10-13

April 23, 1999

To: Board of Directors (Engineering and Operations Committee—Information)

From: General Manager _____

Submitted by: Chief of Planning and Resources _____

Subject: Electric Utility Restructuring Update

RECOMMENDATION

For information only.

EXECUTIVE SUMMARY

On March 31, 1998, the California electric utility industry began operating in a totally restructured environment which provides for a more open and competitive energy market, as well as greater price instability. Metropolitan has been insulated from volatile prices in the California Independent System Operator (ISO) and California Power Exchange (PX) markets by virtue of its existing contracts. As the electric utility industry continues to evolve, Metropolitan remains vitally concerned that existing contracts continue to be honored, and that cost-shifting arising from restructuring be minimized. The cause of the concern is the continual changes to the policies and procedures governing the utility industry. Since the filing of the original tariff schedules on August 15, 1997, over 25 amendments have been proposed by the ISO and PX. This does not include the numerous filings and reports for clarifications and operational matters. Currently, the most significant item moving forward is revision to the ISO transmission service charge methodology. This dynamic time of policy development and operational change requires a continuing vigilance by staff in order to minimize costs to Metropolitan's power operations.

DETAILED REPORT

California began its restructured electric industry operations on March 31, 1998, when the California Independent System Operator (ISO) and the California Power Exchange (PX) commenced startup. As the Board may recall from prior briefings, both the ISO and the PX were established as non-profit benefit corporations under California's landmark electric industry restructuring legislation, AB 1890. The primary and ultimate purpose of the ISO is to provide for independent operation and administration of California's transmission grid, and to assure open access to California's newly competitive generation market. The ISO currently has operational control of the transmission lines owned by California's investor-owned electric utilities, Southern California Edison (Edison), Pacific Gas and Electric Company (PG&E), and San Diego Gas &

Electric. The PX was established to provide a competitive market for the purchase and sale of energy.

California was the first state to embark on electric industry restructuring, and is the furthest along in its implementation. Approximately 20 states have now implemented some form of electric industry restructuring, and various federal bills have been introduced which would either mandate or facilitate state restructuring efforts. Related federal legislation is also pending which would repeal the Public Utility Holding Company Act and portions of the Public Utility Regulatory Policies Act, and would loosen current restrictions on private use of publicly financed electric facilities.

California's restructuring efforts have been the most ambitious of those undertaken to date. The PX provides an energy marketplace for both an hourly Day-Ahead Market and an hourly Day-Of Market. The ISO offers hourly Day-Ahead and Hour-Ahead markets for transmission service, and for four Ancillary Services: Regulation, Spinning Reserve, Non-Spinning Reserve, and Replacement Reserve. Additionally, the ISO offers a Real-Time, or contemporaneous, market for energy. All of these markets required the development of costly customized software, resulting in ISO and PX start-up costs in excess of $400 million.

The complexity of California's restructured electric industry markets has given rise to a host of opportunities for market abuse in the form of gaming, cost-shifting, and exercise of market power. As the ISO and PX have gained experience in the operation of their markets and had additional time for development of the software necessary for full implementation of the original market redesign, they have repeatedly amended their tariffs. To date, the ISO has submitted 15 tariff amendments to the Federal Energy Regulatory Commission (FERC), while the PX is not far behind with ten tariff amendments. Both organizations are preparing additional amendments. Metropolitan has intervened in most of these tariff amendments, as well as other ISO and PX filings at FERC. In fact, Metropolitan has submitted approximately 45 filings to FERC during the current fiscal year on electric industry restructuring matters.

From the outset, Metropolitan's most significant concerns arising from restructuring have been, and remain, the protection of existing contracts and minimization of cost-shifting. (Attached is a summary of Metropolitan's power operations). Metropolitan's existing contracts have insulated it from the volatility of prices in the ISO and PX markets, and from numerous miscellaneous charges imposed by the ISO for transmission service. These same contracts have also protected Metropolitan from cost-shifting.

