

February 22, 2017

Submitted to: CAISO (regionaltransmission@caiso.com)

**COMMENTS OF NEXTERA ENERGY TRANSMISSION WEST, LLC
ON THE CALIFORNIA INDEPENDENT SYSTEM OPERATOR CORPORATION'S
2017-2018 TRANSMISSION PLANNING PROCESS FEBRUARY 8, 2018
STAKEHOLDER MEETING**

NextEra Energy Transmission West, LLC (NEET West) appreciates this opportunity to provide comments on the California Independent System Operator Corporation's (CAISO) 2017-2018 Transmission Planning Process (TPP) February 8, 2018 stakeholder meeting. In summary, we respectfully request CAISO to consider the following factors as it undertakes its current transmission planning efforts to improve reliability in the 2017-2018 TPP:

NEET West appreciates CAISO's re-evaluation of the Lockeford – Lodi area thermal and voltage project need (2012-13 vs. 2017-18), but the project should be open for competitive solicitation due to the significant scope change from the project that was originally approved in the 2012-2013 TPP.

The CAISO approved the Eight Mile - Lockeford 230 kV Project in the 2012-2013 TPP. At the time, the project was needed to help mitigate thermal and voltage performance issues in the Lockeford, Lodi, and Industrial 60 kV pocket. The project was submitted in the 2012 open request window and included construction of a new 230 kV double circuit transmission line from the Eight Mile substation to the Lockeford substation, with a new 230 kV bus at Industrial that would allow the new line to be looped into Industrial. The project was also supposed to include a new 230/60 kV transformer at Industrial to serve the 60 kV system. The project cost, at the time of submittal was \$80-\$105M. The CAISO 2012-2013 TPP report lists the following regarding the Eight Mile - Lockeford 230 kV Project:

This project addresses all reliability issues identified in the Lockeford/Lodi 60 kV system. The ISO determined that the new Eight Mile - Lockeford 230 kV double circuit tower line project as needed to address thermal overloads and voltage concerns in the Lockeford/Lodi 60 kV system.

In addition to addressing the reliability needs in the area, this solution will complete a 230 kV loop around the city of Stockton and facilities connection of future load and generation development in the area. However, due to change in the load forecast and increase in the cost estimate, in 2017-18

TPP cycle CAISO opened for consideration number of different alternatives including building a Lockeford – Industrial 230 kV project.

Following PG&E’s petition on March 10, 2016, the CAISO conducted a review of all previously approved projects in the 2016-2017 Transmission Plan (March 2017, Section 2.5.9), which was primarily by changed assumptions like load forecast. The CAISO’s review indicated that the Lockeford - Lodi needed further evaluation and the CAISO recommended that PG&E not proceed with filings for permitting and certificates of public convenience and necessity.

As a result of the need for further analysis, the CAISO’s 2017-2018 Final Study Plan states that “Projects with potential significant scope change will not be modeled in the starting base case”¹ for the current TPP. Without the Lockeford - Lodi project modeled in study base cases, the 2017-2018 Preliminary Reliability Assessment Results (August 15, 2017) list a significant number of reliability problems in the Central Valley Area, in particular the area of Lockeford, Industrial, and Lodi.

It appears that the Lockeford - Industrial 230 kV Project proposed in the draft transmission plan has not been previously approved because it includes a significant scope change from the previously-approved Eight Mile - Lockeford 230 kV Project. We urge the CAISO to release the Lockeford-Industrial 230kV project for competitive solicitation. The Eight Mile - Lockeford 230 kV Project was included the 2012-2013 TPP, and therefore grandfathered under pre-Order 1000 competitive transmission rules, based on FERC’s approval of CAISO’s request that the Order 1000 rules become effective for the 2013-2014 transmission planning cycle. *California Independent System Operator Corporation*, 143 FERC ¶ 61,057 (2013). Each transmission planning cycle consists of several phases, and steps within those phases. Following the creation of the Unified Planning Assumptions and Study Plan in Phase I, Phase II requires the performance of technical studies and other assessments necessary to develop the comprehensive Transmission Plan. The CAISO technical study results “will identify needs and proposed solutions to meet Applicable Reliability Criteria, CAISO planning standards, and other applicable planning standards.” CAISO Tariff, sec. 24.4.1. Each transmission planning cycle thus has its own identification of needs. The need identified in the 2012-2013 cycle, described further below, is different than the current need in the region, summarized below. This is no longer the same need, and the project identified as the solution in the 2012-2013 cycle likewise is no longer the same. As a result, the project should not be deemed grandfathered under Order 1000, and should instead be subject to the competitive process.

¹ CAISO, 2017-2018 Transmission Planning Process Unified Planning Assumptions and Study Plan, March 31 2017, <http://www.caiso.com/Documents/Final2017-2018StudyPlan.pdf>, Page 13.

NEET West proposed the following 230 kV transmission solution in lieu of the Eight Mile-Lockeford 230 kV project from the 2012-2013 TPP that CAISO indicated was in need of further evaluation.

