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PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

DIVISION OF WATER AND AUDITS
Water and Sewer Advisory Branch

RESOLUTION NO. W-4854
December 2, 2010

R E S O L U T I O N

(RES. W-4854). THIS RESOLUTION AUTHORIZES SAN JOSE WATER COMPANY, CALIFORNIA WATER SERVICE COMPANY, CALIFORNIA AMERICAN WATER COMPANY, AND GOLDEN STATE WATER COMPANY TO ESTABLISH NEW AND SEPARATE MEMORANDUM ACCOUNTS TO TRACK THE COSTS ASSOCIATED WITH THE RESEARCH, DEVELOPMENT & DEMONSTRATION OF SIX PRESSURE-REDUCING VALVE MODERNIZATION PROJECTS.

SUMMARY

Four Class-A regulated Water Utilities (Water Utilities) filed Tier-3 Advice Letters (ALs) seeking authorization from the California Public Utilities Commission (Commission) to establish memorandum accounts to track the costs associated with six research, development and demonstration (RD&D) Pressure-Reducing Valve (PRV) modernization projects (AL 418 filed on July 16, 2010 by San Jose Water Company; AL 1409-W filed on July 15, 2010 by Golden State Water Company; AL-853 filed on July 14, 2010 by California-American Water Company; and AL-1997 filed on July 16, 2010 by California Water Service Company). The Water Utilities submitted the ALs pursuant to General Order (GO) No. 96-B and with reference to Commission Decision (D.) 08-11-057. The projects consist of replacing existing 100% inefficient mechanical PRVs with modern electrical regenerative Flow Control Valves (FCVs) with an estimated efficiency of 50%.

The Water Utilities seek the following:

(1) Authorization from the Commission to commence in 2010 the implementation of an RD&D program to design and construct prototype, modern technology, high efficiency PRVs in order to recover wasted electrical energy, consistent with Operational Energy Efficiency Program (OEEP) objectives, and in order to improve the pressure and flow of water in their distribution systems to a much higher level of precision compared with present levels;

(2) Expedited Commission approval so that the RD&D kW demand reduction and kWh electrical energy recovery projects can be commenced in 2010 and thereby benefit from federal tax credits available under the American Recovery and Reinvestment Act of 2009 (ARRA); and

(3) Authorization from the Commission to track construction and associated costs (the return of and return on such assets) to the Operational Energy Efficiency Memorandum Accounts previously authorized by the Commission in D.10-04-030 or in other memorandum accounts.

This resolution authorizes Water Utilities to commence implementation of an RD&D program to test use of regenerative FCVs; expedites Commission consideration and approval so projects and ratepayers benefit from federal tax credits; approves the establishment of a separate memorandum account for each water utility to track the costs associated with the proposed RD&D projects; and directs Water Utilities, and encourages electrical utilities, to work with Division of Water and Audits (DWA) to finalize project details, select an engineering and design firm, and develop appropriate measurement, verification and evaluation protocols.

BACKGROUND AND PROJECT DESCRIPTION

Reducing energy consumption and saving energy that would otherwise be wasted costs far less than producing and delivering it from conventional power sources. In 2004 dollars, the estimated cost of California's energy efficiency program averages only 1.2 cents/kWh. Quoting D.08-11-057, the Water Utilities reference in the ALs the Commission's mandate to them to

> *"identify opportunities for efficiency improvements that each water utility can pursue on its own, and those which may require a new or augmented energy utility program offering"*,

and request the Commission's authorization to commence the six RD&D, PRV modernization projects discussed below.

In the water distribution system, electrical energy creates high water pressure to increase the flow of water from the supply side of the water pipe to the receiving side. When the water flow reaches the receiving side of the pipe, Water Utilities have to reduce the water pressure for delivery to their individual customers. At present, the pressure reducers used by the Water Utilities are PRVs which function similar to mechanical breaks and waste valuable energy.

The projects that the Water Utilities propose in the ALs will recover the hydraulic energy wasted by the existing PRVs. The modern electrical regenerative FCVs that will be installed perform the same function as the existing PRVs, except they recover the electrical energy embedded in the water as hydraulic energy rather than wasting it. This recovered energy is termed "Negative Watts" and the process is termed "Micro-Power". An advantage of this recovered power production is at the local power distribution level, such that it avoids transmission and distribution costs.

The RD&D, PRV modernization projects proposed by San Jose Water Company (SJWC) provide an illustration of how the energy recovery works.

SJWC purchases treated water from the Santa Clara Valley Water District (SCVWD), on a continuous daily basis, and takes delivery of the water at the Hostetter Turnout and other locations. SCVWD delivers this wholesale water to SJWC at high pressure, enabling SCVWD to supply other wholesale customers located many miles further down SCVWD'S pipelines. To prevent over-pressurizing distribution water mains, SJWC must depressurize the water before the

water enters SJWC'S distribution system. SJWC currently uses mechanical PRVs to perform this depressurization.
A mechanical PRV is a large valve that dissipates excess water-embedded energy across multiple orifices, creating noise and heat. Although PRVs prevent over-pressurizing distribution water mains, they are inefficient because the excess pressure embedded in the water is not used for any productive purpose. An electrical regenerative FCV uses the excess pressure embedded in the water to spin a turbine, coupled to a generator, to recover the energy. Therefore, replacing a mechanical PRV with an electrical regenerative FCV presents an ideal opportunity to recover wasted energy as electric power. SJWC proposes replacing the existing PRVs at the Hostetter Turnout with electric regenerative FCVs to create two hydro turbine generator (HTG) projects that it estimates will recover enough energy on an annual basis to satisfy the daily electricity demands of more than 140 homes. Specifically, it estimates that Hostetter Unit #1 will use a 113 kW HTG to generate 994,886 kWh annually, and that Hostetter Unit#2 will use a 37 kW HTG to generate 327,086 kWh annually. The estimated costs for these RD&D projects, assuming timely construction allows SJWC to benefit from 30% ARRA Section 1603 grants, are $365,838 for Hostetter Unit #1 and $413,298 for Hostetter Unit #2.

