NextEra Energy Transmission West and Pacific Gas and Electric Company
Estrella Substation and Paso Robles Reinforcement Project
Proponent's Environmental Assessment (A.17-01-023)

Response to Deficiency List No. 5

The California Public Utilities Commission (CPUC) identified deficiencies in NextEra Energy Transmission West, LLC (NEET West) and Pacific Gas and Electric Company's (PG&E) Proponent's Environmental Assessment (PEA) for the Estrella Substation and Paso Robles Reinforcement Project. Below are responses to Deficiency List No. 5 issued by the CPUC on June 4, 2018. Each deficiency is numbered according to the list, followed by NEET West's and PG&E's response.

Deficiency 1:

Explain the discrepancy. **PEA Appendix G** *(version May 7, 2018), Table 3, "Breakdown of Updated LoadSEER Forecast," indicates that in 2024, forecast demand for the Paso Robles Distribution Planning Area (DPA) could reach 213.37 MW at peak. This would exceed Available Capacity (212.55 MW) for the DPA by* **0.82 MW**. *By comparison, the February 23, 2018 letter from CAISO to the CPUC states, "PG&E has indicated that based on the latest forecast, the Paso Robles distribution planning area is forecast to be overloaded by* **7.3 MW** *or 3.4 % during peak in 2024." See CAISO letter in attachments to Applicants' responses to Deficiency Letter No. 4.*

a. *Explain why PEA Appendix G does not include the following information and supporting data: "The distribution feeders that are forecast to be loaded at or above 100% of normal ratings in 2024 are: Atascadero 1103, Paso Robles 1107, Paso Robles 1108, San Miguel 1104, and Templeton 2113. Templeton Bank #2 is forecast to be overloaded in 2024 by 2.4%." This is a direct quote from the CAISO letter.*

b. *Please* **update and refile** *a new version of PEA Appendix G with CPUC Dockets Office that includes the detailed explanations requested in Item 1 and 1a, above.*

Response:

As demonstrated in Figure 6 of Appendix G, electrical system forecasts vary with the facts and assumptions that go into them. PG&E's load forecasts are updated annually with the latest peak load data, using the most current load growth indicators available at the time of the forecast. However, forecasts are estimates, not precise predictors of what will happen but rather tools to determine when new facilities are expected to be required.

The information contained in Table 3 of Appendix G indicates that, in 2024, demand for the DPA could reach 213.37 MW at peak, exceeding available capacity for the DPA by 0.82 MW. As explained in Part III.B, that forecast is based on the 2016 IEPR Update, incorporating the mid-case 2015 DER forecast, the planned new load identified in Table 6A, and the worst-case contingency for the largest distributed generator on line at the time of the DPA peak. This forecast is based on

the 2016 recorded peak load, using the non-simultaneous peak load data for each substation bank in the DPA.

In February of 2018, CAISO requested and PG&E provided load data that included more-recent load information based upon the 2017 recorded peak load for the DPA. The new information, which CAISO passed on to the CPUC, resulted in an updated forecast that indicated the 2024 electric demand for the DPA could reach 219.81 MW, with an approximately 7.3 MW (3.4%) overload. This forecast was different from the forecast shown in Table 3 because it included the more-recent 2017 peak load data and adjustments. Although both forecasts confirm that electric demand could exceed available capacity by 2024, the most-recent data indicates a larger overload.

a.   At CAISO's request, PG&E also provided the latest list of feeders and banks projected to be loaded over their normal thermal ratings in 2024 based on the 2017 forecasting cycle. Because the focus of Appendix G is on a distribution needs assessment for the entire DPA and the need for additional substation capacity, it does not include individual distribution bank or feeder overloads in the discussion. Instead, it assesses capacity constraints by substation. (See Table 4, Section III.B of Appendix G.)

b.   An updated PEA Appendix G containing the information requested above will be filed with the CPUC Docket Office. A track-changes version of the updated Appendix G is being submitted with this response, showing changes from the May 2018 version of Appendix G. If you wish to have something different, please let us know.

Deficiency 2:

*Explain why **PEA Appendix G** (version May 7, 2018), Table 4, "Breakdown of Substation Capacities and Forecasted Loads, Paso Robles DPA," identifies the system capacity as 212.22 instead of 212.55. This appears to be a typographical error, but please clarify. The correction should be made in the refiled Appendix G per Item 1, above.*

Response:

This was a typographical error. The correction was made in Appendix G refiled in response to Deficiency 1 above.

