

Orchard Mesa Irrigation District



668 38 Road
Palisade, CO 81526

October 1, 2016

970-464-7885
FAX 970-464-5928

Anna Mauss, P.E.
Water Project Loan Program
CWCB Finance Section
1313 Sherman Street, Room 718
Denver, Co 80203

**Re: CWCB Loan Request to Support the Rehabilitation and Improvements of
the Grand Valley Power Plant**

Dear Anna,

The Grand Valley Water Users Association (Association) and the Orchard Mesa Irrigation District (District) operate and maintain the Grand Valley Power Plant (GVPP) under a lease of power privilege with the U.S. Bureau of Reclamation. Operation of the GVPP is vital in maintaining flows in the Critical Habitat of the 15 Mile Reach for Endangered Fishes in the Colorado River through the Grand Valley.

The GVPP is in dire need of rehabilitation to bring it up to a sustainable operating condition and current electric and safety standards. The Association and District are partnering to undertake this task. The total cost is estimated at about \$5.2 million. To date we have obtained commitment for grant funding from the Endangered Fish Recovery Program in the amount of \$1.5 million. Additionally, we will be seeking grant funding from the Basin Roundtable, a Federal WaterSmart grant and from other sources.

The District and Association are each requesting loans in equal amounts to cover the balance of the funding required to complete the project. We respectfully request your consideration of the Loan Applications from the District and Association.

Sincerely,



Max Schmidt
Orchard Mesa Irrigation District, Manager




COLORADO

Colorado Water
Conservation Board

Department of Natural Resources

Water Project Loan Program

Application Type	
<input type="checkbox"/> Prequalification (Attach 3 years of financial statements)	<input checked="" type="checkbox"/> Loan Approval (Attach Loan Feasibility Study)
Agency/Company Information	
Company / Borrower Name: Orchard Mesa Irrigation District	
Authorized Agent & Title: Max Schmidt, Manager	
Address: 668 38 Road, Palisade, CO 81526	
Phone: (970) 464-7885	Email: info@omirrigation.com
Organization Type: <input type="checkbox"/> Ditch Co., <input checked="" type="checkbox"/> District, <input type="checkbox"/> Municipality <input type="checkbox"/> Other: _____	Incorporated? <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO
County: Mesa	Number of Shares/Taps: 474 Headgates, 9,182.25 acre ft
Water District: 72	Avg. Water Diverted/Yr 429,126 acre-feet
Number of Shareholders/Customers Served: 5,875	Current Assessment per Share \$ ^{63.00/118.12/84.00} (Ditch Co)
Federal ID Number: 84-0790376	Average monthly water bill \$ _____ (Municipality)
Contact Information	
Project Representative: Max Schmidt	
Phone: (970) 464-7885	Email: max@omirrigation.com
Engineer: Teddy Sorenson, EIT	
Phone: (208) 716-3077	Email: teddy@tsorenson.net
Attorney: Mark A. Hermundstad with Williams, Turner & Holmes, P.C.	
Phone: (970) 242-6262	Email: mherm@wth-law.com
Project Information	
Project Name: Grand Valley Powerplant	
Brief Description of Project: (Attach separate sheets if needed)	
Rebuild the Grand Valley Project Powerplant	
This application is to be combined with an identical application from the Grand Valley Water Users Association for the same purpose.	
The two entities are partnering to rehabilitate the Grand Valley Power Plant and each is requesting equal loan amounts.	
Costs below are described in further detail in the attached Loan Feasibility Study	
General Location: (Attach Map of Area)	
668 38 Road, Palisade, CO 81526 (See Loan Feasibility Study for further detail)	
Estimated Engineering Costs: \$350,000	Estimated Construction Costs: \$4,801,754
Other Costs (Describe Above): \$51,517	Estimated Total Project Costs: \$5,203,271
Requested Loan Amount: (Limit 90% of Total Project Costs) \$2,000,000	Requested Loan Term (10, 20, or 30 years): 30 Years
Project Start Date(s) Design: Underway Construction: Underway	
Signature	
 Signature / Title _____ Date _____	Return to: Finance Section Attn: Anna Mauss 1313 Sherman St #718 Denver, CO 80203 Ph. 303/866.3449 e-mail: anna.mauss@state.co.us

GRAND VALLEY HYDROELECTRIC POWER PLANT REHABILITATION PROJECT

LOAN FEASIBILITY STUDY

SUBMITTED TO THE COLORADO WATER CONSERVATION BOARD

Primary Contact: Max Schmidt, Manager
Orchard Mesa Irrigation District
668 38 Road
Palisade, CO 81526
Phone: 970-464-7885
Fax: 970-464-5928
max@omirrigation.com

October 1, 2016



FEASIBILITY STUDY APPROVAL
Pursuant to Colorado Revised Statutes 37-60-121 & 122, and
in accordance with policies adopted by the Board, the
CWCB staff has determined this Feasibility Study meets all
applicable requirements for approval.

Signed

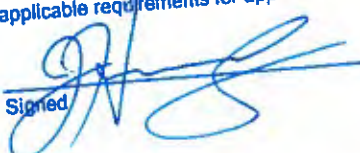

Date 11/4/16

Table of Contents

Contents	Page
Table of Contents.....	2
List of Tables	3
List of Figures	4
Executive Summary.....	5
1.0 Background	6
2.0 Project Sponsor(s)	10
3.0 Water Rights	13
4.0 Project Description	15
5.0 Financial Feasibility Analysis	31
6.0 Conclusions and Recommendations	33
7.0 Attachments.....	34

List of Tables

No.	Title	Page
1.1	Climate Summary	7
1.2	Proposals	10
3.1	Summary of Water Rights.....	13
4.1	Existing Condition Grand Valley Production MW.....	17
4.2	Grand Valley Production – 3.5 MW.....	18
4.3	Grand Valley Production – 4.1 MW.....	19
4.4	Capitol Costs.....	19
4.5A-C	Grand Valley Rebuild Loan Payment.....	20
4.6	Grand Valley Rebuild Annual O & M Expenses	21
4.7	Total First Year Annual Payment	21
4.8A	Economic Pro Forma - \$4.0M.....	23
4.8B	Economic Pro Forma - \$2.0M.....	24
4.8C	Economic Pro Forma - \$1.5M.....	25
4.8D	Economic Pro Forma - \$1.5 M \$40/MW and Flatrate LOPP.....	26
4.9	Capitol Cost Hydo Rebuild.....	29
4.10	Anticipated Project Schedule.....	30

List of Figures

No.	Title	Page
1.1	Project Area Map	8
1.2	District Boundary Map	9
3.1	Water Distribution Chart.....	14
3.2	OMID Average Monthly Flowrate.....	15
4.1	Detail Map of Project Area.....	28
4.2	Plant Cross Section.....	29

Executive Summary

Date: October 1, 2016

Applicant: Max Schmidt, Manager
Orchard Mesa Irrigation District
668 38 Rd.
Palisade, Colorado 81526

Co-Applicant Mark Harris, General Manager
Grand Valley Water Users Association
1147 24 Road
Grand Junction, CO 81505

Project Location: Mesa County, Colorado

Project Summary: The Project Sponsors, comprised of the Orchard Mesa Irrigation District (OMID or District) and the Grand Valley Water Users Association (GVWUA or Association) are submitting two Loan Feasibility Studies requesting a combined hydropower loan in the total amount \$4,000,000 to facilitate the rebuild of the existing Grand Valley Hydroelectric Power Plant. The Project Sponsors are diligently working to obtain additional funding, which, if successful, would substantially reduce the total loan amount to between \$1.5 and \$2.0M. The Project Sponsors would each be responsible for one half of the loan amount. The \$4.0M would be considered an interim construction loan while final grant funding is secured. The objective of the project is to restore the facility to an economically and operationally sustainable condition. It is anticipated that the rebuild/upgrade would increase the maximum generation output from 2.75 MW to 4.1 MW. No additional flows will be necessary to achieve this additional generation capacity, as this increase will be the result of improved efficiencies and increased head.

Estimated Completion Date: June 2018

1.0 Background

1.1 Introduction/History – The Grand Valley Power Plant (GVPP) was constructed in the early 1930s by the United States through the Bureau of Reclamation with funds advanced by the Public Service Company of Colorado. Under passed plant conditions, power generation has averaged about 11,000,000 kilowatt-hours (KWhr) annually. However recent work by the project sponsors has resulted in power generation of up to 14MKWhr per year. The plant is comprised of two hydroelectric turbines, and when operable, operate under the maximum head of 79 feet and has a capacity of 3,000 kilowatts.

The plant is actually owned by the United States under the jurisdiction of the Bureau of Reclamation and originally operated by Public Service Company of Colorado in conjunction with the Cameo coal fired power plant. The GVPP carries out a critical role in the management of flows in the Colorado River in Mesa County. The plant is located at the beginning of the 15 Mile Reach of Critical Habitat for Endangered Fish. The non-consumptive water right of the GVPP ensures continued flows for this important stretch of river. The continued operation of the GVPP is vitally important for the success of the recovery of the endangered fishes in the Colorado River. When Public Service Company chose to decommission the coal fired plant in 2009 and cease operation of the GVPP, and in order to keep the GVPP in seamless operation, the District and Grand Valley Water Users Association were encouraged by Reclamation to accept assignment of the Lease of Power Privilege. On December 30, 2010, the District and the Association entered into a Lease of Power Privilege (LOPP) with Reclamation to jointly operate and maintain the plant. The District and Association have cautiously operated the plant since that time but now realize the daunting task of rehabilitating a worn-out facility.

