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2009 IEPR Transmission, Docket No. 09-IEP-1D Comments on May 4, 2009 Joint IEPR and Siting Committee Workshop

The Metropolitan Water District of Southern California (Metropolitan) is pleased to provide the following comments in response to the May 4, 2009 Joint Integrated Energy Policy Report (IEPR) and Siting Committee Workshop.

At the Joint Workshop, participants described the development steps for the 2009 Strategic Transmission Investment Plan (2009 STIP) and discussed relevant transmission information, including recent transmission studies and draft plans done as part of the Renewable Energy Transmission Initiative (RETI). Metropolitan understands that the California Energy Commission (Energy Commission) will review RETI's conceptual transmission plans for possible inclusion in the 2009 STIP.

Within the past few weeks, Metropolitan was informed by RETI participants that certain members of the planning subgroup were considering transmission projects in the RETI process that would directly affect Metropolitan's Colorado River Aqueduct (CRA) Transmission System (CRATS). As explained below, Metropolitan wishes to highlight its concern regarding inclusion of potential transmission projects directly affecting CRATS in the RETI process or in STIP. Metropolitan's concerns are based on the function and unique nature of the CRATS, which was built solely for water conveyance purposes.

## Metropolitan's Electrical Transmission System

Metropolitan was created in 1928 for the purpose of transporting water from the Colorado River to the growing population in Southern California. In the 1930's it constructed the CRA, starting near the newly completed Parker Dam, through remote areas of the Mojave Desert in Riverside and San Bernardino counties and terminating near the city of Riverside. Five large pumping plants, whose total electrical demand would be nearly 300 MW, were built along the CRA. Due to the remoteness of the area, there was no existing electrical infrastructure to transport and supply the large amount of power required by these pumps. Therefore, Metropolitan had to construct a 230 kV transmission system to bring power from the Hoover and Parker Dam power

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plants to its five pumping plants. The pumping plants consume approximately 2,400 gigawatthours of energy annually when the CRA is operating at full capacity.

The sole use and purpose of the CRATS was to deliver power to its remote pumping loads. The CRA pumps are basically tied directly to the CRATS, using a main and transfer bus configuration. There is no redundant transmission path to these loads, and the pumping plants must operate in a synchronized fashion as there is no water storage facility along the CRA. The CRATS was designed essentially as a pumping load tie, not as part of a larger grid system whose purpose is to move large amounts of power from distant generation sources to the load of population centers.

The CRATS currently lies within the California Independent System Operator (CAISO) Balancing Authority Area as a result of a 30-year, complex integration contract with Southern California Edison that expires in 2017, under which SCE had performed control area responsibilities for the CRATS. When SCE joined the CAISO, its former control area responsibilities were transferred to the CAISO. The CRATS is not part of the ISO Controlled Grid since Metropolitan, its owner, is not a CAISO Participating Transmission Owner.

The water that Metropolitan transports through the CRA is critical to the population and economy of Southern California. Metropolitan supplies one half of the total water used by the businesses, industries and 19 million residents of this region, and over 50 percent of that water comes from the CRA. To satisfy such water demands, the CRA must be operated on a near continuous basis. In some years we have operated the CRA at maximum flow 24/7 for the entire year. In other years, the CRA has been shut down briefly to perform scheduled maintenance during the summer, when the water supply requirements were met by other resources. Such shutdowns require extensive advance coordination and planning with Metropolitan's 26 member agencies to ensure they can continue to provide water delivery to their wholesale and retail customers. Essentially, the CRA and its supporting transmission system operate on a schedule dictated by water supply requirements, not electrical considerations.

As the electric grid has developed around the CRA, Metropolitan has had to increase the complexity and capability of the protection devices on the CRATS and at the pumping plants. With the potential for higher capacity and voltage transmission lines interconnected to the CRATS or incorporated into it as contemplated by some of the potential RETI projects, Metropolitan is very concerned about its ability to protect the pumping plants from disruption and the potential incompatibilities of the power and water conveyance missions. Metropolitan's core mission is the supply of water to Southern California, and we believe potential transmission network changes to our system could impair that mission.

As explained above, the CRATS is not used as a typical transmission line. The CRA's physical dimensions limit the amount of water that can be moved and hence the amount of power needed to move the water. The maximum load of the CRA is approximately 300 MW and that limit will not increase. There is no load growth potential on the CRA, so increasing the capability of the

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CRATS is not a benefit to Metropolitan. Also, Metropolitan has just completed a condition assessment of the CRATS. The results indicate a 70 year-old transmission system with little degradation and the potential to last another 70 years. Operating the CRATS at levels below its maximum capabilities and in a benign environment has resulted in a fully amortized system with little or no need to replace or upgrade equipment.

The goal to increase the amount of renewable energy in the state of California is an important one and one Metropolitan supports. Since it commenced operation over 70 years ago, Metropolitan has developed and utilized renewable energy at its facilities. Over 60 percent of the energy used transporting Colorado River water to Southern California through the CRA is renewable energy produced at the Hoover and Parker Dam power plants on the Colorado River. In fact, Metropolitan paid half the cost of the power plant at Parker Dam and will receive 50 percent of its generation in perpetuity. Metropolitan also constructed and operates over 16 small conduit hydroelectric generators with a total capacity of over 125 MW on its water distribution pipelines. Finally, Metropolitan has just completed a 1 MW solar power project at one of its water treatment plants and is investigating an additional 10 MW of solar power at other sites. Yet despite Metropolitan's energy efforts, Metropolitan's core mission remains providing clean, safe and reliable water to Southern California. Accordingly, any proposed changes to Metropolitan's CRATS must recognize the primacy of Metropolitan's mission with all other uses of the CRATS placed in a clear secondary position.

## **Existing Transmission Planning Processes**

In specific response to the Workshop call for comments, and as previously noted, Metropolitan only recently learned of the inclusion of the CRATS in RETI and the extent of some of the proposed changes, which contemplate interconnection to the CRATS or replacement of portions of the CRATS with higher capacity, higher voltage conductors. Metropolitan did not realize this effort would include transmission facilities owned by non-Participating Transmission Owners in the CAISO. To avoid future surprises and to ensure that all relevant issues are addressed in future transmission planning efforts, Metropolitan strongly recommends that the Energy Commission ensure each potentially affected transmission owner receive prompt and direct notice of the consideration of a proposed transmission project in a transmission plan at the earliest possible date. This way affected owners, like Metropolitan, may alert planners on a timely basis to unique issues that may not be readily apparent. It will make the transmission planning process more efficient, and allow the planners to be better informed of unavoidable constraints from the start. Such timely notice to potentially affected parties is particularly important in light of the proliferation of transmission proposals and the numerous transmission planning and study efforts underway throughout the Southwest.

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## **Limitations on Existing Transmission Corridors**

Finally, RETI and STIP should consider that certain existing transmission corridors, like CRATS, have limited purposes, and those limitations need to be considered in designating transmission corridors to avoid unintended and harmful impact to such purposes. We are confident that any recommended actions regarding transmission planning efforts or initiatives would recognize the primary purpose of ensuring Metropolitan's ability to reliably deliver water to 19 million Southern California residents.

We appreciate the opportunity to provide input to your planning process and we look forward to receiving future related documentation on this study. If you have any questions, please contact me at (213) 217-7381 or <a href="mailto:jlambeck@mwdh2o.com">jlambeck@mwdh2o.com</a> or Ann Finley at (213) 217-7136 or afinley@mwdh2o.com

Very truly yours,

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