The other three Water Utilities propose PRV modernization projects using the same technology:

- California American Water Company (Ca-Am Water) proposes a 13.78 kW HTG project at the Beyer Blvd PRV station in the San Diego District that it estimates will generate 121,000 kWh annually at an estimated cost of $598,319 (assuming that ARRA funding is not available).
- Golden State Water Company (GSWC) proposes a 48 kW HTG project at the Metropolitan Water District (MWD) in the City of Norwalk that it estimates will generate 310,009 kWh annually at an estimated cost of $477,000 and a 120 kW HTG project at the MWD in the City of Cypress that it estimates will generate 200,000 kWh annually at an estimated cost of $867,000, (assuming that ARRA funding is not available for either project).
- California Water Service Company (Cal-Water) proposes a 30 kW HTG project at the Bear Gulch District Operations Center in the town of Atherton that it estimates will generate 262,800 kWh annually at an estimated cost of $1,380,300.

The proposed electrical regenerative FCV projects are thus consistent with the Commission's mandate to the Water Utilities to identify opportunities for efficiency improvements, as referenced in Decision (D.) 08-11-057. Not only will a significant percentage of energy be recoverable from these electrical regenerative FCV projects, thereby helping the State of California to reduce energy waste, these RD&D projects will further the wasted energy recovery knowledge of both water and energy utilities. The proposed projects are therefore similar in nature to the OEEP projects designed to demonstrate potential improvements in Wire – to – Water operational efficiency when the appropriate combination of induction motors, pumps, and variable speed drives are operated at optimal efficiency levels using a computer program, and efficiency data collected and stored in the Supervisory Control and Data Acquisition (SCADA) systems, approved by the Commission in D.08-11-057. As part of the RD&D program proposed in the ALs, variable speed drives and computer hardware and software will enable the electrical

regenerative FCVs to provide only the required amount of water flow to the system and thereby to operate at their optimal point of operational efficiency. Further, the hydraulic power recovery turbines and associated control valves will be connected to the Water Utilities' SCADA system, which will monitor the performance of the systems and alert the Water Utilities' staff of any abnormal operation of the system. Therefore, this RD&D program will show whether the electrical regenerative FCV's have the potential to cost effectively reduce energy waste.

The electrical regenerative FCVs to be installed in the proposed projects are specifically designed for one-to-one replacement of PRVs. This technology was introduced to the market earlier this year and although promising, remains unproven. Therefore the proposed projects are appropriately classified as RD&D, enabling evaluation of the technology on a small scale before resources are committed for large scale installations. As such, determination as to funding responsibility for the FCV projects are appropriately at the discretion of the Commission.

NOTICE

In accordance with Section 4.3 of GO No. 96-B, the ALs were sent to each respective water utility's advice letter service list and the Commission's Energy Efficiency proceeding service list.

PROTESTS AND RESPONSES

The Division of Ratepayers Advocates (DRA) filed protests on August 4, 2010 and August 25, 2010; three energy utilities, Southern California Edison Company (SCE), Pacific Gas & Electric Company (PG&E) and San Diego Gas & Electric Company (SDG&E), filed a joint protest on August 17, 2010 (Energy Utilities); and The Utility Reform Network (TURN) filed a protest on August 24, 2010.

The Water Utilities filed a single reply to all of the foregoing on September 20, 2010 (the Joint Reply). DRA filed a reply to the Joint Reply on October 5, 2010, and the Energy Utilities filed a joint Sur-Reply on October 5, 2010.

DRA's Protests:

DRA protests the proposed electric regenerative FCV projects on the following grounds:

- DRA contends that the proposed electrical regenerative FCV projects are renewable energy projects and therefore do not meet the requirements for OEEP projects. DRA thus contends that tracking the electrical regenerative FCV project costs through memorandum accounts established under the OEEP is inappropriate.
- DRA contends that the electrical regenerative FCV projects would improperly expand the OEEP program and are thus controversial and raise important policy questions, and therefore contends that an advice letter is not the procedurally proper mechanism by which the Water Utilities may seek authorization of the projects.

- DRA contends that SJWC is merely revisiting a hydro turbine project that it proposed during its 2009 General Rate Case (GRC), which the Commission rejected in D.09-11-032, and that SJWC is therefore attempting to use the advice letter process to circumvent various requirements and instructions related to the GRC hydro turbine project that the Commission included in D.09-11-032.

The Energy Utilities Joint Protest:

The energy utilities protest the proposed electrical regenerative FCV projects on the following grounds:

- Like DRA, the energy utilities contend that the electrical regenerative FCV projects are renewable energy projects and therefore do not meet the requirements of OEEP projects. The energy utilities thus contend that tracking the electrical regenerative FCV project costs through memorandum accounts established under the OEEP is inappropriate. They further contend that using energy efficiency funding for the electrical regenerative FCV project costs would improperly permit the Water Utilities to use energy efficiency funding to support non-energy efficiency projects for the Water Utilities' own benefits.
- Like DRA, the energy utilities contend that the electrical regenerative FCV projects would improperly expand the OEEP and are thus controversial and raise important policy questions, and therefore contend that an advice letter is not procedurally proper mechanism by which the Water Utilities may seek authorization of the projects.
- The energy utilities contend that the ALs contain material errors or omissions because not all of the ALs correctly identify the applicable tariff for connection of electrical regenerative FCV projects to the electrical grid.
- The energy utilities contend that the relief requested in AL 853 is pending before the Commission in a formal proceeding because AL 853 incorrectly states that an energy tariff for Ca-Am's proposed electrical regenerative FCV project will need to be negotiated. The energy utilities explain that an applicable "feed-in" tariff already exists and that the Commission is currently considering the expansion of the tariffs.
- The energy utilities contend that they did not receive proper notice of the ALs.