1.2 Purpose - While operated by Public Service few upgrades and minimum maintenance were carried out at the plant. Due to the worn and outdated condition of the plant most major components require replacement or upgrades. The District and Association desire to obtain a loan of up to \$4.0M to cover the estimated cost of needed upgrades. Among other improvements to bring the plant to modern day standards the major planned improvements include:

- Penstocks – The two 78” diameter penstocks were replaced in 1993. Interiors need recoating along with scroll case and draft tubes.
- Turbines - All existing turbine components need to be replaced except the draft tube and spiral case.
- Generation - The generation units need to be disassembled and rewound. The new generator efficiency is estimated at 94% increasing the “water-to-wire” efficiency from 54% to 82.5%. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*).

- The existing controls, switchgear, and substation are out of compliance with current NESC clearances and standards and will require replacement.

1.3 Study Area Description – The Grand Valley, located in west-central Colorado, Mesa County, is a broad valley about 12 miles wide and 35 miles long. The steep cliffs flanking its side have been cut by the Colorado River as it works its way to the Gulf of California. About midway through the Grand Valley the Colorado meets the Gunnison River near downtown Grand Junction. Fifteen miles upstream and to the east is the Town of Palisade. The GVPP is located adjacent to the District headquarters approximately 1 mile south of the Town of Palisade on the south side of the Colorado River. The District’s western boundary is the Gunnison River at the confluence with the Colorado near downtown Grand Junction.

The elevation of the irrigated area averages about 4700 feet above sea level. The climate in the Grand Valley is that of mild winters and hot summers. Temperatures extremes can vary from occasional below zero in the coldest winters to above 100 degrees in the warmest part of the summer. The annual precipitation in the Grand Valley averages about 9.0 inches with most of the precipitation occurring during the spring and fall months. Table 1.1 displays the annual precipitation, and Max and Min temperatures for a recent 11-year period at the nearby Grand Junction Regional Airport.

Climate Summary - Grand Junction Regional Airport			
2003 - 2013			
	Annual Precip (in)	Max Temp (F)	Min Temp (F)
2003	7.31	105	4
2004	9.6	101	-5
2005	11.82	106	3
2006	9.87	104	3
2007	9.72	103	-8
2008	7.26	102	-4
2009	7.79	102	-16
2010	8.8	105	-9
2011	9.76	101	-9
2012	4.51	102	-5
2013	12.43	103	-12

Table 1.1

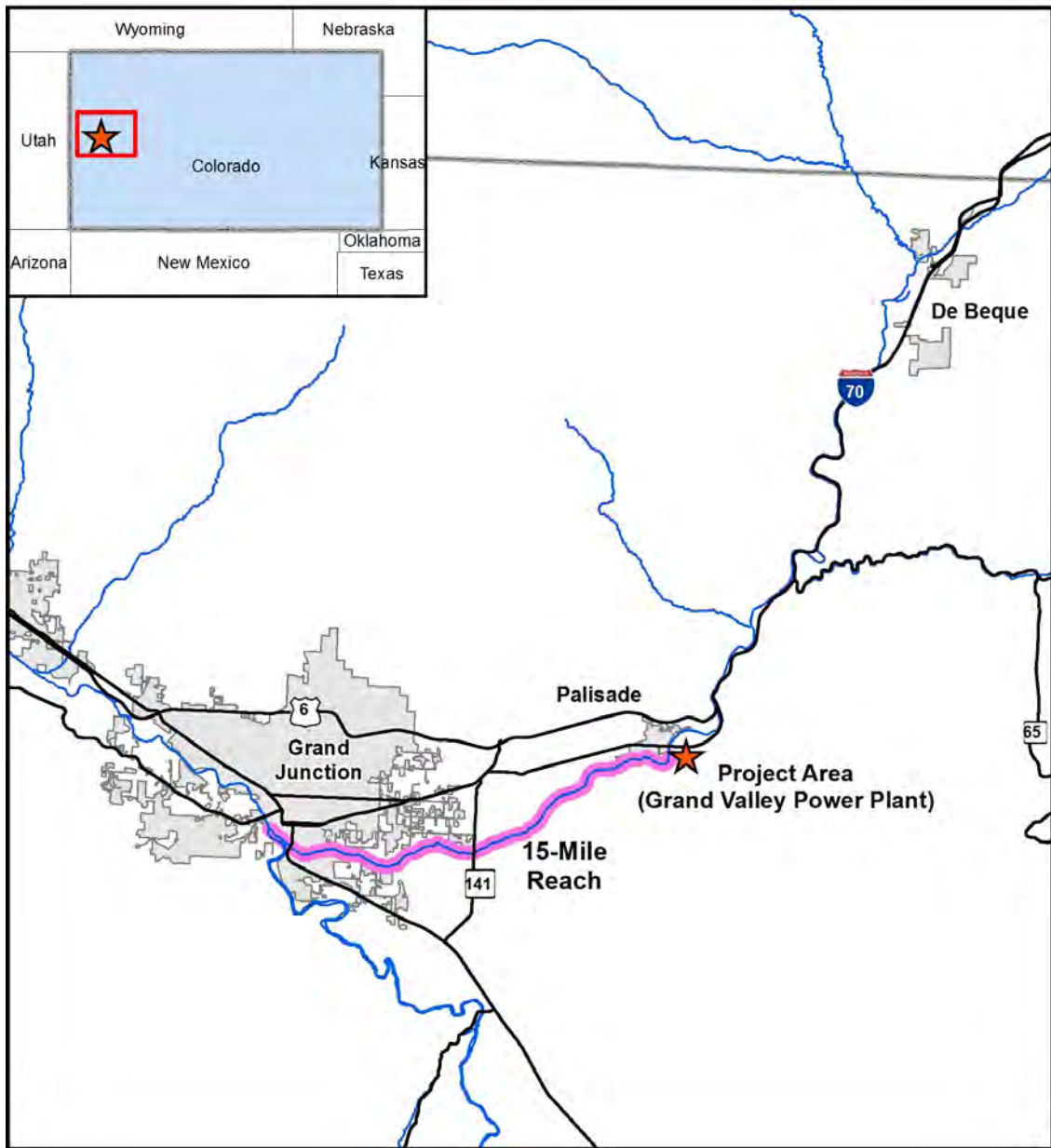


Figure 1.1 Project Area Map

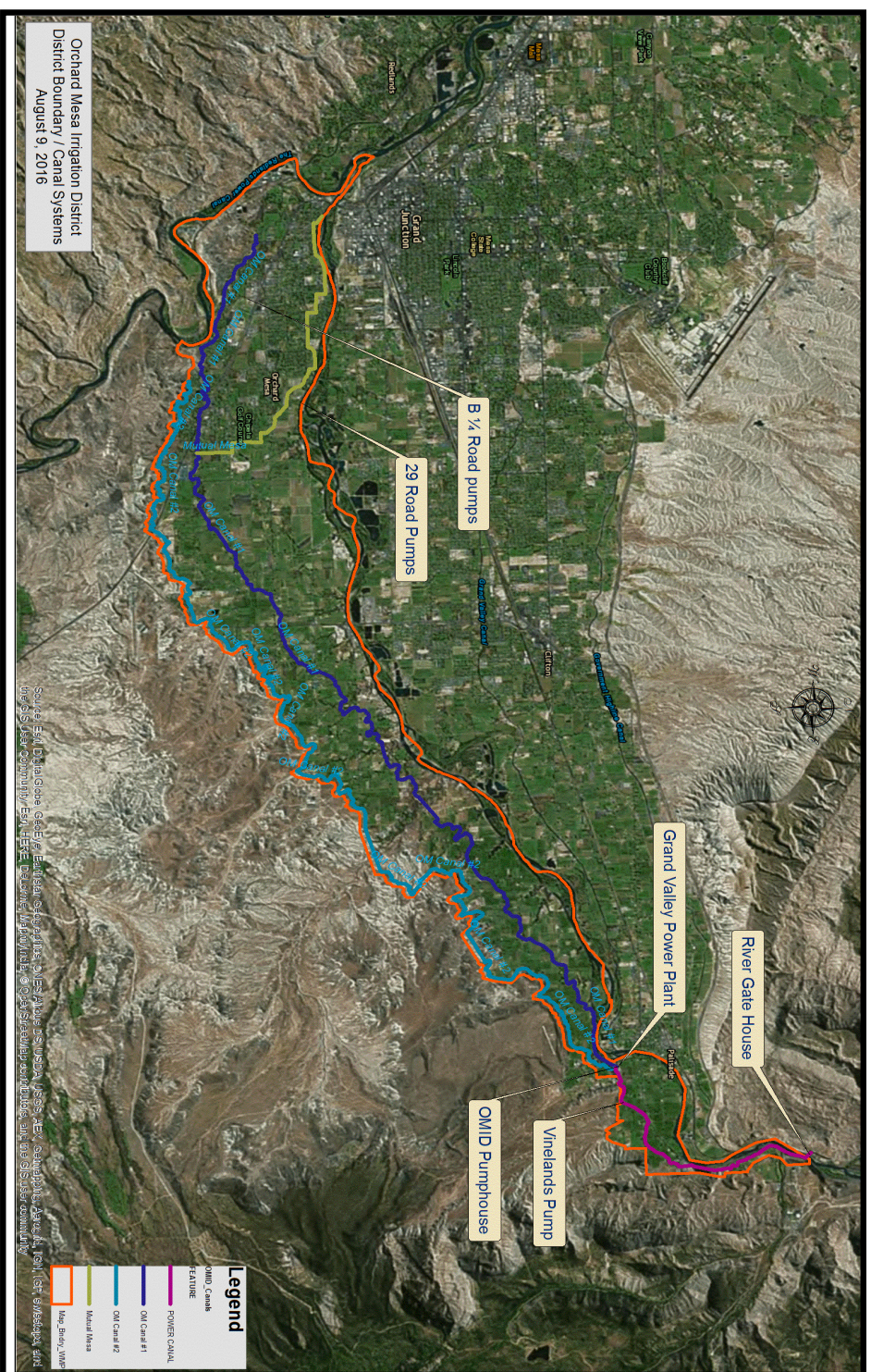


Figure 1.2 District Boundary Map

1.4 Previous Studies – The Project Sponsors have had various engineering firms evaluate the GVPP and provide engineering proposals and feasibility studies for plant rehabilitation/rebuild. Proposals received are listed in Table 1.2.

