT:

---

[1] Quantitative metrics include the IPT analysis, SCADA availability, existing near-term planned substation projects, and existing substation reverse power flow protection.
[2] Qualitative metrics include property availability and environmental considerations.
[3] The details of the IPT modeling and analysis are covered in OPUC Docket No. UM 1856 PGE Exhibit 101, Section 2.2(a) and Appendix 2 and PGE Exhibit 200, page 18.

- The IPT results were sorted based on largest to smallest on the dollar per kilowatt hour ("kWh") benefit for a two-hour energy storage system.[4] This can be seen in column D of the site selection spreadsheet. Further review of potential sites was prioritized starting at the top of this list with the locations demonstrating the highest potential value as indicated by the IPT model.
- PGE eliminated sites with ongoing near-term upgrade projects (i.e. substation sites with transmission and distribution upgrades not modeled in the IPT). This can be seen in column K of the site selection spreadsheet. Once the upgrades are completed, the site-specific benefits for these sites will be greatly reduced, thereby minimizing the potential IPT value that an energy storage system could otherwise provide. When considering the pending construction projects identified at these substations, the resulting impact to the system risk profile for each substation is reduced to sufficiently drop them out of the top quartile of high-risk substations identified in the IPT.

Implementation risks were then considered, and sites were removed based on the following implementation risks:

1. **SCADA.** The list was culled to eliminate sites that did not have existing Supervisory Control and Data Acquisition ("SCADA") systems. This can be seen in column J of the site selection spreadsheet. Substation sites with a SCADA system communicate with PGE's System Control Center in real time. This means that there is existing telecommunication infrastructure in place to support the real time control of an energy storage system without the need for additional upgrades and additional project costs. The decision to eliminate substations without SCADA was based on financial and timeline considerations. PGE estimates the unloaded cost of a substation SCADA upgrade to range from $500,000 to $1.5 million. Furthermore, the resulting substation upgrades associated with introducing SCADA to an older substation could take two years to plan and execute, representing a risk to the energy storage project schedule. The locational value that an energy storage system could provide at non-SCADA sites evaluated in the IPT is calculated to be less than $500,000 for each site. Since the cost to include SCADA at these sites exceeds the locational value that an energy storage system can contribute, in addition to the associated timeline which is needed to support a project at non-SCADA sites, PGE removed non-SCADA sites from consideration.
2. **Transformer Protection.** The list was limited to sites that had existing transformer protection equipment that met PGE's standards to allow for reverse power flow from the distribution system to the transmission system. This can be seen in column L of the site selection spreadsheet. This decision was also based on financial and timeline considerations. Substation sites with fuse protection on the high side of the transformer would require the addition of high-side circuit switchers and an upgraded transformer protection scheme to properly protect the grid if an energy storage system was located at that site. As designed,

[4] The highest site-specific benefits were seen with a two-hour system, but the overall benefits were maximized with a four-hour system due to the stacked benefits available from the Bulk Energy & Ancillary Services value streams.

sites with high-side fuses properly protect the grid in the typical situation where power is flowing in one direction from the transmission system to the distribution system but result in coordination issues for the reverse power flow from an energy storage system. PGE estimates the unloaded cost of a substation transformer protection upgrade to range from $200,000 to $500,000. Furthermore, the resulting substation upgrades associated with introducing protection upgrades to an older substation could take two years to plan and execute, representing a risk to the energy storage project schedule. Given the small contribution of site-specific benefits to the overall benefits of a substation-sited storage (as identified in the Potential Evaluation) and the additional costs and timeline needed to support a project at these sites, these sites were removed from consideration.

3. **Other Considerations.** Three sites were removed from consideration for other reasons, as shown in column M of the site selection spreadsheet.
   a. Durham – Physical space constraints at this site were identified in the initial evaluation phase and it was determined that there was no room for an energy storage system; and
   b. Grand Ronde and Kelly Point – Both of these sites have existing customer Dispatchable Standby Generation which is not modeled in the IPT and results in a reduced risk profile for these substations. When considering the availability of customer on-site backup generation for major customers served by these substations, the resulting risk profile for these substations per the IPT analysis places them outside of the top quartile ranking of high risk substations.

After applying the filters listed above, there were six sites remaining for the additional short list evaluation which are provided in Confidential Attachment C.