Deficiency 3:

*Clarify that under the **Templeton Expansion Alternative** (double-circuit 70-kV option), the existing 70-kV circuit north of Paso Robles Substation to San Miguel Substation would <u>not</u> be reconductored.*

Response:

Under the Templeton Expansion Alternative, the existing 70 kV circuit north of Paso Robles Substation would need to be reconductored at a minimum from the high side switch on the dead-end structure (Paso Robles to San Miguel 70 kV line) to where the new circuit from Templeton can tie into the existing 70 kV line as explained in the Deficiency #4 Response on Page 8:

"A similar grid modification would be accomplished under the Templeton Expansion Alternative by running a new double-circuit 70 kV line from Templeton Substation to Paso Robles Substation along the South River or Creston route alternative (see Exhibit 4-3.1c, Single Line Diagram for Templeton Expansion, Option 2). The new double-circuit line would tap into the existing San Miguel-Paso Robles 70 kV power line. One of the new circuits would tie in and maintain service to the San Miguel Substation and the other would tie in and provide the additional power flow path to Paso Robles Substation. From the point where the new double-circuit 70 kV line from Templeton Substation would tie into the existing San Miguel-Paso Robles 70 kV line, the existing power line would need to be reconductored back to Paso Robles Substation. Similar to the proposed Estrella project, this would not add an additional 70 kV connection to Paso Robles Substation so expansion of the existing single bus at the substation to a ring bus would not be required under PG&E's bus design criteria."

We are assuming that we will be able to tie into the first pole outside of Paso Robles Substation but, until engineering has had the ability to review the project and come to at least a 30% design, we are leaving in the language from the CAISO bid package. From the tie-in point to San Miguel Substation, the conductor will not be replaced since it is adequate to support the load at San Miguel Substation for now and the foreseeable future.

Deficiency 4:

Provide **load shape (8760)** *in MW and MVAR for all substations in the Paso Robles and San Luis Obispo distribution planning areas at the transmission level. This item adds to and clarifies the request for system data provided on May 2, 2018 (Attachment 1).*

Response:

Attached please find the excel document "DL5 Q4 Paso Robles and SLO DPA_2017_8760_MW_MVAR.XLSX" which contains the load profile data requested. The excel document includes the Paso Robles and San Luis Obispo distribution planning areas 8760 hour load data provided in MW and MVAR. As requested, the data provided was collected at the transmission level and includes all substations in each distribution planning area. Also included in the response are charts that display the 8760 load data for each, MW and MVAR, and for each DPA.

Deficiency 5 - Attachment 1, System Data Requests:

We reviewed PG&E's proposal and provide the following responses and clarifications. Our responses are listed in red in the attached [...see next page of this Attachment 1]. *In general, we need to see the sample data before we can confirm it would be adequate if provided for an entire DPA. Please submit the sample data with Atascadero 1101 as soon as possible for review* **(DUE: 5/16/18)**. *Please pay careful attention to the clarifications in the attached when preparing the response to help ensure the initial and subsequent responses are adequate.*

Response:

The information described below will be provided separately. By June 18, 2018, we expect to provide all of the information requested, except for the AMI meter data (other than the data we

provided on May 23, 2018 for the Atascadero 1101 feeder). We expect to provide the AMI meter data for the Paso Robles DPA by June 22, 2018.

We will work on collecting the requested SLO DPA data after completing the data request for the Paso Robles DPA. We do not have a firm estimate for the completion date at this time, but it will likely be no earlier than the end of June 2018 and may take until mid-July 2018.

Attachment 1 to Deficiency No. 5 - CPUC Request Submittal Schedule
(*red text indicates CPUC additions)