FIRM	Date	Type of Study
Electric Machinery Co.	December 2013	Alternative Presentation/Component Quote
AECOM		Feasibility Study
HDR	April 2015	Engineering Service Proposal
SGM	April 2015	Scoping Review
Watterra	April 2015	Statement of Qualifications
AECOM	April 2015	Technical Proposal
Sorenson Engineering	April 2015/2016	Feasibility Study/Rebuild Proposal

Table 1.2

All submitted proposals and studies have been focused on the rehabilitation of the existing plant. Some were comprised of a description of the GVPP along with a statement of qualifications. Others included general cost-estimates. The Sorenson Engineering Study is comprised of a more detailed study and is the basis for this Loan Feasibility Study.

2.0 Project Sponsor(s)

The fiscal and contractual responsibility for operation and maintenance of the GVPP lies equally with the Association and the District. The loan application and repayment responsibilities are equally shared by both entities. A more detailed description of the sponsors follows.

2.1 District – The Orchard Mesa Irrigation District was formed under the Colorado Irrigation District Law of 1903. In 1921, districts were given the option to be governed under the Irrigation District Law of 1921 (CRS 37-42-101 thru 141), which the District chose to do. The District is currently governed under the Irrigation District Law of 1921 and Article 43, Irrigation Districts of 1905, 1921 and Irrigation District Salinity Control Act (CRS 37-43-101 thru 211). The District was formed for the purpose of diverting, carrying and delivering irrigation water within the District’s boundaries.

The District became a division of the U. S. Bureau of Reclamation’s Grand Valley Project on March 19, 1921, through the Secretary of the Interior’s approval under the Interior Department Appropriation Act for 1923 (42 Stat. 584). The Act authorized federal money for the reconstruction of the Orchard Mesa Division.

The Board of Directors of the OMID is comprised of 5 members that serve for three years each with an election held each year. The Board of Directors is comprised of one member from each of the three regions and 2 at-large members. One regional board member and one at-large board member are elected each year. Except in the third year where only one regional board member is elected. The duty of the Board of Directors is to carry out the normal business function of the irrigation district including, but not limited, to hiring employees, levying assessments and entering into contracts. Assessments are reviewed annually and adjusted to meet budget demands as recommended by the District Manager and approved by the Board of Directors.

The District is a small irrigation district serving 9,500 acres and provides irrigation water to farms, vineyards, orchards, and subdivisions in the Grand Valley of Mesa County, east of the Town of Palisade, south of the Colorado River beginning at 39 1/2 Road. The northern boundary line follows the left bank of the Colorado River to the confluence of the Colorado and Gunnison Rivers near downtown Grand Junction, about 15 miles east of the GVPP. The southern boundary of the district is generally the OMID Canal #2. The population within the District is about 15,500 and the population of the Grand Valley as a whole is around 100,000.

The District provides irrigation water to approximately 9,800 parcels in Mesa County, on the western slope of Colorado. The District receives monies through an annual assessment of the water users that is collected by Mesa County with property taxes. The 2014 estimated receipts from the assessments total \$1,081,225.05. The OMID also receives interest income from cash reserves of about \$48,000 annually. The District had total revenue on December 31, 2014, of about \$1.9 Million.

The major crops grown in the District include alfalfa, orchards, vineyards, corn/grain, pasture, grass lawns, and truck gardens. Most vineyards are irrigated with micro-spray or drip systems; orchards with a combination of gated pipe or micro-spray or drip; alfalfa and corn with gated pipe. There are some concrete and earthen siphon tube ditch systems.

2.2 Association – The Grand Valley Project was one of the first six projects to be authorized by the Reclamation Act of June 17 1902 and the Grand Valley Water Users Association (Association or GVWUA) was officially formed in 1905. It is a private incorporated not-for-profit ditch company. The Association is the managing entity for the majority of the federally owned Grand Valley Project. These Grand Valley Project facilities include the Grand Valley Diversion Dam and headworks, also known as the Roller Dam or Cameo Diversion, on the Colorado River in DeBeque Canyon; the Canyon Canal through DeBeque Canyon; the 55-mile-long Government Highline Canal; 150 miles of project operated laterals; 100 miles of drainage ditches; and the GVPP. In recent years, approximately 130 miles of the laterals have been re-constructed into pressure piped laterals.

Governance and Organizational Structure – The Association is governed by a landowner-elected, eleven member Board of Directors that has the following primary powers as outlined in Article IX of their Articles of Incorporation and identified in Section VI of their bylaws. (see attachments):

1. To enter into contracts and agreements
2. To borrow and incur debt and to issue bonds
3. To acquire, dispose of and encumber real and personal property
4. To appoint, hire, and retain agents, employees, engineers, and attorneys
5. To fix fees, rates, tolls, penalties or charges for service and to effectuate liens on property for service provided
6. To furnish services and facilities
7. To adopt and amend bylaws, rules and regulations
8. The collection of revenue

GVWUA first delivered water in 1917 to Reclamation's Grand Valley Project and since then has furnished a full supply of irrigation water to approximately 1,800 water users on 23,500 irrigated acres under the Government Highline Canal and 15,000 irrigated acres under the Mesa County, Palisade, and Orchard Mesa Districts and diverts the water for the Grand Valley Power Plant year round.

Water for the GVPP is diverted at the Roller Dam, flows through the Canyon Canal and is diverted to the District's Power Canal along with the District's irrigation water at the mouth of what's known as Tunnel No. 3. Water flows under the Colorado River through a 12 ft diameter pipe and is delivered to the GVPP and the District's irrigation pumping plant through the 4-mile-long Power Canal.

The District and Association share in the cost of the Canyon Canal operation under a 1955 agreement at 71.6% and 28.4%, respectively. The Association undertakes daily operation of the Roller Dam and Canyon Canal while day-to-day operation of the GVPP and other OMID facilities are carried out by the District. Each entity contributes 50% of the cost of operation and maintenance of the GVPP.

Revenue for Association operations is collected through assessments that are billed in December for the upcoming irrigation season based on allotments for individual parcels of land. Any excess usage of water from the previous season is included on the December bill. Similar to the District, the Association assessments are budget driven, recommended by the Association General Manager and approved by a vote of the Board of Directors. Revenue collected by the Association from annual assessments totals a little over \$1M per year.

Major crops served by the Association include corn, dry beans, alfalfa, grass hay, pasture, small grain and seed crops, fruits, vegetables and a variety of truck crops.

3.0 Water Rights

The water for the GVPP is diverted from the Colorado River at the Roller Dam and is a part of what's known as the "Cameo Call." The Cameo Call along with water rights of the Shoshone Hydropower Plant upstream in Glenwood Canyon, control administration of the Colorado River basin within Colorado. The flows generated by the "Cameo Call" help provide water for recreational activities, environmental benefits, irrigation, power production, some domestic water, and aesthetics along the entire Colorado River. Flows generated by the Cameo Call also help to fulfill the State of Colorado's obligations under the Colorado River Compact and in maintaining water levels in Lake Powell. Water rights that comprise the Cameo Call are designated for irrigation, power production, and domestic use.

The GVPP is located at the beginning of the 15 Mile Reach designated as critical habitat and provides the legal mechanism to deliver surplus water from Green Mountain Reservoir for the endangered fish. Water rights for the GVPP are owned by the United States and put to beneficial use by the Association and District through the LOPP. The maximum water right of 800 cfs has an appropriation date of February 27, 1908, and was adjudicated in 1934. Depending on conditions, the Power Canal has a capacity of up to 800 cfs. Typically, during irrigation season up to 400 cfs may be used for power production while the remainder is used to power the hydraulic pumps delivering water to the District's irrigation canals. During the non-irrigation season, up to the Power Canal's capacity of about 800 cfs may be diverted solely for power production. Table 3.1 summarizes the water rights tied to the Cameo Diversion at the Roller Dam.

