



WEST BASIN MUNICIPAL WATER DISTRICT
17140 S. Avalon Blvd., Suite 210
Carson, CA 90746

AGENDA NO. 33

OCTOBER 15, 2009 – Water Resources
Little (Chair), Gray
OCTOBER 26, 2009 – Board Meeting
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INFORMATION CALENDAR

EMERGENCY BACK-UP POWER

SUMMARY:

The Edward C. Little Water Recycling Facility (ECLWRF) and Juanita Millender-McDonald Carson Regional Water Recycling Plant (Carson Plant) have both experienced power outages that impact recycled water supply reliability. The Carson Plant has experienced power disruptions in the form of voltage dips that "trip" the variable frequency drives causing them to go offline. At ECLWRF there have been two significant power outages that have lasted up to 24 hours in the past two years. As a result, staff is investigating back-up power supply options for critical processes at each plant. Obtaining back-up power supplies for critical loads would greatly improve each facility's reliability.

Edward C. Little Water Recycling Facility

At ECLWRF, back-up power is needed for the Title 22 process and solids handling process. There are three options that staff is considering for providing emergency power including:

- A second source of supply from Southern California Edison (SCE);
- Standby power from a generator on site; and
- A quick connection for a generator that would be ordered in an emergency.

There is a second source of power from SCE that powers the Chevron Boiler Feed facilities at the ECLWRF. SCE has indicated that this second circuit does not have enough capacity to power the Title 22 process and solids handling process. They estimate it would cost \$5 - \$7 million to run a new circuit. Given the frequency of significant disruptions at ECLWRF, this option was determined not to be cost-effective.

The standby generator power required for back-up support to the Title 22 process and solids handling process at ECLWRF is approximately two 1,000 KW generators. This is estimated to cost about \$1.8 million. Given the frequency of significant disruptions at ECLWRF, this option was determined not to be cost-effective.

The cost of installing a quick connection at ECLWRF is estimated to be \$50,000. The benefit of this option is that it provides reliability by saving time in connecting an emergency generator. Currently connecting a generator to the system requires re-wiring that takes four to eight hours to complete. This quick connection option will essentially result in installing a "plug" to which a generator can connect. The cost to rent two generators for several days is about \$40,000.

Juanita Millender-McDonald Carson Regional Water Recycling Plant

At the Carson Plant, back-up power is needed to operate two reverse osmosis product pumps and one nitrification product pump. There are three options that staff is considering for providing emergency power including:

- A second source of supply from SCE;
- Standby power from a generator on site; and
- A quick connection for a generator that would be ordered in an emergency.

There is a second source of power from SCE nearby; however, it comes from the same sub-station and same buss as the current power source. This would not provide a reliable second source of power, because if the sub-station or buss went down, we would still be without power. The cost to run a second circuit to the plant is estimated to be \$5 - \$7 million. Given the frequency and type of outages, this option was determined not to be cost-effective.

The standby generators required for the Carson Plant are estimated to cost \$600,000 for two 500 KW generators. Given the frequency of significant disruptions and the type of disruptions at the Carson Plant, this option was determined not to be cost-effective.

The cost of installing a quick connection at the Carson Plant is estimated to be \$50,000. The benefit of this option is that it provides reliability by saving time in connecting an emergency generator. Currently connecting a generator to the system requires re-wiring that takes four to eight hours to complete. This quick connection option will essentially result in installing a "plug" to which a generator can connect. The cost to rent a generator for several days is about \$20,000.

None of the options evaluated for the Carson Plant would fix the power dips that have been tripping the variable frequency drives. The variable frequency drives have been adjusted not to be as sensitive to the power dips and that seems to have reduced the number of trips. Staff will continue to monitor and keep in communications with bp about the power issues.

Staff believes that the most cost-effective option for emergency back-up power at both ECLWRF and the Carson Plant is to have quick connections installed for use of emergency generators. Staff plans on issuing a "Request for Bids" to provide and install quick connections at both facilities.

STRATEGIC BUSINESS PLAN IMPLEMENTATION:

Goal 7, Infrastructure – Manage infrastructure to ensure reliability, manage risk, and maximize the useful life of facilities.

COMMITMENT STATEMENT:

Sound Financial and Resource Management – West Basin is committed to efficient business operations, financial planning, and asset management.

FISCAL IMPACTS:

Funds are included in the Fiscal Year 2009-10 Facility Replacement Fund.

ENVIRONMENTAL COMPLIANCE:

Not applicable.

COMMITTEE STATUS:

This item was reviewed by the Water Resources Committee on October 15, 2009 and agendaized to the October 26, 2009 Board meeting as information to receive and file.

RECOMMENDED MOTION:

This item is for information only.

LIST OF EXHIBITS:

None.