Item No.	Attachment 1 Request	Date Provided (or to be Provided)	Filename	Comments
Distribution Planning Area Data				
1.	Please submit the sample data with Atascadero 1101 as soon as possible for review (**DUE: 5/16/18**)	May 23, 2018	CONF_DR2642_501; CONF_DR2642_502; CONF_DR2642_503; CONF_DR2642_504; CONF_DR2642_505	Atascadero 1101 feeder only.
2.	We request the same scope and types of data for the entire San Luis Obispo DPA that we requested for the entire Paso Robles DPA (see pp. 3-4)	TBD		We are in the process of compiling the requested information for the San Luis Obispo DPA. This applies to all requests below for information about the San Luis Obispo DPA. We will provide this data after submitting all requested data for the Paso Robles DPA.
3.	We also request each of the PG&E power flow cases that CAISO relied on to support their approval of the proposed project. These should be provided at the same time as the initial Atascadero 1101 response package	May 16, 2018	CONF-a13_sum2015_area_cclp_JT.sav, CONF-a13_sum2018_area_cclp_JT.sav, CONF-a13_sum2023_area_cclp_JT.sav	Transmission system power flow basecase for 2015, 2018 and 2023.
4.	Hierarchy showing relationships between banks and feeders	May 16, 2018	CONF-Paso Robles Distribution Hierarchy.xlsx	Maps feeders to substation transformer banks to substations in Paso Robles DPA.
5.	Available SCADA data for each substation transformer bank and feeder in the planning area. Data provided shall be in the units of MW for transformer bank loading and in amps for feeder loading. Up to five years of historic data will be provided, depending on historic SCADA data availability for each asset	May 16, 2018	CONF-Atascadero 1101 5yr SCADA data.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA Feeders 5yr SCADA data.xlsx	Distribution load data from January 2013 to January 2018 for all feeders and substation banks in Paso Robles DPA.
6.	We think SCADA data is the best source for feeder and bank shapes for purposes of this study. In order to use AMI data, you would need to clean multiple years of AMI meter data, create non-AMI meter approximations, and determine generator load data. Using SCADA data would avoid these burdens and provides the real-time distribution load data from substation assets within the DPA. We suggest that you review the SCADA data and then let us know if you need additional data such as AMI meter data. Unfortunately, this proposal would not be adequate. We request the source data that PG&E provided to Integral Analytics for use in the LoadSEER tool	June 18, 2018	CONF-Base Shape - ATASCADERO 1101.csv; CONF-Base Shape - ATASCADERO 1102.csv; CONF-Base Shape - ATASCADERO 1103.csv; CONF-Base Shape - PASO ROBLES 1101.csv; CONF-Base Shape - PASO ROBLES 1102.csv; CONF-Base Shape - PASO ROBLES 1103.csv; CONF-Base Shape - PASO ROBLES 1104.csv; CONF-Base Shape - PASO ROBLES 1106.csv; CONF-Base Shape - PASO ROBLES 1107.csv; CONF-Base Shape - SAN MIGUEL 1104.csv; CONF-Base Shape - SAN MIGUEL 1105.csv; CONF-Base Shape - SAN MIGUEL 1106.csv; CONF-Base Shape - SAN MIGUEL 1107.csv; CONF-Base Shape - TEMPLETON 2108.csv; CONF-Base Shape - TEMPLETON 2109.csv; CONF-Base Shape - TEMPLETON 2110.csv; CONF-Base Shape - TEMPLETON 2111.csv; CONF-Base Shape - TEMPLETON 2112.csv; CONF-Base Shape - TEMPLETON 2113.csv	The load shapes for each feeder developed by Integral Analytics are 576 hour. Integral Analytics summed the 2012-2014 usage data of all customers on a particular feeder for each month in that period. An average usage value was derived for each hour on a weekday for each month and each hour on a weekend day for each month. This corresponds to 24 hours/day x 2 days/month x 12 months/year = 576 hours/year. PG&E does not have larger load shapes for these profiles.

Item No.	Attachment 1 Request	Date Provided (or to be Provided)	Filename	Comments
7.	Annual electric load growth forecast for each feeder from the adopted 2016 IEPR.	May 16 2018	CONF-Atascadero 1101 Growth from 2016 IEPR.xlsx, CONF-Atascadero 1101 New Load Applications.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA Feeder Growth from 2016 IEPR.xlsx	Forecasted annual demand growth for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 IEPR.
8.	Annual non-residential PV growth forecast for each feeder from the adopted 2016 IEPR.	May 16, 2018	CONF-Atascadero Forecast Adjustments from 2016 IEPR.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA DER Forecast Adjustments from 2016 IEPR.xlsx	Forecasted annual distributed energy resource (DER) growth, including non-residential PV, for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 EIPR.
9.	Annual residential PV growth forecast for each feeder from the adopted 2016 IEPR.	May 16 2018	CONF-Atascadero Forecast Adjustments from 2016 IEPR.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA DER Forecast Adjustments from 2016 IEPR.xlsx	Forecasted annual distributed energy resource (DER) growth, including residential PV, for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 EIPR.
10	Annual EV growth forecast for each feeder from the adopted 2016 IEPR.	May 16 2018	CONF-Atascadero Forecast Adjustments from 2016 IEPR.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA DER Forecast Adjustments from 2016 IEPR.xlsx	Forecasted annual distributed energy resource (DER) growth, including electric vehicles (EV), for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 EIPR.
11	Annual AAEE growth forecast for each customer-class on each feeder from the adopted 2016 IEPR.	May 16 2018	CONF-Atascadero Forecast Adjustments from 2016 IEPR.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA DER Forecast Adjustments from 2016 IEPR.xlsx	Forecasted annual distributed energy resource (DER) growth, including AAEE, for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 EIPR.
12	Annual LMDR (Load Modifying Demand Response) growth forecast for each feeder from the adopted 2016 IEPR.	May 16, 2018	CONF-Atascadero Forecast Adjustments from 2016 IEPR.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA DER Forecast Adjustments from 2016 IEPR.xlsx	Forecasted annual distributed energy resource (DER) growth, including LMDR, for each customer class on each feeder in the Paso Robles DPA for 2018 to 2027 from the adopted 2016 EIPR.