Short List Evaluation and Final Site Selection

The final short list evaluation consisted of a detailed site review of the following elements:

- Substation transformer loadings – The transformer loading data was reviewed as an initial indicator of the potential energy storage system size. Some substations serve load from multiple transformers which would impact the energy storage system design criteria in that PGE would need to consider if the energy storage system should be large enough to provide backup service to feeders from a single transformer, or if multiple energy storage systems should be deployed to provide backup capabilities for multiple substation transformers.
- Environmental Review – An internal review of the environmental considerations was conducted for each of the short-listed sites to identify potential environmental concerns.
- Permitting/Land Use Review – An internal review of the permitting and land use was conducted for each of the short-listed sites to identify permitting requirements and timeframes as well as zoning changes due to the proposed use.
- Substation Operations considerations – An internal review was conducted for each of the short-listed sites by PGE Substation Operations to identify any site-specific concerns from an engineering and operations standpoint.
- Available space on Existing PGE Parcel – Available space on the existing PGE parcel for each site was reviewed to determine if there was enough physical space to locate the proposed energy

storage system. Additional costs for land preparation or additional land purchase or leases would have a negative impact on the project economics.

The short list evaluation resulted with the selection of Coffee Creek Substation as the final site. The specific benefits that led to the selection of Coffee Creek are the large amount of space available outside of the identified wetland area on the property, the standard permitting process required by Washington County, and no identified operational concerns at that location.

Table 1 includes the results of this final short list evaluation. After taking into consideration all the different risks for each potential project site, Coffee Creek emerged as the best location for a substation sited project.

Feasibility of Third-Party Ownership and Operation

An energy storage resource intending to directly operate and control utility infrastructure in a substation microgrid, thereby providing direct distribution services and power quality management to all utility customers residing within the substation service area, must remain under the direct operational control of the utility. Third-party ownership of the facility may be feasible, but only to the degree that the utility retains exclusive operational control and dispatch of the energy storage resource and its distribution control functions. The contractual arrangements necessary to award the utility exclusive operational control and dispatch of the resource, as well as all maintenance decisions and design upgrades or modifications to the facility and its controls, and coordination with system protection schemes, would be overly burdensome, time consuming, and are not appropriate for consideration under the HB 2193 timeline[5].

A core mission of the public utility is to provide non-discriminatory access for all customers within its defined service territory. In carrying out this mission, the utility strives to provide standardization in the application of safety, reliability, security, and power quality measures governing distribution service, inclusive of service to both customer loads and interconnected resources. A utility has the obligation to consistently uphold T&D quality of service standards to all customers in its service territory, irrespective of the energy provider(s). The function of providing these distribution services in a fair and transparent manner is characteristically performed by the local area grid operator, a role which is best serviced by a single entity for any given area under the regulation of the Commission.

The role of a substation within the T&D system is to provide a reliable connection to the transmission network, to step down voltages from the transmission level to a safe distribution level, and to provide distribution services such as voltage management and power factor management for distribution feeders as connected customer loads change throughout the day.

---

[5] HB 2193 requires a minimum of 5 MWh of energy storage to be in procurement by January 1, 2020. The process to develop and issue an RFP, and to award a bid for a substation-sited energy storage system could take 9-12 months. Work on development of an RFP will not commence until a substation site is agreed upon between OPUC Staff and PGE.

In Order No. 17-375, the Commission directed electric companies to "analyze each use case listed in Appendix A for each evaluated storage site and that each use case should be considered at each site with a brief justification provided when not evaluated." Two of the energy storage use cases identified by Staff include "Distribution Upgrade Deferral" and "Outage Mitigation." In the context of the substation-sited energy storage system, Distribution Upgrade Deferral relates to the energy storage system's ability to regulate system voltages as an integrated part of the substation control package. The Outage Mitigation use case is recognized when the energy storage system can operate as a microgrid, thereby operating utility grid infrastructure and providing power and grid services to all customers served by the selected substation during times when service from the substation is unavailable because of transmission system outages or substation component failure. The locational value for Outage Mitigation is calculated per the IPT, and this value is available only if the energy storage system is designed to operate as an integral part of the substation and distribution grid. Other potential sites such as commercial or industrial properties interconnecting with the grid act much more a standalone device and are not integral parts of a complex substation system and can avail themselves to third party ownership.

Interconnected versus Integrated and Grid-following versus Grid-forming

There is a difference between a third-party owning and operating a substation-integrated storage system, versus when a third party is interconnecting a resource to the grid.

PGE has mechanisms in place to maintain the safety and reliability of the T&D system when interconnecting third-party owned resources. PGE considers these interconnected resources as grid-following. This means that they require the grid operator (i.e. PGE) to retain control and management of the grid reliability and power quality functions (e.g. frequency control, voltage control, grid protection systems). To protect PGE's customers from inadvertent operation of the distribution plant from a non-utility provider, PGE regularly installs protection systems complete with high-speed communications to automatically disconnect third-party power resources from the grid when microgrid conditions or equipment failure may occur.