Owner	Amount (cfs)	Adjudication Date	Appropriation Date	Use
GVWUA/U.S.	730	7/22/1912	2/27/1908	Irrigation
GVWUA/U.S.	400/800	1934	2/27/1908	Hydro-electric power
GVWUA/U.S.	220	7/25/1941	2/27/1908	Domestic & Livestock
OMID	450	7/22/1912	10/25/1907	Irrigation
OMID	10.2	7/22/1912	10/01/1900	Irrigation
Palisade Irrigation District	23.5	7/25/1941	06/01/1918	Irrigation
Palisade Irrigation District	80	7/22/1912	10/01/1889	Irrigation
Mesa County Irrigation District	40	7/22/1912	07/06/1903	Irrigation

Table 3.1

Figure 3.1 is a conceptual flowchart used by the Grand Valley irrigation entities to describe typical water distribution in the Grand Valley for diversions from the Colorado River based on the current facility capacities, not necessarily the actual water rights.

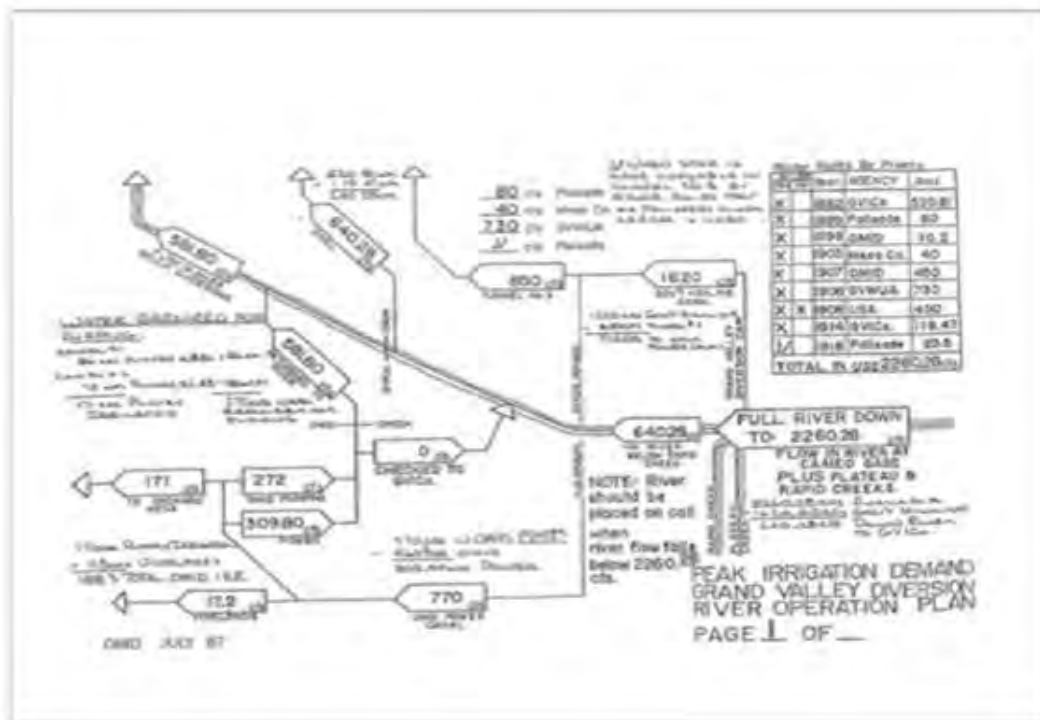


Figure 3.1

Accurate continuous flow data through the GVPP is not available at this time. However, the Division 5 Office of the Colorado Department of Water Resources has confirmed data for 2006, 2007, 2014 and 2015. Figure 3.2 shows a comparison of the monthly flows through the GVPP between 2006 and 2007 averages as compared with the average of 2014 and 2015.

Water allocations for both the District and Association water users are tied to the land parcels within each entities boundaries and cannot be sold or transferred outside of such.

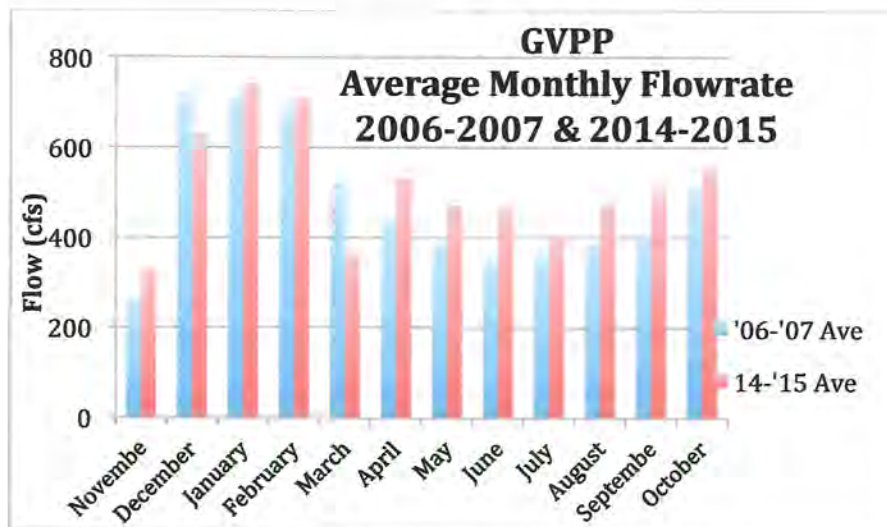


Figure 3.2

4.0 Project Description

4.1 General - The Grand Valley Hydroelectric Power Plant is owned by the United States (U.S. Bureau of Reclamation) and operated and maintained by the District and the Association under a Lease of Power Privilege (LOPP). Under the LOPP the Association and the District, assumed the operation and maintenance of the Grand Valley Powerplant and committed to operate and maintain it for the term of the LOPP, at their own expense. The annual lease payments to Reclamation started at \$0.03 per KWh in 2011 with a 3% annual escalator.

The GVPP was completed and put into service in 1933 and since that time little to no upgrades or modernization has occurred. It is currently operating in an inefficient and deteriorating state. The objective of the District and Association is to restore the facility to an economically and operationally sustainable condition.

Under current operations, when the plant is operable, the “water-to-wire” efficiency is estimated at 54%. The rebuild/upgrade recommendation is to increase the maximum generation output from 2.5 MW to 4.1 MW. This will not require additional flows. The increased generation is a result of the planned increase in turbine and generator efficiencies. Due to the current interconnect and power sales agreement, the maximum production is limited to 3.5 MW. This can be increased in the future by amending the current Power Purchase Agreement (PPA) and Interconnection Agreement to increase the maximum allowable output to 4.1 MW. The potential “water-to-wire” efficiency with the proposed upgrades is about 82.5%.

Under existing conditions, the average annual production and revenue are 11,000 MWHrs and \$450,000. After the plant rebuild, the average annual production and

revenue will be approximately 17,000 MWHrs and \$675,000 with potential for additional revenue.

The plant rebuild is estimated at \$5,200,000. The District and Association are requesting a loan amount of \$4.0M which would act as a interim construction loan until the District and Association secure grant funding. The Project Sponsors are seeking grants from a variety of sources and if successful would reduce the loan amount to \$1.5M to \$2.0M.

4.2 Analysis of Alternatives – Basically the District and Association are comparing the presented rebuild alternative to the no-action alternative. At the time of this writing, one of the two units is inoperable and is being disassembled for a possible rebuild. The District and Association have cautiously operated the plant since accepting assignment of the LOPP. The GVPP is in such a state of disrepair left by Public Service Company's lack of upgrades and maintenance that the District and Association are left with two options; either rebuild the plant to modern day standards or continue to operate the plant until it can no longer function. The District and Association are committed to fulfill their obligations under the LOPP that benefit all users who enjoy the Colorado River in its present condition. Therefore they are pushing forward with the goal of rebuilding the GVPP to benefit generations to come.

4.2.1.1 Output/Current Production – Sorenson Engineering has taken physical measurements to determine actual net head and generation unit efficiencies at various flows. The flow data, net head, and generation unit efficiencies were used to produce the current production model. The current production model summary is shown in Table 4.1. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*).

Existing Conditions Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
1997	1,975	1,789	864	1,113	913	837	734	928	875	1,145	662	1,801	13,636
1998	1,914	1,730	895	998	877	793	726	871	921	1,102	906	1,914	13,647
1999	1,962	1,774	885	906	912	883	792	853	911	1,063	631	1,915	13,487
2000	1,862	1,722	803	747	818	657	435	172	148	1,074	695	1,960	11,095
2001	1,953	1,772	618	806	941	622	361	844	829	759	808	1,893	12,205
2002	1,908	1,723	1,559	934	830	644	446	384	545	690	756	1,831	12,248
2003	1,814	1,611	822	763	955	822	767	374	843	1,115	612	393	10,890
2004	0	0	83	909	896	720	762	647	736	944	214	0	5,911
2005	0	0	114	958	944	809	861	831	898	1,012	305	1,823	8,556
2006	1,734	1,458	901	1,002	934	762	865	821	920	950	477	1,738	12,562
2007	1,761	1,568	891	1,021	1,029	848	904	942	1,110	968	0	0	11,044
2008	0	0	216	921	968	873	950	940	905	1,143	451	1,979	9,346
2009	1,973	926	700	1,080	926	900	927	895	896	1,051	637	1,820	12,730
2010	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
2011	848	306	1,099	934	967	838	915	887	918	1,120	0	1,211	10,043
2012	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
2013	372	600	819	329	820	835	740	859	931	1,153	36	1,203	8,697
2014	1,797	1,622	785	880	898	896	899	1,066	1,045	1,110	1,201	1,919	14,118
Average	1,377	1,247	875	909	845	671	766	758	847	974	524	1,543	11,336

Table 4.1

4.2.1.2 Output/Upgraded Production – The upgraded recommendations allow for the new units to produce a maximum of 4.1 MW. Due to the current interconnect and power sales contracts, the maximum allowable production is limited to 3.5 MW. The capital cost for the extra 600 KW capacity is a very low cost and provides additional generation potential if the current power sales and interconnection agreements are amended. It also provides increased generation potential in 5 years after the current power sales agreement expires.