Item No.	Attachment 1 Request	Date Provided (or to be Provided)	Filename	Comments
13	576 hour shapes for Non-Residential PV, Residential PV, EV, AAEE, and LMDR. We request 8760 data. Our tools are capable of handling it.	May 16, 2018	CONF-EV Charging Profile, xlsx, CONF-LMDR Profile.xlsx, CONF-AAEE PV Non-Res Profile.xlsx, CONF-AAEE PV Res Profile.xlsx	The load shapes for each feeder developed by Integral Analytics are 576 hour/year. Integral Analytics summed the 2012-2014 usage data of all customers on a particular feeder for each month in that period. An average usage value was derived for each hour on a weekday for each month and each hour on a weekend day for each month. This corresponds to 24 hours/day x 2 days/month x 12 months/year = 576 hours/year. PG&E does not have larger load shapes for these profiles.
14	576 hour shapes for 4 customer classes in the Paso Robles area: Industrial, Commercial, Residential, and Agricultural. We request 8760 data. Our tools are capable of handling it.	May 16, 2018	CONF-AAEE Agr Profile.xlsx, CONF-AAEE Com Profile.xlsx, CONF-AAEE Ind Profile.xlsx, CONF-AAEE Res Profile.xlsx	Same comment as above.
15	Hourly weather data for the Paso Robles weather station (PPRB) from 4/1/1983 to 9/30/2017	May 16, 2018	Paso Robles Weather Station Data.csv	
16	Future known new loads, by feeder, indicating relevant customer-class	May 16, 2018	CONF-Atascadero 1101 New Load Applications.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA New Large Load Applications.xlsx	Applications for new large loads/block loads by feeder and customer class in Paso Robles DPA.
17	Feeder and bank capabilities. Data provided shall be in the units of MW for transformer bank capabilities and in amps for feeder capabilities	May 16, 2018	CONF-Paso Robles Bank and Feeder Capabilities.xlsx	Provides capabilities for substation transformer banks and feeders in Paso Robles Distribution Planning Area (DPA)
GIS Infrastructure Data [either ESRI shape files (preferred) or Google KMLs]				
18	Existing and proposed transmission lines for PG&E's Paso Robles Distribution Planning Area (DPA) and existing transmission lines in the San Luis Obispo DPA	June 18, 2018	CONF_PasoRoblesDPA_GISDATA_06052018_CPUC.gdb, CONF_ETGIS_OHLINESEG	This shows the existing transmission lines in the DPA. The GIS data for the proposed 70 kV line and 230 kV interconnection for the Estrella project was provided when the application was submitted in January 2017. No other new transmission lines are currently proposed in the Paso Robles DPA.
19	Existing and proposed substations in both the Paso Robles DPA and San Luis Obispo DPA	June 18, 2018	CONF_PasoRoblesDPA_GISDATA_06052018_CPUC.gdb, CONF_SUBSTATION	This shows the existing substations in the DPA. The GIS data for the proposed substation for the Estrella project was provided when the application was submitted in January 2017. No other new substations are currently proposed in the Paso Robles DPA.
20	Current distribution infrastructure lines	June 18,	CONF_PasoRoblesDPA_GISDATA_06052018_CPUC.gdb; CONF_PriOHConduct; CONF_PriUGConduct;	Paso Robles DPA only.