The Water Utilities' Joint Response to DRA's Protests and Energy Utilities' Joint Protest:

- The Water Utilities respond to DRA's and energy utilities' contention that the electrical regenerative FCV projects are energy generation projects and not OEEP projects by stating explicitly that they do not argue that the electrical regenerative FCV projects qualify as OEEP projects. To the contrary, they openly and repeatedly state that these projects are energy generation projects. The Water Utilities explain that they have no preference as to whether the electrical regenerative FCV project costs are tracked in the OEEP memorandum accounts or any other memorandum accounts. Moreover, they do not propose that the electrical regenerative FCV project costs be recovered from funds associated with the energy utilities' energy efficiency budgets. Rather, the Water Utilities' customers would bear the electrical regenerative FCV project costs, except to

the extent that costs are offset through sales of renewable energy generated by the projects.

- The Water Utilities respond to DRA's and energy utilities' contention that advice letters are procedurally improper mechanisms for seeking Commission approval of the electrical regenerative FCV projects by explaining that the projects should not be controversial because they do not require any expansion of the OEEP. The Water Utilities also point out that advice letters are used for seeking Commission consideration of a range of matters, including complex issues and projects with far greater associated costs. The Water Utilities also point to General Rule 1.3 which provides that "the General Rules and Industry Rules should be liberally construed to secure just, speedy and inexpensive handling of informal matters…." The Water Utilities propose that the Commission should be guided by General Rule 1.3 and construe its advice letter rules to permit consideration of the proposed projects through the advice letter process because (i) time is of the essence due to ARRA funding deadlines, and (ii) the projects have the potential to benefit the public and further Commission's policy objectives.
- The Water Utilities responded to DRA's contentions regarding the SJWC electrical regenerative FCV project by enumerating the significant differences between the hydro turbine project that had been proposed in SJWC's 2009 GRC application and the electrical regenerative FCV project proposed in AL 418, illustrating that they are entirely distinct.
- The Water Utilities responded to the energy utilities' contention that the ALs contain material errors or omissions by explaining that any mistakes contained within the ALs are easily remediated because there are applicable energy tariffs for each electrical regenerative FCV project.
- The Water Utilities' responded to the energy utilities' contention that the relief requested in Ca-Am Water's AL 853 is pending before the Commission by stating that they have not asked the Commission to develop a tariffs for any electrical regenerative FCV project and thus have not requested any relief that is pending before the Commission in another proceeding.
- The Water Utilities respond to the energy utilities' contention that notice was not properly served to the standard service list in Post 2008 Energy Efficiency Rulemaking (R.) 09-11-014 or Embedded Energy Efficiency Pilot Programs Application (A.) 07-01-026 by stating that this contention is premised upon the energy utilities' incorrect statement that the Water Utilities claim that the electrical regenerative FCV projects are energy efficiency projects.

TURN's Protest:

TURN provides the following comments regarding the proposed electrical regenerative FCV projects:

- TURN expresses concern that the Water Utilities may receive duplicate sources of funding by tracking the electrical regenerative FCV project costs in memorandum accounts for future reimbursement and through revenues earned from future power sales.

- TURN states that cost effective design is a key factor in the Commission's review of energy efficiency portfolios and that the Water Utilities should therefore present specific data addressing cost effectiveness for the electrical regenerative FCV projects.
- TURN requests that the Water Utilities verify that the electrical regenerative FCV projects will perform as expected and therefore yield the expected benefits.
- TURN requests that the Water Utilities explain their conclusion that electrical regenerative FCV projects are eligible for federal tax credits and the time constrains related to the ARRA funds.

The Water Utilities' Joint Reply to TURN's Issues:

- The Water Utilities respond to TURN's concern regarding duplicative sources of funding by explaining that any revenues earned from the sale of electrical generation from the electrical regenerative FCV projects would be credited back to the ratepayers through future rate reductions.
- The Water Utilities respond to TURN's request that they produce specific data addressing the electrical regenerative FCV projects' cost effectiveness by explaining that these are renewable energy generation projects, not energy efficiency projects, and thus the Commission's requirements for OEEP projects are inapplicable. They further explain that, even if the OEEP standards did apply, the Commission has explicitly stated that individual programs within the OEEP need not pass required tests of cost-effectiveness in order to be eligible for funding. Rather, cost-effective design is an important factor in the Commission's review of an entire portfolio of ratepayer-funded energy efficiency programs.
- The Water Utilities respond to TURN's request that they verify that the electrical regenerative FCV projects will perform as expected by explaining that RD&D projects permit the evaluation of untested technologies on a small scale in order to gauge whether their use on a large scale would be beneficial and therefore do not require a guarantee of success.
- The Water Utilities respond to TURN's request for an explanation of the electrical regenerative FCV projects' eligibility for federal tax credits and the related time constraints by setting forth the criteria for ARRA funding; ARRA provides a 30% grant for taxpayers that develop renewable energy projects so long as the projects begin construction before the end of 2010 and are placed in service by January 1, 2014. The Water Utilities explain that because the estimated construction periods for the electrical regenerative FCV projects range from ten to eighteen months, it is likely that the projects will meet the January 1, 2014 deadline.

DRA's Reply:

In its reply, DRA reiterates its recommendation that the Commission reject the ALs stating that tracking the electrical regenerative FCV projects in any existing memorandum accounts would be improper and that the establishment of new memorandum accounts would be more appropriately handled in a general rate case or separate application, arguing that an evidentiary record should be established because such accounts may not benefit ratepayers. DRA also

continues to argue that the project SJWC proposes in its AL is not sufficiently distinct from the 2009 General Rate Case (GRC) hydro turbine project because neither project includes wells or pumps at the project site. Finally, DRA continues to contend that the proposed projects are controversial and therefore inappropriate for consideration by advice letter.