Although Metropolitan has enjoyed considerable success in its efforts at FERC to require the ISO to honor existing contracts, other market participants persist in their efforts to persuade both institutions to dilute the benefits of such contracts based upon market efficiency arguments. As the ISO and PX markets continue to evolve, existing contracts are under increasing pressure as the circumstances under which they were negotiated and are honored change significantly. Metropolitan must continue to devote substantial efforts to the protection of our existing contracts in the restructured electric utility environment.

Numerous issues raised by Metropolitan and other Market Participants have been resolved in a series of FERC-sanctioned settlement conferences with the ISO, while other important issues remain. Among the most important issues to be resolved within the next year is the design of the ISO's successor transmission access charge, which will modify how the ISO will charge for the

use of the transmission system. This will directly affect the California Department of Water Resources (CDWR) but not Metropolitan because of our existing contracts. Pursuant to AB 1890 and certain agreements reached by CDWR and the parties with whom it has transmission contracts, CDWR will receive transmission service under the successor access charge beginning in 2000. Approximately 20 market participants, including Metropolitan and CDWR, have provided the ISO with initial proposals or suggested development principles for the successor access charge. Due to the size of its significant load, the ultimate design of the access charge could have a substantial effect on CDWR's pumping costs. Metropolitan and CDWR intend to fully and extensively participate in the access charge development and negotiations.

Additional remaining issues involve the ISO's redesign of its Ancillary Service markets, which have been found vulnerable to market power abuses, resulting in hourly Ancillary Service costs as high as $10,000/ megawatt (MW). Although the ISO has instituted an interim rate cap of $250/MW to limit such abuses, new owners of generating facilities recently divested by the California investor-owned utilities continue to apply considerable pressure to lift, or at least increase, such rate caps.

In another new and controversial development, PG&E appears likely to submit a proposal to the California Public Utilities Commission (CPUC) for divestiture of its numerous hydroelectric generating units to US Generating Company, a wholly owned subsidiary which is not subject to regulation by the CPUC. Metropolitan is monitoring this development for potential impacts on CALFED and opportunities for CDWR.

All of these issues, and others sure to arise, will require Metropolitan's continued involvement in the evolution of the California electric utility industry. The requirement that existing contracts be honored and that cost-shifting be minimized were hard fought concessions and must be vigorously protected.

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Attachment 10-13A

Attachment 10-13A

MWD
METROPOLITAN WATER DISTRICT
OF SOUTHERN CALIFORNIA

February 1999

Summary of Metropolitan's Power Operation

CRA

One of the two major sources of water for The Metropolitan Water District of Southern California (Metropolitan) is the Colorado River. To annually pump 1.2 million acre-feet of water 242 miles through the Colorado River Aqueduct (CRA) into the Los Angeles basin requires approximately 2,400 GWh of energy for the CRA's five pumping plants. To obtain this energy, Metropolitan has long-term firm contractual rights to hydroelectric power resources on the Colorado River, including more than 20 percent of the firm energy and contingent capacity of the Hoover power plant and 50 percent of the energy and capacity of the Parker power plant. Metropolitan-purchases off-peak economy energy from various utilities to satisfy the balance of its CRA energy requirements. In the fiscal year ending June 30, 1997, economy energy purchases comprised approximately 26 percent of the CRA energy requirements.

Metropolitan owns and operates 305 miles of 230 kV transmission lines from the Mead Substation in southern Nevada, which heads south then branches east to Parker, California, and west along Metropolitan's CRA. Metropolitan's transmission line was energized on November 1,1938, and its capital cost has been paid in full by Metropolitan's member agencies. The transmission system is used to deliver power from Hoover and Parker to the CRA pumps. Additionally, Mead is the primary interconnection point for Metropolitan's economy energy purchases. Metropolitan's transmission system is interconnected with several utilities at multiple interconnection points.