If the recommended upgrades were installed at the time of the physical measurements, the total output would have been 4.1 MW instead of 2.7 MW with a flow of 800 cfs.

An upgraded production model was created using the following upgraded parameters.

1. New turbine efficiencies
2. New generator efficiencies
3. Increased generator capacities, 2.05 MW each. The combined total production is limited to a total output of 3.5 MW due to the limitations of the current Interconnect and PPA.

The upgraded 3.5 MW production model summary is shown in Table 4.2. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*).

3.5 MW Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
1997	2,604	2,352	1,255	1,738	1,421	1,322	1,145	1,463	1,339	1,787	1,032	2,384	19,842
1998	2,604	2,352	1,333	1,555	1,405	1,264	1,136	1,393	1,436	1,722	1,260	2,604	20,064
1999	2,604	2,352	1,319	1,411	1,401	1,397	1,252	1,362	1,405	1,659	874	2,520	19,557
2000	2,520	2,436	1,227	1,165	1,263	1,037	678	269	230	1,675	959	2,604	16,064
2001	2,604	2,352	930	1,258	1,467	986	572	1,334	1,298	1,202	1,143	2,604	17,750
2002	2,604	2,352	2,390	1,463	1,322	1,007	680	559	842	1,082	1,098	2,604	18,003
2003	2,604	2,352	1,238	1,198	1,498	1,312	1,208	589	1,289	1,742	954	613	16,597
2004	0	0	130	1,400	1,432	1,127	1,198	1,012	1,163	1,457	317	0	9,236
2005	0	0	182	1,501	1,479	1,291	1,378	1,325	1,427	1,577	453	2,604	13,218
2006	2,604	2,309	1,414	1,562	1,480	1,203	1,382	1,305	1,443	1,482	726	2,602	19,513
2007	2,602	2,352	1,400	1,593	1,605	1,353	1,429	1,466	1,734	1,512	0	0	17,047
2008	0	0	334	1,437	1,496	1,355	1,494	1,486	1,395	1,785	642	2,604	14,028
2009	2,604	1,260	1,077	1,687	1,435	1,429	1,473	1,431	1,378	1,641	887	2,588	18,891
2010	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
2011	1,315	420	1,540	1,456	1,505	1,316	1,455	1,420	1,417	1,747	0	1,596	15,187
2012	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
2013	583	937	1,296	505	1,270	1,336	1,162	1,341	1,439	1,800	56	1,680	13,384
2014	2,518	2,322	1,074	1,393	1,374	1,421	1,438	1,671	1,629	1,729	1,686	2,604	20,858
Average	1,948	1,730	1,274	1,399	1,320	1,061	1,211	1,194	1,314	1,520	755	2,107	16,832

Table 4.2

4.2.1.3 Additional Upgrade Potential – The current Interconnection Agreement allows for a maximum production of 3.5MW. An amendment would require an interconnection study and an interconnection rebuild. The estimated cost of the interconnect study is \$20,000 and the cost of the actual rebuild could vary between \$150,000 to \$400,000.

In order to fully exercise the increased power potential of up to 4.1 MW the Power Purchase Agreement would need to be amended, as well. The current power sales contract has about 4 years remaining. The 4.1 MW potential production model is shown below in Table 4.3. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*).

4.1 MW Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
1997	3,025	2,734	1,337	1,738	1,421	1,322	1,145	1,463	1,339	1,787	1,032	2,762	21,104
1998	2,996	2,709	1,396	1,555	1,405	1,264	1,136	1,393	1,436	1,722	1,397	2,987	21,395
1999	3,019	2,729	1,373	1,411	1,401	1,397	1,252	1,362	1,405	1,659	969	2,928	20,907
2000	2,897	2,743	1,257	1,165	1,263	1,037	678	269	230	1,675	1,068	3,018	17,302
2001	3,013	2,729	955	1,258	1,467	986	572	1,334	1,298	1,202	1,267	2,979	19,060
2002	2,990	2,687	2,474	1,463	1,322	1,007	680	559	842	1,082	1,203	2,920	19,228
2003	2,898	2,580	1,292	1,198	1,498	1,312	1,208	589	1,289	1,742	954	613	17,173
2004	0	0	130	1,400	1,432	1,127	1,198	1,012	1,163	1,457	330	0	9,249
2005	0	0	182	1,501	1,479	1,291	1,378	1,325	1,427	1,577	480	2,893	13,533
2006	2,773	2,312	1,417	1,562	1,480	1,203	1,382	1,305	1,443	1,482	756	2,772	19,889
2007	2,809	2,504	1,400	1,593	1,605	1,353	1,429	1,466	1,734	1,512	0	0	17,406
2008	0	0	334	1,437	1,496	1,355	1,494	1,486	1,395	1,785	697	3,026	14,504
2009	3,024	1,447	1,097	1,687	1,435	1,429	1,473	1,431	1,378	1,641	982	2,869	19,893
2010	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
2011	1,330	482	1,739	1,456	1,505	1,316	1,455	1,420	1,417	1,747	0	1,854	15,721
2012	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
2013	582	944	1,302	505	1,270	1,336	1,162	1,341	1,439	1,800	56	1,904	13,641
2014	2,816	2,529	1,209	1,393	1,374	1,421	1,438	1,671	1,629	1,729	1,849	2,986	22,043
Average	2,151	1,943	1,363	1,418	1,320	1,061	1,211	1,194	1,314	1,520	814	2,399	17,707

Table 4.3

4.2.2 Costs – The capital cost estimate for the recommended plant upgrade is approximately \$5.2 M under a design-build scenario. Quotes from suppliers and contractors have been obtained and are included in the capital cost estimate shown in Table 4.4. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*). A high contingency of 20% is used due to the nature of a plant rebuild (possible increase in scope of work). Additional contingency items could include interconnect study, and interconnect.

Capital Cost, Grand Valley Hydro Rebuild					
Item #	Description	Units	#Units	Unit Price	Total
1	New HDPE Plastic Trash Rack (installation included)	Sq. Ft	450	\$90	\$40,500
2	Tailrace Excavation	Lump Sum	1	\$30,000	\$30,000
3	Generator Rewind & Misc. Mechanical Supply/Install Riverside Inc.	Lump Sum	1	\$1,166,714	\$1,166,714
4	Penstock, Scroll Case, and Draft Tube sandblast & repaint	Lump Sum	1	\$106,640	\$106,640
5	Automatic Trash Chute Gates	Lump Sum	1	\$30,000	\$30,000
6	Turbine Supply - Far East Power Equipment	Lump Sum	1	\$816,000	\$816,000
7	Plant Electric & Substation - Caribou Construction (with refurbished transformer)	Lump Sum	1	\$1,129,000	\$1,129,000
8	Control/Switchgear Supply & Onsite Start-up Service Bat Electric	Lump Sum	1	\$515,000	\$515,000
9	Civil, Mechanical, and Electrical Engineering Project Management, Surveying, Loan, and PPA assistance Sorenson Engineering	Lump Sum	1	\$350,000	\$350,000
10	XCEL Energy Costs??	Lump Sum	1	\$50,000	\$50,000
	Subtotal				\$4,233,854
11	Contingency	%	22%	\$917,899.55	\$917,899.55
12	CWCB Loan Service Fee	%	1	\$51,517.54	\$51,517.54
14	Total Estimated Cost (w/Contingency)				\$5,203,271

Table 4.4

Annual Costs – A CWCB loan of \$4.0M for 77% principal at 2% interest for 30 years would yield an annual loan payment of about \$178,000. After successful grant acquisitions, alternate financing plans would entail a CWCB loan of \$2.0M, 62% principal at 2%, 30 years and an annual payment of \$89,300 or \$1.5M, for 29% principal at 2% for 30 years yielding an annual payment of \$67,371. Tables 4.5 A, B, and C show three different loan scenarios. Equity is considered to be funding obtained through alternate sources such as grants and sponsor funds, if needed.

Grand Valley Rebuild Loan	
Capital Cost	\$ 5,203,000
Sponsors' Equity	23%
Equity	\$ 1,203,000
Buydown	\$ -
Loan Principal	\$ 4,000,000
Loan Term (years)	30
Interest Rate	2.00%
Annual Loan Payment	\$ 178,600

Table 4.5A

Grand Valley Rebuild Loan	
Capital Cost	\$ 5,203,000
Sponsor's Equity	62%
Equity	\$ 3,203,000
Buydown	\$ -
Loan Principal	\$ 2,000,000
Loan Term (years)	30
Interest Rate	2.00%
Annual Loan Payment	\$ 89,300

Table 4.5B

Grand Valley Rebuild Loan	
Capital Cost	\$ 5,203,000
Sponsor's Equity	71%
Equity	\$ 3,703,000
Buydown	\$ -
Loan Principal	\$ 1,500,000
Loan Term (years)	30
Interest Rate	2.00%
Annual Loan Payment	\$ 66,975

Table 4.5C

The first year annual operation and maintenance cost is estimated at \$200,000. This includes boiler/machinery and business interruption insurance, labor, scheduled and unscheduled plant maintenance, and costs associated with delivering water to the plant. See Table 4.6.