The Energy Utilities' Sur-Reply:

In their Sur-Reply, the Energy Utilities express satisfaction that the Water Utilities are not seeking to classify the electrical regenerative FCV projects as Energy Efficiency measures nor seeking Energy Efficiency funds for their undertaking. The Energy Utilities request that the Commission require the Water Utilities to file supplemental ALs stating that the proposed projects are not Energy Efficiency measures and providing supplemental information regarding funding, grid connection, and timelines for the proposed projects.

DISCUSSION

After reviewing the Water Utilities' ALs, the protests filed by DRA and energy utilities, the protests filed by TURN, and the Water Utilities' Joint Reply, we have determined that a separate memorandum account for each utility should be established to track all the costs associated with the RD&D, electrical regenerative FCV projects. As such, subject to their prudent administration of the electrical regeneration FCV projects, the Water Utilities will be able to recover these RD&D costs.

Reasons for Authorizing the Memorandum Accounts:

Consistency with Policy Objectives:

We conclude that the RD&D, electrical regenerative FCV projects proposed in the ALs are consistent with clearly articulated Commission policy objectives. Specifically, the Division of Water & Audits (DWA) staff advocates the development of electrical regenerative FCVs. Further, the Commission's Water Action Plan, issued October 28, 2010, states that "self-generation of energy using renewable energy sources will be encouraged as another potential opportunity for water utilities to reduce power costs" and directed Class-A water utilities to reduce their energy consumption by ten percent within three years. The proposed projects are self-generation of energy using renewable energy sources and have the potential to help the Water Utilities reduce their overall energy consumption because the electrical regenerative FCV's would improve the pressure and flow of water in the system to much higher level of precision, compared to present levels. Additionally, the operation of these electrical regenerative FCV projects will release zero green house gases (GHGs) and will reduce the Water Utilities' consumption of electrical energy generated with fossil fuels, thereby reducing GHG in the atmosphere consistent with state policy. Further, California's statutory target is to obtain twenty percent of its power from renewable resources by 2010, with a goal to obtain thirty-three percent of its power from renewable energy source by the year 2020. These RD&D, electrical regenerative FCV projects will help achieve the target and goal. Moreover, these projects will generate renewable energy that will be delivered to the energy utilities under existing, applicable

electric tariffs. All told, these RD&D, electrical regenerative FCV projects are consistent with, and will advance, California policy objectives.

Energy Generation, Grid Efficiency and Reliability:

We also find that the RD&D, electrical regenerative FCV projects are beneficial in terms of energy generation and grid efficiency and reliability. Because they are propelled by the excess pressure in water at imported water turnouts, electrical regenerative FCVs recover embedded water energy as electrical energy. These projects will feed electricity into the electrical grid twenty-four hours a day, seven days a week. Moreover, these projects will deliver electrical energy directly into the grid at the same located at the load. This will avoid transmission and distribution system losses, thereby improving the grid's efficiency and reliability. In addition, the electrical regenerative FCV projects will be able to provide black start capability to the grid by switching from resistance load to the grid connection. Also, as generators of renewable energy, these RD&D, electrical regenerative FCV projects and will help off set the need for electric utilities' to construct new peaking projects and will help reduce the United States of America's reliance on foreign oil and natural gas.

Moreover, since these projects are at the load site, they avoid the need to build new transmission and distribution lines.

Other Practical Benefits:

We also conclude that the RD&D, electrical regenerative FCV projects have numerous other practical benefits. Because the new FCV's to be installed in the RD&D projects are a one-to-one replacement for existing PRVs, they simplify construction and reduce project costs. Moreover, these FCVs have a 30-year life expectancy with minimal maintenance needs. They will also create new engineering, construction and operation jobs in California. Further, these RD&D, electrical regenerative FCV projects will reduce the Water Utilities' need to purchase electricity from the electric utilities, thereby reducing the costs of providing water. These savings can be passed on to the Water Utilities' customers over time. The projects will also provide the Water Utilities with greater operational flexibility and reliability while increasing the return on existing utility plant property.

The Protests of DRA and the Energy Utilities, and the Concerns Raised by TURN are rejected.

Characterization of the RD&D, Electrical Regenerative FCV Projects as OEEP Versus Energy Generation Projects:

The primary concern expressed by the energy utilities and DRA is that the RD&D, electrical regenerative FCV projects do not meet the requirements for OEEP projects and that tracking the costs associated with these projects through memorandum accounts established under the OEEP is therefore inappropriate. These concerns do not impact our decision to establish new accounts for the electrical regenerative FCV projects because the Water Utilities do not argue that the proposed projects are OEEP projects. To the contrary, the ALs explicitly state that "the

proposed RD&D program will show whether the HTG projects have the potential to save *even more energy than OEEP."* Therefore, the Water Utilities do not include the electrical regenerative FCV projects as OEEP projects, but instead classify them as a distinct type of RD&D project that may prove even more effective than OEEP projects in saving energy, one of the goals of the OEEP. We agree with this characterization because the technology to be studied in the electrical regenerative FCV projects would permit the Water Utilities to recover otherwise wasted hydraulic energy and convert it into electrical energy, thereby enabling the Water Utilities to reduce their overall energy consumption. We thus recognize parallel policy goals between the electrical regenerative FCV projects and OEEP projects, but find that the Water Utilities correctly make an important distinction that the electrical regenerative FCV are also energy generation projects.

In addition, we emphasize that the Water Utilities do not propose that the electrical regenerative FCV project costs be recovered from funds associated with the energy utilities' energy efficiency budgets. To the contrary, in their Joint Response, the Water Utilities explain that their customers would bear the costs of the electrical regenerative FCV projects, except to the extent that the Water Utilities are able to offset such costs through sales of renewable energy generated by the projects to the energy utilities under the tariffs established pursuant to Public Utilities Code Section 399.20. As such, we reject the energy utilities' argument that the relief requested in the ALs is unjust, unreasonable and discriminatory. The Water Utilities will in no way use energy efficiency funding to support non-energy efficiency projects for their own benefit, as the energy utilities contend.

