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General Manager

March 26, 2015

The Honorable City Council
c/o Office of the City Clerk
Room 395, City Hall
Mail Stop 160

Attention: Councilmember Felipe Fuentes
Chair, Energy and Environment Committee

Honorable Members:

Subject: Council File No. 15-0229 for In-Pipe Hydropower Systems

This letter is in response to the February 24, 2015, motion made by Councilmembers Felipe Fuentes and Mike Bonin, requesting the Los Angeles Department of Water and Power (LADWP) investigate possible applications and opportunities for in-pipe hydropower systems in Los Angeles.

LADWP is dedicated to providing clean, reliable water and power to its customers in a cost-effective and safe manner. Technologies such as in-conduit hydroelectric generation can potentially help LADWP meet these goals by producing clean, hydroelectric generation from the flow and pressure of water within the Los Angeles water distribution system.

Two popular types of in-conduit hydroelectric generation have been evaluated by LADWP staff since 2010. The first is "in-pipe turbines" and the other is "regulator station bypasses." In-pipe turbines are targeted at pipelines ranging in size from 24 inches to 72 inches in diameter. The amount of power generated is relatively small (30-400 kilowatt). Regulator station bypasses are specialty turbines that achieve the dual purposes of modulating water pressure and generating hydroelectric power. The amount of power generated is typically 1 to 5 megawatt (or 1,000 to 5,000 kilowatt) per application.

In response to this motion, LADWP has contacted the Portland Water Bureau and the Riverside Public Utility and has reevaluated both of these technologies. From this reevaluation, LADWP has decided to proceed in implementing only regulator station bypasses for the following reasons:

Los Angeles Aqueduct Centennial Celebrating 100 Years of Water 1913-2013

- Risks of service outage and interruption are minimized with a maintainable system redundancy
- Power generation costs that are on par with targets set in LADWP's Integrated Resource Plan (IRP)
- Sufficient size and scale that help LADWP meet its Renewable Portfolio Standard (RPS) goals

In its current state of development, in-pipe turbines are unable to effectively and economically help LADWP meet the renewable energy generation targets set in the IRP while preserving water distribution reliability with a maintainable system redundancy.

LADWP currently has two regulator station bypass projects in its Capital Improvement Program (CIP), one of which is the Headworks Reservoir Project that is expected to generate 4 megawatt of hydroelectric power. It is scheduled for completion by 2019. The second project being planned is at Coldwater Canyon, which will generate 1.5 megawatt. Beyond these two projects, LADWP Water and Power System Planning staff are evaluating other potential sites for installing regulator station bypasses.

LADWP is also constantly monitoring other technologies through ongoing discussions with staff at other utilities, participating in technology user groups and forums, providing feedback to product developers, and participating in industry research projects.

If you have any questions or if further information is required, please contact me at (213) 367-1338, or Ms. Winifred J. Yancy, Director of Intergovernmental Affairs and Community Relations, at (213) 367-0025.

Sincerely,



Marcie L. Edwards
General Manager

BBW:cgr
Enclosures

c/enc: Councilmember Bob Blumenfield, Vice-Chair, Energy and Environment Committee
Councilmember Jose Huizar, Member
Councilmember Paul Koretz, Member
Councilmember Tom LaBonge, Member
Mr. Adam R. Lid, Legislative Assistant

Ms. Winifred J. Yancy