Grand Valley O&M Expenses	
Labor	\$40,000
Insurance	15,000
Scheduled Maintenance	10,000
Unscheduled Maintenance	8,000
Subtotal (O&M)	\$73,000
GVWUA water delivery expenses	\$63,500
OMID water delivery expenses	\$63,500
Subtotal (delivery expenses)	\$127,000
Total O&M Expenses	\$200,000

Table 4.6

The total first year annual projected cost would then be the sum of the total O&M expenses, loan payment, lease of power privilege, and depreciation as shown in Table 4.7 below.

Total First Year Annual Cost					
	O&M	Loan Payment	LOPP Payment	Depreciation	Total First Year Cost
\$4.0 Loan	\$200,000	\$178,600	\$60,297	\$50,000	\$488,897
\$2.0 Loan	\$200,000	\$89,300	\$60,297	\$50,000	\$399,597
\$1.5 Loan	\$200,000	\$66,975	\$60,297	\$50,000	\$377,272

Table 4.7

4.2.3 Impacts Comparison – The no-action alternative will result in increased outages and longer delays in repairs. The plant will likely get to the point of inoperableness. The legal agreements to deliver water to the 15 Mile Reach would come into jeopardy.

The recommended alternative will not require new water rights or new infrastructure. The new switching and control equipment can be housed in the current building and land footprints.

The clean renewable energy from this hydro-electric plant will likely offset production of a coal-fired power plant. The production of 17,000,000 KWHrs annually will eliminate approximately 36,000,000 pounds of CO₂, 30,000 pounds of NO_x, and 65,000 pounds of SO₂ emissions into the environment annually.

4.2.4 Economics – The economic analysis and feasibility is shown in Table 4.8A, 4.8B and 4.8C. Table 4.8A depicts the \$4.0M loan scenario, Table 4.8B the \$2.0M scenario and Table 4.8C the \$1.5M scenario. The current PPA rates from XCEL (\$40 per MWhr) are used until December 31, 2020, at which time the rate is assumed to be \$30 per MWhr through the end of the study period (2046). Average annual O&M expenses are assumed to increase at 2% annually. Power plant capacity is

conservatively assumed to be 3.5 MW. LOPP costs escalate at 3% annually. Table 4.8D shows the \$1.5M loan scenario with a 30 year term, 2% interest rate, a non-escalating LOPP rate of \$0.004, and a PPA price of \$40 per MWhr. This is a much more cost-effective scenario.

3.5MW Economic Pro Forma, Grand Valley Hydro-\$4.0M 30 yrs at 2% Average/low/high 23% Equity																		
Year	Price per MWhr	Average Annual Generation (MWhr)	Low Year Generation (2004)	High Year Generation (2014)	Average Annual Gross Revenue	Low Year Gross Revenue (2004)	High Year Gross Revenue (2014)	Annual Loan Payment	Annual Operations & Maintenance	Capital Replacement Costs	BOR Levy (\$/KWhr)	Average Year BOR Lease Payment	Low Year BOR Lease Payment	High Year BOR Lease Payment	CWCB Loan Reserve Fund	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	High Year Annual Net Revenue (2014)
2017	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$178,600	\$200,000	\$50,000	\$0.004	\$60,297	\$50,209	\$74,716	\$17,860	\$166,547	\$81,845	\$313,133
2018	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$178,600	\$204,000	\$50,000	\$0.004	\$62,106	\$51,775	\$76,957	\$17,860	\$160,738	\$76,339	\$306,892
2019	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$178,600	\$202,980	\$50,000	\$0.004	\$63,869	\$53,266	\$79,266	\$17,860	\$154,794	\$70,708	\$300,503
2020	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$178,600	\$212,482	\$50,000	\$0.004	\$65,888	\$54,884	\$81,644	\$17,860	\$148,714	\$64,548	\$293,964
2021	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$216,886	\$50,000	\$0.004	\$67,865	\$56,510	\$84,093	\$17,860	\$325,833	\$81,106	\$78,692
2022	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$220,816	\$50,000	\$0.004	\$69,901	\$58,206	\$86,616	\$17,860	\$321,999	\$87,131	\$71,840
2023	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$225,332	\$50,000	\$0.004	\$71,998	\$59,952	\$89,214	\$17,860	\$328,712	\$93,294	\$64,825
2024	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$229,737	\$50,000	\$0.004	\$74,158	\$61,750	\$91,891	\$17,860	\$45,577	\$99,597	\$67,644
2025	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$234,332	\$50,000	\$0.005	\$76,382	\$63,603	\$94,647	\$17,860	\$52,197	\$106,044	\$50,292
2026	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$239,019	\$50,000	\$0.005	\$78,674	\$65,511	\$97,487	\$17,860	\$59,175	\$112,639	\$42,766
2027	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$243,999	\$50,000	\$0.005	\$81,034	\$67,476	\$100,412	\$0	\$48,455	\$119,385	\$52,921
2028	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$248,675	\$50,000	\$0.005	\$83,465	\$69,501	\$103,424	\$0	\$55,762	\$126,285	\$45,033
2029	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$253,648	\$50,000	\$0.005	\$85,969	\$71,586	\$106,527	\$0	\$63,240	\$133,343	\$36,957
2030	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$258,721	\$50,000	\$0.005	\$88,548	\$73,733	\$109,722	\$0	\$70,892	\$140,564	\$28,688
2031	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$263,966	\$50,000	\$0.005	\$91,205	\$75,945	\$113,014	\$0	\$78,723	\$147,950	\$20,222
2032	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$269,174	\$50,000	\$0.006	\$93,941	\$78,224	\$116,404	\$0	\$86,737	\$155,507	\$11,554
2033	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$274,557	\$50,000	\$0.006	\$96,759	\$80,570	\$119,897	\$0	\$94,938	\$163,237	\$2,678
2034	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$280,048	\$50,000	\$0.006	\$99,682	\$82,987	\$123,494	\$0	\$103,332	\$171,145	\$8,410
2035	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$285,649	\$50,000	\$0.006	\$102,652	\$85,477	\$127,198	\$0	\$111,923	\$179,236	\$15,716
2036	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$291,382	\$50,000	\$0.006	\$105,731	\$88,041	\$131,014	\$0	\$120,716	\$187,513	\$25,245
2037	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$297,189	\$50,000	\$0.006	\$108,903	\$90,683	\$134,945	\$0	\$129,715	\$195,981	\$35,002
2038	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$303,133	\$50,000	\$0.007	\$112,170	\$93,403	\$138,993	\$0	\$138,926	\$204,646	\$44,995
2039	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$309,186	\$50,000	\$0.007	\$115,535	\$96,205	\$143,163	\$0	\$148,353	\$213,510	\$55,227
2040	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$315,980	\$50,000	\$0.007	\$119,001	\$99,091	\$147,458	\$0	\$158,003	\$222,581	\$65,706
2041	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$321,687	\$50,000	\$0.007	\$122,571	\$102,064	\$151,881	\$0	\$167,881	\$231,861	\$76,437
2042	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$328,121	\$50,000	\$0.008	\$126,248	\$105,126	\$156,438	\$0	\$177,992	\$241,357	\$87,427
2043	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$334,684	\$50,000	\$0.008	\$130,036	\$108,280	\$161,131	\$0	\$188,342	\$251,073	\$98,683
2044	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$341,377	\$50,000	\$0.008	\$133,937	\$111,528	\$165,965	\$0	\$198,937	\$261,015	\$110,210
2045	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$348,205	\$50,000	\$0.008	\$137,955	\$114,874	\$170,944	\$0	\$209,782	\$271,188	\$122,012
2046	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$178,600	\$355,169	\$50,000	\$0.008	\$142,094	\$118,320	\$176,072	\$0	\$220,885	\$281,599	\$134,109