Conversely, a utility-owned grid-forming resource can mitigate outages by independently establishing the utility control functions necessary for reliable operation of the distribution system without any connection back to the main grid. To ensure PGE's customers are provided with a consistent quality of electric service when served by the substation microgrid, PGE's distribution plant residing within the microgrid will remain compliant with the Commission service standards governing Quality of Electric Service and subject to applicable regulatory authority of the Commission (Chapter 860 Division 23). Utility grid control functions, such as system protection, feeder voltage profile management, and power quality management, affect service quality to all distribution customers directly served by the grid-forming resource, the management of which is the sole responsibility of the utility provider. These necessary control functions are incremental to the energy services which can otherwise be provided by an interconnected (grid-following) resource.

As an example, an energy storage system which independently serves all substation customers, such as a microgrid, would have the direct impact of controlling system voltages and system frequency delivered to all customers residing within the microgrid. The energy storage system will also have the direct impact of altering the response of all downstream utility protective devices and will be responsible for coordinating with the downstream protective devices to ensure proper protection with respect to safety, equipment damage, and system reliability (e.g. SAIDI and SAIFI), along with public and worker safety. Allowing a third-party owner or operator of a substation storage system as a grid-forming resource could have that owner/operator either intentionally or unintentionally affect safety and service quality to distribution customers.

As a grid-forming resource, any liability resulting from off-nominal voltage or frequency deviations will appropriately be borne by the owner and operator of the energy storage system and connected substation microgrid facilities. This includes safe and reliable operation of the substation microgrid, as well as the safe and reliable return to normal by synchronizing back to the main grid upon restoration of the transmission source without exposing customers to the risk of equipment damage or unnecessary outages.

In addition to the energy storage project serving as a grid-forming resource, PGE has identified potential additional legal impediments regarding third-party ownership of this project that warrant consideration by Staff. The integrated operation of the energy storage system as a grid-forming resource for substation outage mitigation would place the energy storage system in the position to control, operate, and manage energy deliveries across the electrical infrastructure serving all customers residing within the substation microgrid. This includes the independent control and operation of PGE distribution facilities serving over 480 PGE customers connected to the two distribution feeders sourced by Coffee Creek substation. In the event of a complete outage to the Coffee Creek substation, the owner/operator of the substation microgrid will also need sufficient visibility into the distribution system to coordinate implementation of a black start procedure which isolates and systematically brings sections of the distribution feeders into the microgrid as system conditions allow. Thus, PGE raises the question as to whether the owner of the energy storage system would become a public utility during microgrid operation as defined by statute.[6] Such question presents a potential barrier to third-party ownership/operation of the substation-sited energy storage system and introduces complexities in contracting that likely delays execution and may impede PGE's meeting the UM 1856 implementation timeline as directed in Order 18-290.

Alternatively, if third-party ownership or operation were a requirement for this energy storage system, PGE would treat it as a customer interconnection which provides energy services as a grid-following resource; therefore, not allowing the resource to establish a utility microgrid for outage mitigation. As a third-party owned and operated resource, the energy storage system would not be permitted to operate in a manner which establishes the primary utility grid control functions comprising system protection and power quality management across the utility microgrid. Rather, the functions of a third-party owned and operated resource would be limited during microgrid operations to only supplementing the utility microgrid by contributing energy deliveries and responding within set parameters to grid voltage

---

[6] ORS 757.005(1)(A) defines a public utility as "any corporation, company, individual, association of individuals, or its lessees, trustees or receivers, that owns, operates, manages or controls all or a part of any plant or equipment in this state for the production, transmission, delivery or furnishing of heat, light, water or power, directly or indirectly to or for the public, whether or not such plant or equipment or part thereof is wholly within any town or city." Exceptions to this definition exist for qualifying facilities under ORS 758.505 and for electricity service suppliers under ORS 757.600; however, these entities only deliver energy as grid-following resources and do not control, operate, or manage the delivery of these resources across the utility electrical infrastructure to its end-use customers.

measurements. This would remain the case regardless of whether the third-party owned energy storage system was located at a utility substation or elsewhere within PGE's distribution system. PGE would need to incur additional investment to implement standalone utility-owned devices and control functions necessary to establish a utility microgrid for PGE to allow a third-party resource to feed power back onto the utility microgrid while disconnected from the main grid. This additional investment would most likely need to be in the form of a utility-owned energy resource to exercise the primary control of the utility microgrid. The utility grid-forming resource likely needs to be larger than any singular grid-following resource for the utility grid-forming resource to can exercise primary control over the utility microgrid, a responsibility belonging exclusively to the public utility.