- A new Lockeford – Industrial 230 kV Line (6 miles, 400 MVA Emergency)
- A new Industrial 230 kV bus with a new 230/60 kV Industrial Transformer (170 MVA)

The estimated cost of the proposed Lockeford – Industrial 230 kV system is \$30 Million in 2017 dollars.

The Lockeford - Industrial project improves the reliability of the Lodi, Lockeford, Industrial. Specifically, the project addresses the following P6 overloads identified in the 2027 Summer Peak cases:

Table 1: Limiting Contingencies

Contingency	Category
LODI-INDUSTRIAL & LOCKEFORD-INDUSTRIAL 60 kV	P6, N-1-1
LOCKEFORD-LODI #2 & LOCKEFORD-INDUSTRIAL 60KV	P6, N-1-1
LODI-INDUSTRIAL & LOCKEFORD-LODI #2 60KV	P6, N-1-1

The Lockeford - Industrial 230 kV project recommended by CAISO for board approval in the draft 2017-2018 TPP is a significant scope change from the original Eight Mile - Lockeford 230 kV project from the 2012-2013 TPP. The Lockeford and Lodi area 60 kV lines were identified with existing overloads under various category C contingency conditions in the 2011-2012 (and 2012-2013) transmission plan². Additionally, the Lockeford 230/60 kV transformer #2 and #3 were also

² **CAISO (2011-12) Thermal and Voltage Results**

Lockeford-Lodi area contingencies

Single Contingencies (N-1, P1)

- Lockeford 230 kV Bus Low Voltage
- Lockeford 60 kV Line No. 1 Overload

Multiple contingencies (N-1-1):

- Lockeford - Lodi 60 kV Line Nos. 1, 2, & 3 overloads up to 131% (2021 case)
- Lockeford - Industrial 60 kv Line overload up to 132% (2021 case)
- Lodi - Industrial 60 kV Line Overload up to 167 % (2021)
- Lockeford Area Low Voltages Overload including Mosher 60 kV

CAISO (2017-18) Thermal and Voltage Results

Lockeford-Lodi area contingencies

Single Contingencies (N-1, P1)

- Lockeford 230 kV Bus Low Voltage
- Lockeford 60 kV Line No. 1 Overload

Multiple contingencies (N-1-1, P2, P2-1, P6):

- Lockeford - Lodi 60 kV Line Nos. 1, 2, & 3 overloads up to 178% (2027 case with gen retirement)
- Lockeford - Industrial 60 kv Line overload up to 152% (2027 case with gen retirement)
- Lodi - Industrial 60 kV Line Overload up to 194 % (2027 with gen retirement)
- Lockeford Area Low Voltages Overload

expected to overload starting in 2018 under category C events. At that point in time, the Mosher substation (50 MW load) was also a concern that required a mitigation plan to prevent load curtailment under single contingency events. As described in the 2011-2012 Transmission Plan, the mitigation solution recommended by the City of Lodi included the following scope:

1. Construct a 230 kV Double Circuit Transmission Line from Eight Mile substation to Lockeford substation;
2. Construct a new 230 kV bus at Industrial substation and loop one of the new Eight Mile-Lockeford 230 kV lines into this bus.

The Lockeford-Industrial 230 kV project, as proposed in the 2017-2018 TPP, eliminates the Eight Mile-Lockeford transmission line and replaces it with a Lockeford-Industrial substation. The revised scope also includes a loop in of the existing Bellota-Brighton 230 kV line into Lockeford substation. The loop of the Bellota-Brighton 230 kV line can be independently constructed and owned by PG&E, while the new Lockeford-Industrial 230 kV line can be constructed and owned independently through the competitive solicitation process. This proposal results in fewer miles of new 230 kV transmission line and will address the same reliability issue at a significantly lower cost. NEET West requests that the CAISO release the Lockeford-Industrial 230 kV line for competitive solicitation.

Allowing significant scope changes on bulk transmission projects without requiring a competitive solicitation process favors incumbent PTOs by enabling a lower voltage project ineligible for competition to be revised to a high voltage project that would otherwise have been open to competition. Furthermore, allowing significant scope changes without a competitive solicitation process potentially exposes CAISO ratepayers to higher costs. Requiring significant budget and system topology scope changes to undergo the competitive solicitation process will ensure that the lowest-cost alternative is being selected.

NEET West requests that CAISO re-examine the proposed Lopez – Divide 500/230 kV transmission project in this cycle and not dismiss the solution.

PG&E's Midway-Andrew Project was approved in the 2012-13 TPP to address P2, P6 and P7 reliability concerns. The estimated project costs have increased from the original proposal of \$120-\$150M to approximately \$414M. The project was subsequently put on hold by the CAISO in the 2016-17 TPP to determine whether the need was still present under the current load forecast, as well

as to evaluate potential reduced or revised project scopes. The Midway-Andrew project was not modelled in the 2017-18 TPP CAISO's base cases. NEET West submitted the Lopez – Divide project in the 2017-2018 request window. The CAISO's 2017-2018 TPP assessment concluded that a transmission project is needed for the area to relieve overloads resulting from P2, P6 and P7 outages.