In accordance with our conclusion that the RD&D, electrical regenerative FCV projects are energy generation projects rather than OEEP projects, we have determined not to authorize tracking the project costs in the Operational Energy Efficiency Memorandum Accounts previously authorized by the Commission in D.10-04-030. However, because the electrical regenerative FCV projects are consistent with Commission and State policies, are beneficial in terms of energy generation and have numerous other practical benefits, as discussed above, we find it appropriate to establish separate memorandum accounts in which each of the Water Utilities may track the RD&D costs. As such, subject to their prudent administration of the electrical regeneration FCV projects, the Water Utilities will be able to recover these RD&D costs. The arguments raised by the energy utilities and DRA do not compel a decision to the contrary.

The Water Utilities' use of Advice Letters was Procedurally Proper.

The energy utilities and DRA's contention that an advice letter is not the procedurally proper mechanism for proposing these RD&D, electrical regenerative FCV projects is largely premised upon their argument that the projects are controversial and raise important policy questions because recovering their costs through the OEEP Memorandum Accounts would be an improper expansion of the OEEP. We reject these arguments because, as already explained, (i) the ALs explicitly state that the electrical regenerative FCV projects are energy generation projects, not energy efficiency projects; (ii) we have determined that the electrical regenerative FCV project costs will be tracked in newly established memorandum accounts, not the Operational Energy Efficiency Program Memorandum Accounts; and (iii) none of the electrical regenerative FCV

costs will be recovered from funds associated with the energy utilities' energy efficiency budgets. Therefore these projects will not result in any expansion of the OEEP, improper or otherwise.
Further, we find that the "quick and simplified review" offered by the advice letter process is appropriate for these projects because the electrical regenerative FCV projects are RD&D projects that can be built quickly and that involve funding levels well within the parameters that the Commission regularly considers through the advice letter process. Specifically:

- Cal-Water proposes a single hydro turbine installation at the Bear Gulch District Operations Center in the Town of Atherton that it estimates will cost $1,380,300;
- GSWC proposes a hydro turbine installation at the MWD in the City of Norwalk that it estimates will cost $477,000 and a hydro turbine installation at MWD in the City of Cypress that it estimates will cost $867,000, assuming that ARRA funding is not available for either project;
- Cal-Am Water proposes a single hydro turbine installation at the Beyer Blvd. PRV Station in the San Diego District that it estimates will cost $598,319, assuming that ARRA funding is not available; and
- SJWC proposes two hydro turbine installations at the Hostetter Road Turnout in east San Jose that it estimates will cost $365,838 and $413,219, assuming the application for and receipt of ARRA grants.

Moreover, the Commission's rules generally suggest that the advice letter process is appropriate here. The Commission clearly contemplates that the matters appropriate for consideration by advice letter vary in degree of complexity, as illustrated by the tiered advice letter structure. In General Order No. 96-B, Water Industry Rule 7.3.1 provides for Tier-1 matters; Water Industry Rule 7.3.2 provides for Tier-2 matters, and Water Industry Rule 7.3.2 (5) specifically provides for the use of an Advice Letter to file a New Memorandum Account Request, as we are presented with here; and Water Industry Rule 7.3.3 provides for Tier-3 matters. Subjects as complex as establishing new non-tariff investments, informal GRCs, and memorandum account amortizations comprise Tier-3. Further, General Rule 1.3 explains that "the General Rules and Industry Rules should be liberally construed to secure just, speedy, and inexpensive handling of informal matters…". The Water Utilities are currently between General Rate Cases and will be unable to benefit from the 30% grants for renewable energy projects offered under Section 1603 of ARRA without speedy resolution of their proposals so that they can begin construction of the electrical regenerative FCV projects before the end of 2010. Moreover, approval of these advice letters does not establish a Commission policy in favor of regenerative FCV. Nor does our approval require other water utilities to study or install regenerative FCV. Approval of these advice letters addresses an important issue, but it is narrow, focused and confined to four utilities and RD&D. Thus, we find that the advice letter process is the appropriate mechanism for seeking approval of these projects because, while important, they raise narrow, focused and limited policy questions with appropriately focused and limited controversy. We also find that General Rule 1.3 would, in any case, guide us toward liberally construing our advice letter rules to permit consideration of these projects through the advice letter process. As explained above, we find that these are beneficial projects that further the targets and goals of the Commission, and the State, and we find that General Rule 1.3 gives us discretion to apply the Commission's advice letter rules in a manner that facilitates such projects.

SJWC's Hostetter Road Turnout Electrical Regenerative FCV Project is Distinct from the GRC Hydro Turbine Project:

We find DRA's statement that SJWC is revisiting a hydro-turbine generation project that the Commission rejected in D.09-11-032 and is thereby attempting to use the advice letter process to circumvent the various instructions and requirements that the Commission included in D.09-11-032 to be misguided. We conclude that the Hostetter Road Turnout electrical regenerative FCV project proposed in AL 418 uses superior technology that was unavailable at the time of SJWC's 2009 GRC and is a different project. The Water Utilities enumerated the distinctions between the two projects in the joint reply:

- The GRC application proposed a conventional project, using centrifugal-pump-as-turbine technology (Cornell Pump Co, Francis-type Turbine), with a fixed cost. AL-418 proposes RD&D projects using new positive-displacement-pump-as-turbine technology (Zeropex Co., Difgen Rotating PRV) specifically designed for replacements PRVs. This **new** technology was not available at the time of the GRC application submission;
- The conventional Cornell HTG proposed in the GRC operates efficiently at a single flow rate (7 MGD). In contrast, the Zeropex HTG proposed in AL 418 operates efficiently over a wide range of flow rates (2 to 10 MGD), which should result in recovery of additional energy;
- The GRC application proposed a single 100 kW hydro turbine. The electrical regenerative FCV projects proposed in AL 418 consist of two hydro turbine generators: a 113 kW hydro turbine generator at the first turn out, and a 37 kW hydro turbine generator at the second turnout;
- The GRC application proposed a project that did not qualify for an energy investment tax credit. In contrast, the electrical regenerative FCV projects proposed in AL 418 would produce 150 kW, making them eligible for ARRA Section 1603 grants equal to 30% of the projects' costs;
- The GRC application quoted a project cost of $692,200 for the single 100 kW hydro turbine generator. AL 418 proposes the installation of a 113 kW hydro turbine at the first turnout at a cost of $365,838 and the installation of a 37 kW hydro turbine at the second turnout at a cost of $413,298. Therefore, the electrical regenerative FCV projects would provide 50% more capacity at a price increase of only 12.5%;
- The GRC application proposed a project that involved bypassing the existing PRV and installing the hydro turbine in the bypass line. AL 418 proposes removing the two existing PRV's and directly replacing them with two hydro turbines;
- The GRC application proposed a project that would have generated 664,666 kWh per year. The combined output from the two hydro turbines in the electrical regenerative FCV project proposed in AL 418 is estimated at over 1,321,972 kWh per year; and
- The GRC application proposed a project that would only have distributed water to the Cambrian Zone. AL 418 proposes electrical regenerative FCV projects that would distribute water to the Columbine and Cambrian Zones.

Given each of these significant differences, we conclude that the project that SJWC proposed in its 2009 GRC application is different than the electrical regenerative FCV project that it proposes in AL 418. Most importantly, the Hostetter Road project proposed here employs a brand new technology and is part of a suite of projects proposed as part of a RD&D program to test out this new technology. Thus, while the current project is not being proposed in conjunction with an electric utility as suggested in D.09-11-032, it is being proposed as part of a joint RD&D proposal including several partners. We thus conclude that the current proposal is sufficiently distinct from the proposal previously rejected in SJWC's GRC as to warrant its approval here. Accordingly, we reject DRA's arguments on this point.

The ALs Do Not Contain Material Errors or Omissions:

We disagree with the energy utilities' contention that the ALs contain material errors or omissions merely because Cal-Water misidentified the tariffs under which it would connect its electrical regenerative FCV project to the grid, because GSWC and Ca-Am water did not discuss the applicable tariffs for interconnection to the grid, or because the Water Utilities generally did not discuss interconnection costs. As stated by the energy utilities, SJWC correctly identified that PG&E offers Tariffs E-SRG for interconnection, and Cal-Water could also use Tariffs E-SRG. Further, the Commission has mandated in D.07-07-027 that each electrical corporation maintain such tariffs for its public water and wastewater customers with renewable energy facilities up to 1.5 MW, thus tariffs are available for all the electrical regenerative FCV projects. Moreover, these are normal project development items that will be addressed as the Water Utilities move forward with identifying engineering and design firms and resolving other open issues, not material errors or omissions that render the ALs deficiencies.

AL-853 Requests No Relief that is pending Before the Commission:

We reject the energy utilities' contention that Ca-Am Water requested relief that is pending before the Commission in a formal proceeding. As stated above, the Commission has required that each electrical corporation maintain tariffs for its public water and wastewater customers with renewable facilities up to 1.5 MW. Thus, Cal-Am Water erred in stating that energy tariffs for electrical generation from its electrical regenerative FCV project would need to be negotiated. However, no where in its advice letter did it request that the Commission develop a tariff for its electrical regenerative FCV project. On August 24, 2010, the Commission did issue a proposed decision in Rulemaking 08-08-009 that would expand the availability of the tariff offered pursuant to Public Utilities Code Section 399.20 to all of the energy utilities' customers and to renewable energy facilities up to 20 MW, but the decision pending before the Commission does not impact the availability of the existing tariffs to the Water Utilities.[1] Therefore, no further action is required of the Commission with respect to developing a tariff for

[1] While the existing tariffs required by D.07-07-027 were based on provisions originally, but no longer, contained in PU Code Section 399.20, that section continues to provide for sales of electricity to electric corporations from electric generation facilities that are eligible renewable energy resources with an effective capacity of not more than 3 MW. Water utilities should be able to take advantage of whatever revised tariffs are implemented in response to the revised statute.

the electric generation from Cal-Am Water's electrical regenerative FCV project. As such, this issue has no bearing on our decision to establish memorandum accounts for tracking the costs of the RD&D, electrical regenerative FCV projects.

The ALs Have Been Served on the Service List for A.07-01-024

As the Water Utilities do not contend that the electrical regenerative FCV projects are energy efficiency projects and do not request that any energy efficiency funds be used for the electrical regenerative FCV projects, we find compelling their statement in the Joint Response that notice to the standard service list in the Post 2008 Energy Efficiency Rulemaking 09-11-014 or Embedded Energy Efficiency Pilot Programs A.07-01-026 was not required. However, even if notice were required, the energy utilities have been noticed. As they explain in the joint protest, because they were not initially notified of the ALs until July 27, 2010, they requested and received an extension to file protests in response to the ALs. Further, the Joint Protest states that the ALs have now been served on the service list for this proceeding, A.07-01-024. Because each party with an interest has now been noticed, the notice issue should have no bearing on our decision to establish memorandum accounts for tracking the costs of the RD&D, electrical regenerative FCV projects.

