

Memorandum

To: ISO Board of Governors
From: Keith Casey, Vice President, Market & Infrastructure Development
Date: July 8, 2014
Re: **Decision on the Delaney-Colorado River Transmission Project**

This memorandum requires Board action.

Executive Summary

On March 20, 2014, the ISO Board of Governors approved the ISO's 2013-2014 Transmission Plan, except for the proposed Delaney-Colorado River 500 kV line. The Board directed Management to take additional time to review a number of issues raised about the Delaney-Colorado River transmission project and to expedite this review process so that the project could be brought back to the Board at the earliest opportunity.

In particular, the Board of Governors requested a more holistic consideration of the issues relating to the deliverability of renewable generation from Imperial Valley before approving the Delaney-Colorado River Transmission Project. Other issues raised during the course of the Board discussion on this project were whether the IID-approved transmission upgrades referred to by IID staff were properly modeled in the ISO 2013-2014 Transmission Plan analysis, and whether the announced intent of NV Energy to participate in the energy imbalance market would materially affect the study results.

Management has further evaluated these issues and believes, based on the discussion provided below, that they have all been adequately addressed. Management is therefore again recommending the Board approve the Delaney – Colorado River. Specifically,

- The Delaney-Colorado River project will not materially diminish the potential need for or value of other transmission options the ISO is currently considering to support deliverability of renewables out of Imperial County.
- The ISO confirmed that the IID-approved transmission upgrades discussed by IID staff at the March 20 Board meeting were modeled in the ISO's 2013-2014 studies.

- Further, a sensitivity study, of the impact on the benefits of the Delaney-Colorado River Transmission Project of NV Energy joining the energy imbalance market using the production simulation models developed in the ISO/NV Energy joint studies, confirms Management's view that NV energy's participation in the energy imbalance market does not adversely affect the Delaney-Colorado River project benefits.

Given the resolution of these issues and the findings in the 2013-14 Transmission Plan that the Delaney-Colorado River project provides:

- Sufficient economic benefits relative to the estimated cost of the project;
- Potential for policy benefits by increasing the deliverability of renewable generation from the Imperial Valley area; and,
- Reliability benefits by reducing the risk of potential overloading on key transmission paths following the loss of a major common corridor 500kV import path to California,

Management proposes the following motion:

Moved, that the ISO Board of Governors approves the Delaney-Colorado River transmission project as part of the ISO 2013-2014 Transmission Plan, and as described in the memorandum dated July 8, 2014.

Background

The objective of the ISO's economic studies is to identify transmission congestion and analyze whether network upgrades can cost effectively mitigate the congestion. Generally speaking, transmission congestion increases consumer costs because it prevents lower priced electricity from serving load. Resolving congestion bottlenecks is cost effective when ratepayer savings are greater than the cost of the project. In such cases, the transmission upgrade is warranted as an economic project.

The study plan process analyzed benefits in accordance with the ISO's Transmission Economic Assessment Methodology (TEAM), estimating production simulation and capacity benefits from the perspective of ISO ratepayers. The identified benefits included energy production benefits to ISO ratepayers through more efficient overall market operation, as well as the potential for procurement of additional resource capacity from Arizona or the Imperial County area.

The conclusions set out in the draft 2013-2014 Transmission Plan recommended approval of the Delaney – Colorado River 500 kV line based on:

- Sufficient economic benefits demonstrated relative to the estimated cost of the project. Sensitivity analyses also showed economic benefits under a majority of assumptions and uncertainties;
- Potential for policy benefits in increasing the deliverability of renewable generation from the Imperial Valley area¹; and,
- Reliability benefits by reducing the risk of potential overloading on key transmission paths following the loss of a major common corridor 500kV import path to California.²

As previously noted, the economic justification for the project is dependent on its estimated cost and, as a result, the ISO will carefully scrutinize and assess cost containment capabilities and commitments provided by project sponsors with respect to the estimated cost assumed in the ISO's economic analysis.

Potential Interaction between the Delaney-Colorado River Transmission Project and Potential Major Transmission Additions from Imperial County

Through the past two transmission planning cycles, the ISO committed to achieving- and then maintaining up to 1,400 MW of import capacity from IID to enable new IID-connected generation to become and remain deliverable into the ISO market³. Until the early retirement of SONGS, it appeared that the targeted import capacity could be achieved through reinforcements already under development. However, in the 2013-2014 transmission planning process, which was the first planning cycle that considered the SONGS early retirement, we concluded that the SONGS retirement materially shifted transmission path flows and substantially reduced the incremental future import capacity anticipated from IID. In the 2013-2014 Transmission Plan, the ISO committed to further study and identify in the 2014-2015 planning process upgrades necessary to achieve the originally targeted import capacity. Those studies are underway, and they rely on renewable generation portfolios provided by the CPUC that provide scenarios with and without the higher level of renewable generation in Imperial County. Management anticipates that the results will be relied upon in the CPUC's development of the renewable generation portfolios for the 2015-2016 transmission planning process.