Metropolitan's CRA lies within Edison's control area. Resources for the load are contractually integrated with Edison's system pursuant to a Service and Interchange Agreement (Agreement), which terminates in 2017. This Agreement provides mutual benefits to Edison and Metropolitan. It integrates the two systems and allows Edison to dispatch Metropolitan's resources provided the CRA load is reliably served. A significant benefit to Edison's customers is derived from its ability to schedule the Hoover and Parker power plant resources to meet the combined loads of the Edison and Metropolitan systems. Edison also has the ability to use Metropolitan's transmission system and interrupt load at Metropolitan's Gene and Intake pumping plants. Hoover and Parker resources provide spinning reserves and ramping capability, as well as peaking capacity and energy to Edison, thereby displacing higher cost alternative resources. Edison, in turn, provides Metropolitan with exchange energy, replacement capacity, supplemental power, dynamic control and use of Edison's transmission system.

SWP

The second major water supply for Metropolitan is the State Water Project (SWP), which captures and stores runoff in Northern California and delivers the water to areas of need in Northern, Central, and Southern California. Approximately 20 million of California's 32 million residents receive at least part of their water from the SWP, and SWP water is used to irrigate approximately 600,000 acres of farmland. Metropolitan is the largest of the 29 SWP contractors that purchase water through the SWP, which is managed by the California Department of Water Resources (DWR).

The electric power required to pump SWP water is primarily off-peak energy with a substantial portion supplied by Edison under a 1979 Power Contract and 1981 Capacity Exchange Agreement. On-peak energy is provided by SWP power generation facilities

located throughout the state. DWR has long-term transmission contracts with PG&E and Edison for delivery of power from SWP generation facilities to SWP pumping plants. Metropolitan pays approximately 60-80 percent of the total power costs incurred by DWR for the SWP depending upon delivery, since it is the largest and one of the last contractors on the aqueduct, and its water is pumped the furthest. Approximately 3,000 kWh (net) are required to pump one acre-foot[1] of water to the Los Angeles basin from the Sacramento-San Joaquin Delta. Metropolitan's SWP deliveries require approximately 2,700 GWh of energy annually.

Transmission

Historically, Metropolitan and DWR have each independently planned to meet the long-term power resource requirements of the CRA and the SWP respectively. While Metropolitan has independently constructed transmission facilities for the CRA, DWR has entered into long-term agreements with PG&E and Edison to provide transmission services for the SWP. PG&E, Edison and their retail customers accrue substantial benefits from the power resources, which are made available through agreements with DWR.

Distribution Hydroelectric Generation

In addition to the energy requirements of the CRA and the SWP, Metropolitan sells energy from 15 small & conduit hydroelectric units in its Southern California water distribution system. The units have a combined peak capacity of approximately 101 MW, and the energy from the units is sold to DWR, Edison and PG&E under long-term contracts. A total of approximately 330 GWh per year is sold from these power plants.

Treatment Plant Electric Loads

Metropolitan also owns and operates five water filtration plants, which currently require approximately 30 GWh of energy annually. This energy is provided by the local serving utility under retail tariffs.

Summary

In summary, Metropolitan occupies a unique position in the California energy market Metropolitan's power interests are combined in several distinct roles:

- Metropolitan owns transmission facilities and has secured long-term contractual entitlements to the Hoover power plant and perpetual contractual rights to the Parker power plant, thereby allowing the CRA to be a self-sufficient system.
- Metropolitan is a purchaser of energy at wholesale.
- Metropolitan pays approximately 70 percent of the total SWP power and transmission costs arising from DWR's long-term agreements
- Metropolitan owns generation resources (recovery hydroelectric units along Metropolitan's water distribution system), which are sold at wholesale.
- Metropolitan uses electric power at its treatment plants from the local serving utility under retail tariffs.

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[1] Acre-foot equals 325,851 gallons.