Table 4.8A

3.5 MW Economic Pro Forma, Grand Valley Hydro-\$2.0M 30 yrs at 2% Average/low/high 62% Equity																		
Year	Price per MWh	Average Annual Generation (MWh)	Low Year Generation (2004)	High Year Generation (2014)	Average Annual Gross Revenue	Low Year Gross Revenue (2004)	High Year Gross Revenue (2014)	Annual Loan Payment	Annual Operations & Maintenance	Capital Replacement Costs	BOR Levy (\$/KWh)	Average Year BOR Lease Payment	Low Year BOR Lease Payment	High Year BOR Lease Payment	CWCB Loan Reserve Fund	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	High Year Annual Net Revenue (2014)
2017	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$89,300	\$200,000	\$50,000	\$0.004	\$60,297	\$50,209	\$74,716	\$8,930	\$264,776	\$171,145	\$411,363
2018	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$89,300	\$204,000	\$50,000	\$0.004	\$62,106	\$51,715	\$76,957	\$8,930	\$258,967	\$166,639	\$406,122
2019	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$89,300	\$208,080	\$50,000	\$0.004	\$63,969	\$53,266	\$79,266	\$9,930	\$253,024	\$160,007	\$396,733
2020	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$89,300	\$212,242	\$50,000	\$0.004	\$65,888	\$54,864	\$81,644	\$8,930	\$246,944	\$154,248	\$382,183
2021	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$216,466	\$50,000	\$0.004	\$67,865	\$56,510	\$84,093	\$9,930	\$242,966	\$85,994	\$316,922
2022	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$220,816	\$50,000	\$0.004	\$69,901	\$58,206	\$86,616	\$8,930	\$66,031	\$2,169	\$170,070
2023	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$225,232	\$50,000	\$0.004	\$71,998	\$59,952	\$89,214	\$9,930	\$59,517	\$3,994	\$163,055
2024	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$229,737	\$50,000	\$0.004	\$74,168	\$61,750	\$91,891	\$8,930	\$52,853	\$10,297	\$156,874
2025	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$234,332	\$50,000	\$0.005	\$76,382	\$63,603	\$94,647	\$9,930	\$46,033	\$16,744	\$148,522
2026	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$239,019	\$50,000	\$0.005	\$78,674	\$65,511	\$97,467	\$8,930	\$39,055	\$23,339	\$140,986
2027	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$243,799	\$50,000	\$0.005	\$81,045	\$67,476	\$100,412	\$0	\$40,845	\$30,085	\$142,221
2028	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$248,675	\$50,000	\$0.005	\$83,465	\$69,501	\$103,424	\$0	\$33,538	\$36,985	\$134,333
2029	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$253,646	\$50,000	\$0.005	\$85,969	\$71,586	\$106,527	\$0	\$26,060	\$44,044	\$126,257
2030	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$258,721	\$50,000	\$0.005	\$88,548	\$73,733	\$109,722	\$0	\$18,408	\$51,284	\$117,988
2031	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$263,896	\$50,000	\$0.005	\$91,205	\$75,945	\$113,014	\$0	\$10,577	\$58,651	\$109,522
2032	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$269,174	\$50,000	\$0.006	\$93,941	\$78,224	\$116,404	\$0	\$2,563	\$66,207	\$100,853
2033	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$274,557	\$50,000	\$0.006	\$96,759	\$80,570	\$119,897	\$0	\$5,639	\$73,937	\$91,978
2034	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$280,048	\$50,000	\$0.006	\$99,662	\$82,987	\$123,494	\$0	\$14,032	\$81,845	\$82,880
2035	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$285,649	\$50,000	\$0.006	\$102,652	\$85,477	\$127,198	\$0	\$22,623	\$89,936	\$73,564
2036	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$291,362	\$50,000	\$0.006	\$105,731	\$88,041	\$131,014	\$0	\$31,416	\$98,213	\$64,065
2037	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$297,169	\$50,000	\$0.006	\$108,803	\$90,683	\$134,945	\$0	\$40,415	\$106,662	\$54,297
2038	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$303,133	\$50,000	\$0.007	\$112,170	\$93,403	\$138,993	\$0	\$49,626	\$115,346	\$44,305
2039	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$309,186	\$50,000	\$0.007	\$115,535	\$96,205	\$143,163	\$0	\$59,054	\$124,211	\$34,073
2040	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$315,380	\$50,000	\$0.007	\$119,001	\$99,091	\$147,468	\$0	\$68,704	\$133,281	\$23,584
2041	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$321,687	\$50,000	\$0.007	\$122,571	\$102,064	\$151,881	\$0	\$78,581	\$142,567	\$12,863
2042	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$328,121	\$50,000	\$0.008	\$126,248	\$106,126	\$156,438	\$0	\$88,692	\$152,067	\$1,873
2043	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$334,684	\$50,000	\$0.008	\$130,036	\$108,280	\$161,131	\$0	\$99,042	\$161,773	\$9,383
2044	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$341,377	\$50,000	\$0.008	\$133,937	\$111,528	\$166,565	\$0	\$109,637	\$171,775	\$20,911
2045	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$348,205	\$50,000	\$0.008	\$137,955	\$114,874	\$170,944	\$0	\$120,482	\$181,888	\$32,717
2046	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$89,300	\$355,169	\$50,000	\$0.008	\$142,094	\$118,320	\$176,072	\$0	\$131,585	\$192,299	\$44,810

Table 4.8B

3.5 MW Economic Pro Forma, Grand Valley Hydro-\$1.5M 30 yrs at 2% Average/low/high 71% Equity																		
Year	Price per MWh	Average Annual Generation (MWh)	Low Year Generation (2004)	High Year Generation (2014)	Average Annual Gross Revenue	Low Year Gross Revenue (2004)	High Year Gross Revenue (2014)	Annual Loan Payment	Annual Operations & Maintenance	Capital Replacement Costs	BOR Levy (\$/MWh)	Average Year BOR Lease Payment	Low Year BOR Lease Payment	High Year BOR Lease Payment	CWCB Loan Reserve Fund	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	High Year Annual Net Revenue (2014)
2017	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$200,000	\$50,000	\$0.004	\$60,297	\$50,209	\$74,716	\$6,697	\$289,334	\$189,470	\$435,921
2018	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$204,000	\$50,000	\$0.004	\$62,106	\$51,716	\$76,957	\$6,697	\$283,525	\$187,984	\$429,679
2019	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$208,000	\$50,000	\$0.004	\$63,969	\$53,266	\$79,266	\$6,697	\$277,582	\$182,332	\$423,290
2020	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$212,242	\$50,000	\$0.004	\$65,888	\$54,864	\$81,644	\$6,697	\$271,501	\$176,573	\$416,751
2021	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$216,486	\$50,000	\$0.004	\$67,865	\$56,510	\$84,093	\$6,697	\$96,954	\$30,519	\$201,480
2022	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$220,816	\$50,000	\$0.004	\$69,391	\$58,208	\$86,616	\$6,697	\$90,588	\$24,494	\$194,627
2023	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$225,232	\$50,000	\$0.004	\$71,998	\$59,952	\$89,214	\$6,697	\$84,075	\$18,331	\$181,612
2024	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$229,737	\$50,000	\$0.004	\$74,158	\$61,750	\$91,891	\$6,697	\$77,410	\$12,028	\$180,431
2025	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$234,332	\$50,000	\$0.005	\$76,382	\$63,603	\$94,647	\$6,697	\$70,591	\$5,381	\$173,080
2026	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$239,019	\$50,000	\$0.005	\$78,674	\$65,511	\$97,487	\$6,697	\$63,613	-\$1,014	\$165,554
2027	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$243,799	\$50,000	\$0.005	\$81,034	\$67,476	\$100,412	\$0	\$63,170	-\$7,760	\$164,546
2028	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$248,675	\$50,000	\$0.005	\$83,465	\$69,501	\$103,424	\$0	\$55,863	-\$14,660	\$156,658
2029	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$253,648	\$50,000	\$0.005	\$85,969	\$71,586	\$106,527	\$0	\$48,385	-\$21,719	\$148,582
2030	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$258,721	\$50,000	\$0.005	\$88,548	\$73,733	\$109,722	\$0	\$40,733	-\$28,939	\$140,313
2031	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$263,896	\$50,000	\$0.005	\$91,205	\$75,945	\$113,014	\$0	\$32,902	-\$36,326	\$131,847
2032	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$269,174	\$50,000	\$0.006	\$93,941	\$78,224	\$116,404	\$0	\$24,888	-\$43,882	\$123,178
2033	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$274,557	\$50,000	\$0.006	\$96,759	\$80,570	\$119,897	\$0	\$16,686	-\$51,612	\$114,303
2034	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$280,048	\$50,000	\$0.006	\$99,662	\$82,987	\$123,494	\$0	\$8,293	-\$59,520	\$105,215
2035	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$285,649	\$50,000	\$0.006	\$102,652	\$85,477	\$127,198	\$0	-\$298	-\$67,611	\$95,309
2036	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$291,362	\$50,000	\$0.006	\$105,731	\$88,041	\$131,014	\$0	-\$9,091	-\$75,888	\$86,390
2037	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$297,189	\$50,000	\$0.006	\$108,903	\$90,683	\$134,945	\$0	-\$18,090	-\$84,367	\$76,622
2038	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$303,133	\$50,000	\$0.007	\$112,170	\$93,403	\$138,993	\$0	-\$27,301	-\$93,021	\$66,630
2039	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$309,196	\$50,000	\$0.007	\$115,535	\$96,205	\$143,163	\$0	-\$36,729	-\$101,866	\$56,398
2040	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$315,380	\$50,000	\$0.007	\$119,001	\$99,091	\$147,458	\$0	-\$46,379	-\$110,966	\$46,919
2041	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$321,687	\$50,000	\$0.007	\$122,571	\$102,064	\$151,881	\$0	-\$56,256	-\$120,286	\$35,188
2042	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$328,121	\$50,000	\$0.008	\$126,248	\$105,126	\$156,438	\$0	-\$66,367	-\$129,732	\$24,197
2043	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$334,684	\$50,000	\$0.008	\$130,036	\$108,280	\$161,131	\$0	-\$76,717	-\$139,448	\$12,942
2044	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$341,377	\$50,000	\$0.008	\$133,937	\$111,528	\$165,965	\$0	-\$87,312	-\$148,390	\$1,414
2045	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$348,205	\$50,000	\$0.008	\$137,965	\$114,874	\$170,944	\$0	-\$98,157	-\$159,563	-\$10,392
2046	\$30.00	16,833	14,016	20,858	\$504,977	\$420,490	\$625,731	\$66,975	\$355,169	\$50,000	\$0.008	\$142,094	\$118,320	\$176,072	\$0	-\$109,260	-\$169,974	-\$22,486