To improve reliability by mitigating thermal overloads and voltage excursions within the Central Coast/Los Padres (Morro Bay, Mesa) (CCLP) area^[1], NEET West submitted a lower cost transmission alternative to the PG&E's Midway – Andrew 230 kV project with an estimated cost of \$100M. The current in-service date for the Midway – Andrew 230 kV project was estimated at 2025, which matches other alternatives considered in the draft 2017-18 TPP.

The recently-proposed Lopez-Divide project consists of a new Lopez 500 kV ring bus to loop into the Diablo – Midway #3 500 kV line, a new 230 kV substation at Lopez and a new 230 kV Divide bus, a new 24-mile 230 kV transmission from Lopez substation to Divide substation, and Lopez 500/230 kV and Divide 230/115 kV transformers.

NEET West's studies indicate the Lopez-Divide project resolves the same potential overloads to the CCLP system identified in this year's Preliminary Reliability Assessment that are resolved by the Midway-Andrew Project. However, the Lopez-Divide project has a much lower cost. The solution represents a low cost, lower environmental impact, and robust solution for the PG&E Central Coast and Los Padres area. The project also eliminates the significant reliance on the Mesa/Santa Maria RAS and Divide RAS. Furthermore, CAISO's evaluation of the project in 2017-18 TPP also confirmed that this project addresses all the post contingency thermal and voltage collapse issue for P5, P6, and P7 category contingencies.

The draft TPP stated that the project does not comprehensively resolve the reliability needs of the area, which is an accurate assessment. However, NEET West found that none of the current TPP proposed alternatives are comprehensive and, like the Lopez-Divide proposal, all other solutions also require additional minor system upgrades in order to resolve all reliability concerns. NEET

[1] Following PG&E's petition, the CAISO conducted a review of all previously approved projects in the 2016-2017 Transmission Plan (March 2017, Section 2.5.9) which was stated to be driven primarily by changed assumptions like load forecast. The CAISO's review indicated that the PG&E's proposed Midway-Andrew project needed further evaluation and the CAISO recommended that PG&E does not proceed with filings for permitting and certificates of public convenience and necessity. As a result of the need for further analysis, the CAISO's 2017-2018 Final Study Plan states that "Projects with potential significant scope change will not be modeled in the starting base case" [1] for the current TPP. Without the Midway-Andrew project modeled in study base cases, the 2017-2018 Preliminary Reliability Assessment Results (August 15, 2017) list a significant number of reliability problems in the Central Coast Los Padres (CCLP) study area. The purpose of the NEET West assessment is to determine a more economical reliability alternative can resolve the reliability needs in the CCLP area.

West respectfully requests that the CAISO completes the comprehensive evaluation of the NEET West Lopez - Divide project in 2017-18 TPP as a replacement for the Midway – Andrew Project.

NEET West performed a high-level review of the two alternatives listed in the 2017-18 TPP, which included a new line from the existing Midway-Diablo to Mesa or a new Andrew substation. The proposed alternatives will require additional upgrades in order to resolve all reliability concerns:

- **Loss of the Mesa 230/115 kV transformers.**
 - This outage will sever the tie between the 230 kV system and 115 kV system at Mesa, therefore the TPP proposed alternative for a new line into the Mesa 230 kV bus will not provide relief to the system.
- **Loss of Mesa Sections 1D and 2D.**
 - This outage also severs the tie between the 230 kV bus and 115 kV bus at Mesa. Therefore, a new 230 kV line into the Mesa 230 kV bus will be lost with the contingency. The NEET West Lopez Divide proposal will only require loss of approximately 10 MW of post contingency load, while the TPP proposed alternative into Mesa would require 270 MW of load.
- **Loss of Divide-Mesa and Divide-Cabrillo.**
 - A new Midway-Diablo to Mesa, a new Midway-Diablo to a new Andrew substation, and the NEET West Lopez-Divide will all need to include additional mitigation measures to resolve this overload.

NEET West strongly recommends that Lopez – Divide 500/230 kV transmission proposal is examined more closely in this transmission planning cycle. The project is estimated by NEET West to cost \$100M in 2017 dollars with an estimated in-service date of 2023. Like other alternatives listed in the Draft TPP, this project will need to be part of a comprehensive plan that may include multiple components to address all reliability concerns in the area.

Conclusion

NEET West commends CAISO’s staff for all of their time and effort put into the 2017-2018 TPP. NEET West submits these comments with the goal of enhancing the processes utilized in the evaluation and selection of the most efficient and effective reliability, economic, and public policy transmission projects in the transmission planning process. NEET West appreciates the opportunity to participate in the transmission planning process and to provide these comments.

Sincerely,



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