None of the Issues Raised by TURN Should Hinder Development of the Electrical Regenerative FCV Projects:

TURN states that "cost-effective design is a key factor in the Commission's review of energy efficiency portfolios" and thus contends that the Water Utilities must present specific data addressing cost-effectiveness. We disagree with these comments because the electrical regenerative FCV projects are renewable energy generation projects, not energy efficiency projects. Therefore, TURN's iteration of OEEP project requirements do not apply. Further, even if the Water Utilities had characterized the electrical regenerative FCV projects as energy efficiency projects, TURN's comments would not be accurate. Although the Commission has described cost-effectiveness requirements for an entire portfolio of ratepayer-funded energy efficiency activities and programs, it has explicitly explained that individual programs need not pass tests of cost-effectiveness in order to be eligible for funding. Moreover, the electrical regenerative FCV projects are RD&D because they demonstrate new technology, and proponents of RD&D projects need not justify costs or do a cost-benefit analysis. To the contrary, Commission has dedicated resources to RD&D for technologies that it explicitly found not to be cost effective.

We do not agree with TURN's statement that the Water Utilities should verify that the electrical regenerative FCV projects "will perform as expected and yield projected benefits" and need to explain their conclusion that the electrical regenerative FCV projects are eligible for federal tax credits and ARRA grants, and the time constraints related to the funds. A basic idea underlying RD&D is that new technologies may be tested on a small scale in order to evaluate whether implementing them on a larger scale would be beneficial. Thus, as RD&D projects, it would be unreasonable to require Water Utilities to provide a guarantee that the electrical regenerative FCV projects will be successful. We also find that there is sufficient evidence in the record to establish the applicability of ARRA funding to these projects. Section 1603 of ARRA provides a 30% grant for taxpayers that develop renewable energy projects (i) if construction begins during

2009 or 2010, and (ii) if the project is placed in service by the "credit termination date," which is January 1, 2014 for projects. Because the estimated construction periods for the electrical regenerative FCV projects range from ten months to eighteen months, they are very likely to meet the January 1, 2014 deadline even if they are impacted by permitting delays.

Finally, TURN expresses concern that the Water Utilities might inappropriately receive a double recovery of electrical regenerative FCV project expenses by first recovering costs tracked in memorandum accounts and then by earning revenues from future electricity sales to the energy utilities. However, the Joint Response clearly explains that any revenues earned from the sale of electrical generation from the electrical regenerative FCV projects would be credited back to the ratepayers through future rate reductions. Therefore, the Water Utilities will not receive duplicative funding.

We therefore conclude that TURN's comments should not impede our authorization of separate memorandum accounts for tracking the costs of the RD&D electrical regenerative FCV projects.

Engineering and Design of the RD&D, Electrical Regenerative FCV projects:

In order to complete the RD&D, electrical regenerative FCV projects in a timely and consistent manner, the Water Utilities and energy utilities should work with the DWA Staff to finalize project site details, to develop the projects scope and select a single engineering and design firm. The Water Utilities shall provide the funds for the selected engineering and design firm to work under the collaborative oversight of the DWA Staff, and the funds will be entered into the new memorandum account.

Evaluation, Measurement and Verification:

In order to ensure reasonable evaluation, Water Utilities should work with DWA staff to hire an evaluation, measurement and verification (EM&V) consultant to work under the collaborative oversight of the DWA Staff. In consultation with Water Utilities and energy utilities, the DWA staff, together with the evaluation, measurement and verification (EM&V) consultant will develop the measurement, verification and evaluation protocol. The Water Utilities shall provide the funds for the EM&V consultant, and these funds will be entered into the new memorandum account.

COMMENTS

Public Utilities Code § 311(g)(1) provides that resolutions must generally be served on all parties and subject to at least 30 days public review and comment prior to a vote of the Commission. This resolution was mailed on November 2, 2010 to the parties on each respective water utility's service list and the Commission's Energy Efficiency proceeding service list in A.07-01-024.

Comments were received from DRA, the Energy Utilities, SCVWD, and the Water Utilities. To the extent that changes were necessary as a result of the filed comments, they were made in the body of this order.

FINDINGS AND CONCLUSIONS

1. The RD&D electrical regenerative FCV projects conform to policy objectives of the Commission, the State Legislature and the Governor:
    a. The DWA Staff advocates development of electrical regenerative FCV;
    b. The Commission's Water Action Plan issued in 2005 required Class-A water utilities to reduce their energy consumption by ten percent within three years; these projects will help Water Utilities to reduce their overall energy consumption;
    c. The operation of these RD&D projects release zero green house gases (GHGs) while reducing the Water Utilities' use of electrical energy generated by fossil fuels, therefore reducing GHGs in the atmosphere consistent with State policy;
    d. California's policy goal is for energy utilities to obtain thirty-three percent of their power from renewable energy sources by the year 2020;
    e. These projects will generate renewable energy; and
    f. The projects will reduce each Water Utilities' carbon footprint.

2. Propelled by the excess embedded pressure in the water at import water turnouts, electrical regenerative FCV's recover embedded water energy as electrical energy.
3. The RD&D, electrical regenerative FCV projects will feed electrical grid twenty-four hours a day, seven days a week.
4. The RD&D, electrical regenerative FCV projects will deliver electrical energy directly into the gird at the site of electrical consumption, without transmission and distribution losses, thereby improving the grid's efficiency and reliability.
5. Electrical regenerative FCV projects will help offset the need for the electric utilities to construct new peaking generators, as well as new transmission and distribution lines.
6. Regenerative FCV will provide black start capability to the grid.
7. As generators of renewable energy, the RD&D, electrical regenerative FCV projects will help reduce the United States of America's reliance on foreign oil and natural gas.
8. Because the new technologically FCVs to be installed in the RD&D projects are a one-to-one replacement for existing PRVs, they simplify construction and reduce project cost.
9. The FCV's to be installed in the RD&D projects have a 30-year life expectancy with minimal maintenance needs.
10. The RD&D, electrical regenerative FCV projects will create new engineering, construction and maintenance jobs in California.
11. The RD&D, electrical regenerative FCV projects will reduce the Water Utilities' need to purchase electricity from electric utilities, creating savings that can be passed on to the Water Utilities' customers over time.
12. The RD&D, electrical regenerative FCV projects will provide the Water Utilities with greater operational flexibility and reliability while leveraging existing utility plant property.

