

Docket Number 06-SPPE-2
First Round Data Requests
El Centro Unit 3 Repower Project
July 2006

DATA REQUEST #15
TRANSMISSION SYSTEM ENGINEERING

BACKGROUND

The California Environmental Quality Act (CEQA) requires the identification and description of the “Direct and indirect significant effects of the project on the environment.” For the identification of indirect or downstream transmission impacts, staff relies on the System Impact and Facilities Studies as well as review of these studies by the agency responsible for insuring that the interconnecting grid meets reliability standards, in this case, the Imperial Irrigation District (IID). The studies analyze the effect of the proposed project on the ability of the transmission network to meet reliability standards. When the studies determine that the project will cause the transmission to violate reliability requirements, the potential mitigation or upgrades required to bring the system into compliance are identified. The mitigation measures often include the construction of downstream transmission facilities. CEQA requires the analysis of any downstream facilities for potential indirect impacts of the proposed project. Without a complete System Impact Study, staff is not able to fulfill the CEQA requirement to identify the indirect effects of the proposed project.

According to the System Impact Study,” The interconnection of the proposed generating facility to the existing 92 kV transmission system was found to have no significant impact on the IID system as shown by the lack of overload and voltage violations.” The study also found that the proposed project would have minimal affects on the transmission networks of neighboring utilities. However, staff is concerned that the study is not complete and does not provide mitigation measures for identified overloads.

The System Impact Study identified overloads in some transmission elements (Page 5 of the system impact study report), but did not address the mitigation measures required to eliminate the overloads. The study also did not analyze the effect of the potential outage of the El Centro switching station 92 kV bus where about twelve 92 kV transmission lines, two step-up transformers (230/92 kV & 161/92 kV), and four El Centro generators are now connected. Because this outage was not studied, no mitigation for a possible overload was identified, and impacts of the proposed project may have been missed. Staff has included a list of other contingencies or outages that were not included in the System Ict Study (located after Data Requests 16 and 17).

DATA REQUEST #15
TRANSMISSION SYSTEM ENGINEERING

DATA REQUEST

15. The SIS indicates there are several overloads in the IID system that are pre-project or would occur without the proposed project. Three of these pre-project overloads are exacerbated by the addition of the El Centro 3 Repowering Project while other pre-project overloads are reduced (See Page 5 of the SIS).
- a. Please explain how the study concluded that the proposed project has “no significant impact on the IID system as shown by the lack of overload and voltage violations,” when the study identifies several overloads.
 - b. Where the study identifies overloads (pre- or post- project), please identify the planned mitigation measures and implementation schedule and discuss the effect of the proposed generating project on the IID system with the planned mitigation.

DATA RESPONSE

15a:

In the study concluded there was no significant impact to the system due to the addition of the Project because either the elements were overloaded prior to the Project and would require mitigation without the Project, or application of emergency ratings with some minimal generation re-dispatch would mitigate the overload. The study generally found heavier loading in the sensitivity cases, with maximum IID generation dispatch. For study purposes, this heavy loading condition was studied, but operationally IID would likely not operate all generation in their service territory, which would leave no operating reserves. The loadings were noted for this heavy generation scenario, but not considered significant.

Further, as mentioned in the SIS, IID is conservative in identifying element ratings in the power flow database, using the lower continuous rating for emergency ratings. It could be expected that many overloads could be mitigated by applying the equipment emergency ratings. And if required for emergency conditions, require that some generation re-dispatch be required that is most effective at relieving the overload.

15b:

The overload of the Dixieland-Dixie Prison 92-kV line was identified as overloaded in the sensitivity cases with maximum IID generation (as shown in

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Attachment E, One Line Diagram of Outages). For this heavy generation condition and an outage of the U.S. Navy Air Field-El Centro Terminal 92-kV line, a 103% overload of the continuous rating was noted for the pre-Project case and a 113% overload of the continuous rating was noted for the post-Project case. The emergency rating of this line (which is constructed with copper conductor and sufficient clearances) is 115% of the continuous rating, or approximately 62 MVA. Therefore, the loading on this element was determined to be below the emergency rating. This overload was also not considered significant because the element was overloaded under pre-Project conditions due to the increased load levels to reflect 2009 loads for this southern area of IID's service territory.

The overloads associated with the N-2 contingency of the Coachella Valley – Devers and Coachella Valley – Ramon 230-kV lines does cause significant loading on several of IID's system facilities. IID implements a combination of generation re-dispatch and remedial action schemes (depending on the level of generation output) of the generation resources interconnected to the Midway 230 kV station to mitigate overloads on the IID system. The Coachella Valley 230/92-kV transformer also has an emergency rating of approximately 110% of the continuous rating, and with some generation re-dispatch of the units interconnected at Midway, the loading of this facility would be reduced well below the continuous rating of this facility.

The overloads associated with the N-2 contingency of both Coachella Valley – Midway 230-kV lines does cause significant loading on several of IID's system facilities. IID implements a combination of generation re-dispatch and remedial action schemes (depending on the level of generation output) of the generation resources interconnected to the Midway 230 kV station to mitigate overloads on the IID system. To reduce the loading on the Ave58TP1 – ESM161 161-kV line (a.k.a. the L – Line), additional generation re-dispatch will be required between the generation interconnected at Midway, Salton Sea 6, and the new resource under review to interconnect to the L-Line.

IID believes that the SIS accurately reflects and supports the conclusion that the addition of the El Centro Unit 3 Repower Project would not significantly impact the system.

ATTACHMENT E
TRANSMISSION SYSTEM ENGINEERING
ONE LINE DIAGRAM OF OUTAGES FIGURES