Per the IPT analysis, PGE identifies value in establishing microgrid functionality for the proposed energy storage system at the Coffee Creek substation in its ability to reduce outage risks affecting the Coffee Creek substation asset by enhancing reliability to the local distribution system. This pilot project affords PGE the opportunity to test the microgrid use case and validate assumptions made in the IPT analysis and affords PGE the opportunity to gain learnings which may be applied to future microgrids on the distribution system.

Embedded substation controls and operation

The value of a substation-sited energy storage system is that it enables PGE to evaluate the operational benefits of integrating energy storage into the substation design, control, and protection schemes as a T&D asset supporting distribution reliability and power quality. As a distribution reliability resource, the energy storage system will be integrated into the distribution substation equipment complete with the appropriate and automatic modification to substation control settings necessary to ensure the safety, reliability, and power quality of service to the downstream distribution feeders are maintained. This design, which automatically modifies PGE substation protection and control settings, establishes the energy storage resource as an embedded distribution system asset in a comparable fashion to other, more traditional T&D infrastructure assets (e.g. transformers, regulators) which are owned and operated only by the utility provider.

By properly integrating the storage system into the utility-owned voltage control devices, there will create a linkage from the energy storage system to the inner operations of the distribution substation. These substations represent the backbone of the retail service system. An energy storage resource which is integrated into the backbone of the utility retail system is a sensitive proposition, but a highly valuable learning opportunity which can provide guidance standards for anticipated future interconnections.

Third-party ownership of an energy storage system which is directly integrated into the inner operations of the distribution substation presents a potential risk to customers in that the integrated programming and control protocols could affect substation operations, particularly around voltage control and power quality. Voltage control and power quality are important to many industrial and commercial customers, some of which take service from Coffee Creek substation.[7] PGE would need latitude to respond quickly when changes to the programming and controls are necessary to mitigate/address identified voltage control and power quality issues. If owned by a third party, any modifications to the programming and control protocols would require additional paid assistance, permission, work, and coordination with the third-party owner. The ability to modify the energy storage system operations in real-time may be

[7] Commercial and industrial customers served by Coffee Creek substation include: Mentor Graphics Corp, Optimim LLC, Tyco Electronics, Hartung Glass, Fujimi Corporation, and Pacific Foods.

something to consider in a contract, but PGE fears the practical outcome could cause unintended consequences particularly around access to not only the physical energy storage plant and its interconnection, but also to its management systems. More appropriately, any arrangement for a third-party owned resource would cause PGE to take a much more conservative approach to this pilot project to assure the distribution system and our customers are appropriately protected from unknown or unanticipated contingencies.

Through utility ownership and control; however, PGE can conduct various activities and system modifications in an unfettered manner to best understand how to effectively integrate and manage energy storage systems into the inner operations of the distribution substation. Regular modifications to the energy storage system programming and control protocols will allow PGE to understand how best to optimize the operation of utility voltage control devices including: substation distribution capacitor banks, transformer load-tap changers (LTC), and other voltage regulating equipment. PGE would need latitude to try various programming and control protocols to maximize learnings and best understand how to proceed with future integration of new energy storage systems. The learnings we will obtain from utility ownership of an energy storage system integrated into the distribution substation controls will be used to inform the development of interconnection standards to reliably address any currently unknown issues for this mode of operation and may also influence future substation design and operating practices.

Conclusion

The Coffee Creek substation is the best location to pilot a substation-sited energy storage system based on the high locational value available at this site for outage mitigation (as calculated by the IPT), and the reduced risks identified for project implementation.

For this pilot, the substation-sited energy storage project should be operated by PGE for the following reasons:

1. Locational value for outage mitigation is only available in the presence of a grid-forming resource, which delivers utility grid services and power quality control affecting all customers residing within the microgrid.
2. Managing and controlling all or a part of a utility microgrid (substation and connecting feeders) introduces potential legal impediments to third-party ownership and operation.
3. The incremental learnings for full substation integration, including feedback controls to utility substation devices, are only achieved reliably, safely, and timely under HB 2193 through full utility operational control.

Attachment B

Provided in Electronic Format Only

Protected Information Subject to Protective Order 17-441

Substation Energy Storage Site Selection

Attachment C

Provided in Electronic Format only

Protected Information Subject to Protective Order 17-441

Substation Site Evaluation Matrix