13. The Water Utilities classify the RD&D, electrical regenerative FCV projects as energy generation projects.
14. The RD&D, electrical regenerative FCV projects and OEEP projects share the common policy goal of reducing the consumption of energy produced by non-renewable resources.
15. The Water Utilities do not propose that the RD&D, electrical regenerative FCV project costs be recovered from funds associated with the energy utilities' energy efficiency budgets.
16. The Water Utilities' customers will bear the prudently administered RD&D, electrical regenerative FCV project costs except to the extent that the Water Utilities are able to offset the costs through sales of renewable energy generated by the projects to the energy utilities under the tariffs established pursuant to California Public Utilities Code Section 399.20.
17. Because the RD&D, electrical regenerative FCV projects are energy generation projects rather than OEEP projects, we have determined that separate memorandum accounts should be established in which each of the Water Utilities may track the RD&D costs, rather than using the Pump-Motor, Operational Energy Efficiency Program Memorandum Accounts.
18. The establishment of new memorandum accounts for tracking the costs of the RD&D, electrical regenerative FCV project costs will not result in any expansion of the OEEP.
19. The simplified review offered by the advice letter process is appropriate for the RD&D, electrical regenerative FCV projects because: (i) the projects will be constructed relatively quickly (estimated time frames for the projects range from ten to eighteen months); (ii) funding levels for the projects are well within the parameters that the Commission regularly considers in advice letter filings (e.g., informal GRCs); and (iii) the issues, while important, are narrow, focused and confined with limited controversy, and (iv) Water Industry Rule 7.3.2 (5) specifically provides for the use of an Advice Letter to file a New Memorandum Account Request.
20. General Rule 1.3 states that the Commission's "General Rules and Industry Rules should be liberally construed to secure just, speedy, and inexpensive handling of informal matters…".
21. The Water Utilities are currently between General Rate Cases and will be unable to benefit from the 30% grants for renewable energy projects offered under Section 1603 of the American Reinvestment and Recovery Act of 2009 without speedy resolution of their ALs so that they can begin construction prior to the end of 2010.
22. The Hostetter Road Turnout electrical regenerative FCV project proposed by SJWC in AL 418 is different from the hydro turbine project proposed in SJWC's 2009 GRC, and it employs a brand new technology and is being proposed as part of a joint RD&D proposal including several partners.
23. The Commission required in D.07-07-027 that each electrical corporation must maintain a tariff for its public water and wastewater customers with renewable energy facilities up to 1.5 MW such that tariff are available under which each of the electrical regenerative FCV projects can interconnect to the electrical grid; therefore:
    a. No interconnection-related errors or omissions in the ALs render them deficient; and
    b. No further action is required of the Commission with respect to developing a tariff for the RD&D project proposed by Ca-Am Water in AL-853.

24. The energy utilities requested and received an extension to file protests in response to the ALs and the ALs have now been served on the service list for A.07-01-024.
25. OEEP project requirements do not apply to the RD&D projects proposed in the ALs because the electrical regenerative FCV projects are renewable energy generation projects, not energy efficiency project.
26. Although the Commission has described cost-effectiveness requirements for an entire portfolio of ratepayer-funded energy efficiency activities and programs, it has explained that individual programs need not pass tests of cost-effectiveness in order to be eligible for funding.
27. RD&D permits new, untested technologies to be evaluated on a small scale in order to assess whether large scale implementation would be beneficial; therefore, it would be unreasonable to require proponents of RD&D projects to provide a guarantee that proposed projects will succeed.
28. Section 1603 of ARRA provides a 30% grant for taxpayers that develop renewable energy projects (i) if construction begins during 2009 or 2010 and (ii) if the projects are placed in service by January 1, 2014; because the estimated construction periods for the electrical regenerative FCV projects range from ten months to eighteen months, they are likely to meet the January 1, 2014 deadline even if there are permitting delays.
29. Any revenues earned from the sale of electrical generation from RD&D, electrical regenerative FCV projects will be credited back to the Water Utilities' ratepayers; therefore the Water Utilities will not receive duplicative funding.

THEREFORE IT IS ORDERED THAT:

1. This resolution approves the establishment of a new, separate memorandum account for each of San Jose Water Company, California-American Water Company, Golden State Water Company, and California Water Service Company (collectively "Water Utilities"). The memorandum account will be known as the Pressure-Reducing Value Modernization and Energy Recovery Memorandum Account (PRVMA), and it shall be used to track all of the costs associated with the Research, Development and Demonstration of electrical regenerative flow control value projects proposed in the advice letters. The effective date of the advice letters shall be five days after this resolution is approved.
2. The Water Utilities are authorized to recover the costs of these Research, Development and Demonstration, electrical regeneration FCV projects from their ratepayers through a Tier 3 Advice letter filing, subject to their prudent administration of the projects.
3. Water Utilities shall, and energy utilities should, work with the Division of Water and Audits (DWA) Staff to finalize project site details, develop project scope and select a single engineering and design firm. Water Utilities shall provide the funds for the selected firm to work under the collaborative oversight of the DWA Staff, and these costs shall be entered into the new PRVMA.
4. Water Utilities shall, and energy utilities should, work with DWA Staff to develop evaluation, measurement and verification (EM&V) protocol and select an EM&V

consultant. The consultant shall work under the collaborative oversight of DWA Staff. Water Utilities shall provide the funds for the consultant, and the costs shall be entered into the new PRVMA.

5. This resolution is effective today.

I certify that the foregoing resolution was duly introduced, passed, and adopted at a conference of the Public Utilities Commission of the State of California held on December 2, 2010; the following Commissioners voting favorably thereon:

/s/ PAUL CLANON
Paul Clanon
Executive Director

MICHAEL R. PEEVEY
President
DIAN M. GRUENEICH
JOHN A. BOHN
TIMOTHY ALAN SIMON
NANCY E. RYAN
Commissioners