Item No.	Attachment 1 Request	Date Provided (or to be Provided)	Filename	Comments
	(primaries and secondaries) in both DPAs	2018	CONF_SecOHConduct; CONF_SecUGConduct	
21	Service address/location IDs or meter IDs (to be able to be paired with meter data described below) in both DPAs	June 18, 2018	CONF_PasoRoblesDPA_GISDATA_06052018_CPUC.gdb, CONF_ServiceLocations_ALLDATA;	Paso Robles DPA only.
22	Known distributed generation (DG; in front of and behind the meter) with system sizing information, including in front or behind the meter position; system sizing information must identify if it is nameplate, AC, or CEC de-rated in both DPAs	June 18, 2018	CONF_PasoRoblesDPA_GISDATA_06052018_CPUC.gdb\CONF_ServiceLocations_ALLDATA - GIS Feature Class	All distributed generation listed is behind the meter. The system size information is provided as an effective rating (identified as "EFFRATING"), which is the CEC de-rated value.
23	Bulk Power generation resources within the DPA (if any) with system sizing information; system sizing information must identify if it is nameplate, AC, or CEC de-rated in both DPAs		None provided for Paso Robles DPA.	The bulk power system generally means generation and transmission facilities and their control systems, but not the local distribution of electric energy. We interpret this request as for generation sources within the Paso Robles DPA that are connected to the transmission system. There are none in the Paso Robles DPA.
Non-GIS Infrastructure Data [CSV (preferred) or Excel formats are acceptable]				
24	Service address/location or meter ID and circuit association table for all load in both DPAs	May 16, 2018	CONF-Atascadero 1101_ServicePoint_Transformer_CircuitID-182541101.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-PasoRobles_ServicePoint_Info_GIS_Data.xlsx	Lists locations in Paso Robles DPA of service points and advanced metering infrastructure (AMI) opt-out customers; associated circuits and transformers; and associated distributed energy resources (if any).
25	Identification of any advanced metering infra-structure (AMI) opt-out locations in both DPAs	June 18, 2018	CONF-PasoRobles_ServicePoint_Info_GIS_Data.xlxs	Paso Robles DPA only.
26	DG type, size, online date, and circuit association for all Distributed Energy Resources in both DPAs	May 16, 2018	CONF-EV Charging Profile, xlsx; CONF-LMDR Profile.xlsx; CONF-AAEE PV Non-Res Profile.xlsx; CONF-AAEE PV Res Profile.xlsx	Paso Robles DPA only.
27	Circuit and transformer association for all circuits in both DPAs	May 16, 2018	CONF-Paso Robles Distribution Hierarchy.xlsx	Paso Robles DPA only.
28	Transformer and substation association for all transformers in both DPAs	May 16, 2018	CONF-Paso Robles Distribution Hierarchy.xlsx	Paso Robles DPA only.
29	Customer class and service location/meter association for all service locations/meters in both DPAs	May 16, 2018	CONF-Atascadero 1101_ServicePoint_Transformer_CircuitID-182541101.xlsx	Atascadero 1101 feeder only.
		June 18, 2018	CONF-Paso Robles DPA ServicePoint_Transformer_CustClass.xlsx	Lists all service point numbers and related customer classes on Paso Robles DPA feeders.

Item No.	Attachment 1 Request	Date Provided (or to be Provided)	Filename	Comments
Load Data [Can be provided via Application Programming Interface (API; preferred) or in CSV format. There must be an association with a circuit, substation, or service location/meter ID as is appropriate for all records.]				
30	SCADA data for all circuits in both DPAs, where available, for a period of 5 full years	May 16, 2018	CONF-Atascadero 1101 5yr SCADA data.xslx	Atascadero 1101 feeder only. SCADA data for the 5-year period from April 1, 2013 to April 1, 2018.
		June 18, 2018	CONF-Paso Robles DPA Feeders 5yr SCADA data.xlsx	Entire Paso Robles DPA, including Atascadero 1101 feeder. SCADA data is provided for the 5-year period from February 1, 2013 to January 30, 2018. The date range for the full SCADA data was modified as compared to Atascadero 1101 feeder data provided on May 16, 2018 to end on the same data that the most recent year of AMI meter data is available for, which is February 1, 2017 to January 31, 2018.
31	SCADA data for all substations in both DPAs, where available, for a period of 5 full years	June 18, 2018	See above	Same as above.
32	AMI meter data (interval) for all meters in both DPAs, where available, for a period of 1 full year (12 full months of data), ending with the most recent month for which a full month of data is available	May 23, 2018	CONF-DR2642_501.txt, CONF-DR2642_502.txt, CONF-DR2642_503.txt, CONF-DR2642_504.txt, CONF-DR2642_505.txt	AMI meter data for Atascadero 1101 feeder is provided for the period February 1, 2017 to January 31, 2018.
		June 22, 2018		Intend to provide AMI meter data for the Paso Robles DPA (except Atascadero 1101 feeder) by June 22, 2018.
33	Monthly KWh for all AMI opt-out customers in both DPAs	June 22, 2108		Intend to provide monthly KWh usage for AMI opt-out customers in the Paso Robles DPA by June 22, 2018.