¹ In the ISO 2013-2014 Transmission Plan the economic value of the additional deliverability provided by the Delaney – Colorado River project was based on it being utilized as incremental import capacity between Arizona and California. A state procurement decision to repurpose this deliverability to renewable resources in the Imperial Valley would presumably imply that this alternative use is of equal or higher value than using it to access conventional generation resources in Arizona and therefore would maintain or increase the overall economic benefit of the project.

² The development of generation in southeastern California and the retirement of generation in southwestern California increase the potential for higher flows and overloads under this contingency.

³ This was a significant increase from the existing 400-500 MW of import capacity established through the historical import of existing geothermal development.

The Delaney-Colorado River Transmission Project is a comparatively modest transmission project that would complement the major reinforcements currently being contemplated for supporting deliverability out of IID. The Delaney-Colorado River Transmission Project entails building an approximate 115 mile 500kV line between the Delaney substation (currently under construction by Arizona Public Service) and the existing Colorado River substation (owned by Southern California Edison and would complete a second contiguous circuit from the Palo Verde to Devers substations. The economic and capacity benefits of the enhancement to the transmission system begin to accrue immediately upon completion of the circuit, which is targeted for 2020. The benefits do not rely on the development of other infrastructure that is not already underway, either transmission or generation, before benefits begin.

Furthermore, the ISO Delaney-Colorado River Transmission Project studies indicated an incremental import capacity benefit of 200 to 300 MW from Arizona, which could be re-purposed to marginally increase import capacity from IID - though at a somewhat lesser amount due to electrical differences between the two areas. Using this marginal increase in import capacity to support generation deliverability out of the IID system will provide some near term relief to the deliverability limitations for this area and would ultimately complement the more significant transmission reinforcements being considered to support the original goal of achieving and maintaining a 1,400 MW import capability from IID, and possibly even higher levels of renewable generation development in Imperial County that are being considered.⁴

Further, unlike the more significant reinforcements currently under consideration for supporting renewable development in Imperial County⁵, the Delaney-Colorado River Transmission Project does not enhance reliability in the LA Basin/San Diego area and therefore would not detract from the potential reliability benefits that these more significant reinforcements may have from enhancing the import capability to the LA Basin/San Diego area.

Next Steps for Future Consideration of Transmission from Imperial County

As part of the 2014-2015 planning process, the ISO will undertake technical analysis of both the LA Basin/San Diego reliability and Imperial County renewables deliverability issues. These analyses will consider several transmission projects that have been put forth by stakeholders to both address the residual need identified above and provide access to significant additional renewable generation in Imperial County.

⁴ The renewables portfolios provided to the ISO by the CPUC and CEC on February 27, 2014 provide for 1000 MW of new renewables in the Imperial zone, as well as a sensitivity with 2500 MW new renewables in the Imperial zone (an incremental 1500 MW).

⁵ Proposals for additional transmission capacity from Imperial County such as the Imperial Irrigation District's Strategic Transmission Expansion Plan (STEP) have been conceived to both achieve access to significant potential volumes of additional renewable generation and provide further mitigation of the LA Basin/San Diego reliability issues stemming from OTC generation retirements and the early retirement of the San Onofre Nuclear Generation Station.

The ISO has also initiated a separate consultation process in parallel with the 2014-2015 planning process to explore two issues that will be critical input into that planning process:

1. An objective assessment of the feasibility of the various proposed major transmission alternatives; and
2. The possibilities and challenges of revisiting the historical import capacity methodology to consider reallocations between imports from Arizona and imports from IID.

The first stakeholder session is scheduled on July 14, and next steps will depend on the outcome of that session and feedback received by the ISO. These processes will continue and are not materially affected by the Delaney-Colorado River Transmission Project as noted below.

Competitive Solicitation for New Transmission Elements

The ISO's transmission planning process includes a competitive solicitation process for reliability-driven, policy-driven and economically driven transmission facilities over 200 kV. Upgrades to or additions on an existing participating transmission owner facility and the construction or ownership of facilities within an existing participating transmission owner's substation are excluded from competition.

The Delaney-Colorado River 500 kV Transmission Project is eligible for competitive solicitation. Consistent with the tariff and subject to the Board's approval of the project at this meeting, the ISO will initiate the competitive solicitation process within the month of August. This process then provides a period of at least two months that will provide an opportunity for project sponsors to submit specific proposals to finance, own, and construct the regional transmission facilities subject to competitive solicitation identified in the comprehensive Transmission Plan.

Conclusion

For the above reasons, Management recommends the Board approve Delaney-Colorado River Transmission Project as an attractive economically driven transmission solution separately, independently, and in advance of any other projects intended to address broader Imperial County and LA Basin/San Diego area considerations. In addition to the projected economic benefits, the Delaney-Colorado River Transmission Project provides potential policy benefits by increasing the deliverability of generation from the Imperial Valley area and reliability benefits by reducing the risk of potential overloading on key transmission paths.