Table 4.8C

3.5MW Economic Pro Forma, Grand Valley Hydro-\$1.5M 30 yrs at 2% Average/low/high 71% Equity \$40/MW power and Flat Lease Rate																		
Year	Price per MWhr	Average Annual Generation (MMWh)	Low Year Generation (2004)	High Year Generation (2014)	Average Annual Gross Revenue	Low Year Gross Revenue (2004)	High Year Gross Revenue (2014)	Annual Loan Payment	Annual Operations & Maintenance	Capital Replacement Costs	BOR Levy (\$/KWh)	Average Year BOR Lease Payment	Low Year BOR Lease Payment	High Year BOR Lease Payment	CWCB Loan Reserve Fund	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	High Year Annual Net Revenue (2014)
2017	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$200,000	\$50,000	\$0.004	\$60,297	\$50,209	\$74,716	\$6,697	\$289,334	\$193,470	\$435,921
2018	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$204,000	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$278,300	\$183,613	\$423,205
2019	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$208,080	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$274,220	\$179,533	\$419,125
2020	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$212,242	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$270,059	\$175,372	\$414,964
2021	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$216,486	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$265,814	\$171,127	\$410,719
2022	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$220,816	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$261,484	\$166,797	\$406,389
2023	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$225,232	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$257,068	\$162,381	\$401,973
2024	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$229,737	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$252,565	\$157,876	\$397,468
2025	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$234,332	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$247,969	\$153,282	\$392,874
2026	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$239,019	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$6,697	\$243,282	\$148,585	\$388,167
2027	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$243,799	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$245,199	\$143,815	\$390,104
2028	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$248,675	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$240,323	\$138,939	\$385,228
2029	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$253,648	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$235,380	\$133,965	\$380,255
2030	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$258,721	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$230,277	\$128,892	\$375,182
2031	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$263,896	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$225,102	\$123,718	\$370,007
2032	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$269,174	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$219,824	\$118,440	\$364,729
2033	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$274,557	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$214,441	\$113,056	\$359,346
2034	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$280,048	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$208,990	\$107,565	\$353,855
2035	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$285,649	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$203,349	\$101,964	\$348,254
2036	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$291,362	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$197,636	\$96,261	\$342,641
2037	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$297,189	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$191,808	\$90,424	\$336,713
2038	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$303,133	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$185,866	\$84,460	\$330,770
2039	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$309,196	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$179,802	\$78,418	\$324,707
2040	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$315,380	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$173,618	\$72,234	\$318,523
2041	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$321,687	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$167,311	\$65,926	\$312,215
2042	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$328,121	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$160,877	\$59,492	\$305,782
2043	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$334,684	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$154,314	\$52,930	\$299,219
2044	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$341,377	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$147,621	\$46,236	\$292,526
2045	\$40.00	16,833	14,016	20,858	\$673,303	\$560,654	\$834,309	\$66,975	\$348,205	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$140,793	\$39,409	\$285,698
2046	\$40.00	16,833	14,016	20,868	\$673,303	\$560,654	\$834,309	\$66,975	\$355,169	\$50,000	\$0.004	\$67,330	\$56,065	\$83,431	\$0	\$133,829	\$32,445	\$278,734

Table 4.8D

4.2.5 Institutional Requirements – GVPP connects with XCEL Energy. The current interconnect contract allows for a maximum production of 3.5 MW. This will allow the project to increase the maximum output from the present 2.7 MW to 3.5 MW. The current Power Purchase Agreement (PPA) is also with XCEL Energy. The current power purchase price is \$40 per MWhr and is also limited to a maximum of 3.5 MW. The contract expires on December 31, 2020.

A renewable energy credit (REC) is an environmental commodity that represents the added value of the generation source being clean renewable energy. The Grand Valley Power Plant is producing RECs and under the current PPA, XCEL keeps the RECs. One REC is produced for every MWhr produced. The current market fluctuates between \$0.50 and \$1.00 per REC. With an average annual future production of nearly 17,000 MWhrs, an additional revenue of \$10,000-\$15,000 is potentially available but not included in the economic analysis.

As mentioned, the project is permitted through a LOPP with the Bureau of Reclamation. The annual lease payments started at \$0.03 per KWhr in 2011 with a 3% annual escalation factor. Under current Reclamation policy for new LOPP's, the lease rate is \$0.02 per KWhr for sponsor's responsible for Reclamation Project O&M repayment and \$0.03 for those who are not. Both incur an escalator commensurate with the non-seasonally adjusted United States city average consumer price index.

It is recommended that all of these agreements be amended or renegotiated to fit current economic, political, and environmental conditions.

Since the GVPP is owned by the United States a National Environmental Policy Act (NEPA) and historical analysis will be conducted. The project sponsors are currently working with Reclamation to complete NEPA compliance activities. Preliminary consultations with USFWL and the cultural inventory are complete. An MOA with the State Historic Preservation Officer (SHPO) is underway. A draft hazardous materials analysis is complete and draft report is in circulation.

4.3 Selected Alternative

4.3.1 Project Description, Conceptual Design Features, Lands – The project consists of an overall upgrade of the GVPP at a cost of \$5.2 M including 20% contingencies. The upgrade will include installation of a new HDPE trash rack; generator rewind with associated mechanical and electrical components; penstock, scroll case, and draft tube preparation and recoating; automatic trash chute gate design and installation; new turbine and installation; plant electrical and substation removal and reinstallation; control/switchgear supply and onsite start-up service; and required civil, mechanical, and electrical engineering along with project management, surveying, and PPA assistance. The lands occupied by the Project

Area are a combination of District and U.S. fee title land. Figure 4.1 depicts a more detailed map of the project area showing the landownership, penstocks, power plant, tailrace and other District facilities.



Figure 4.1

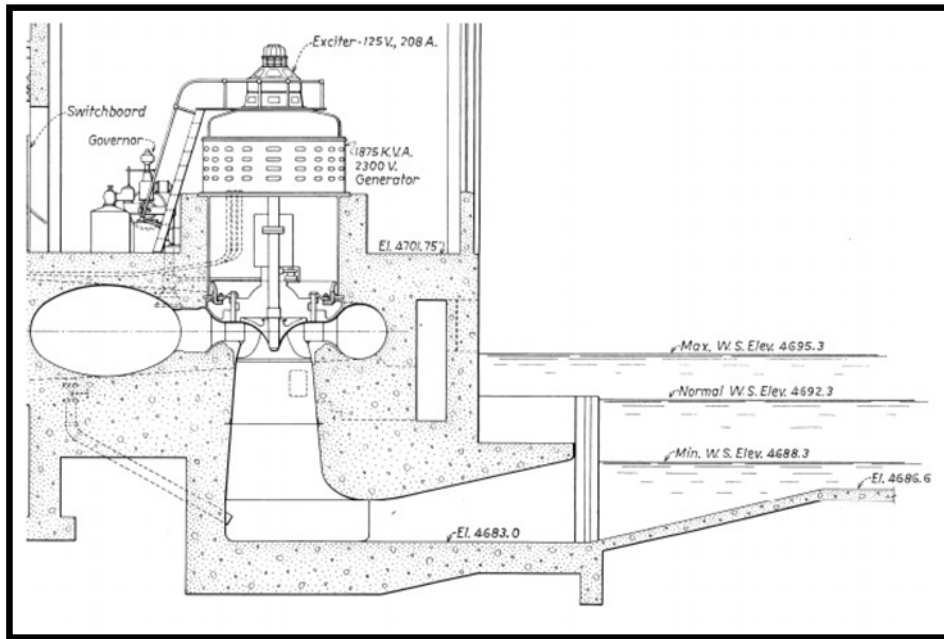


Figure 4.2 Plant Cross-Section

4.4 Cost Estimate The capital cost estimate for the recommended plant upgrade is approximately \$5.2M under a design-build scenario. Quotes from suppliers and contractors have been obtained and are included in the capital cost estimate shown in Table 4.9. (*Grand Valley Power Plant Feasibility Study, Sorenson Engineering, 2015*). A high contingency of 20% is used due to the nature of a plant rebuild (possible increase in scope of work). Additional contingency items considered include interconnect study, and physical interconnect.

Capital Cost, Grand Valley Hydro Rebuild					
Item #	Description	Units	#Units	Unit Price	Total
1	New HDPE Plastic Trash Rack (installation included)	Square Ft	450	\$90	\$40,500
2	Tailrace Dig Down	Lump Sum	1	\$30,000	\$30,000
3	Generator Rewind & Misc Mechanical Supply/Install Riveride Inc	Lump Sum	1	\$1,166,714	\$1,166,714
4	Penstock, Scroll Case, and Draft Tube sandblast and repaint	Lump Sum	1	\$106,640	\$106,640
5	Automatic Trash Chute Gates	Lump Sum	1	\$30,000	\$30,000
6	Turbine Supply Far East Power Equipment	Lump Sum	1	\$816,000	\$816,000
7	Plant Electrical & Substation Caribou Construction (w/ refurbished transformer)	Lump Sum	1	\$1,129,000	\$1,129,000
8	Control/Switchgear Supply & Onsite Start-up Service Bat Electric	Lump Sum	1	\$515,000	\$515,000
9	Civil, Mechanical, and Electrical Engineering Project Management, Surveying, Loan, and PPA assistance Sorenson Engineering	Lump Sum	1	\$350,000	\$350,000
10	XCEL Energy Costs??	Lump Sum	1	\$50,000	\$50,000
11	Colorado Water Conservation Board Loan Service Fee	%	2%	\$101,612	\$101,612
12	Contingency	%	20%	\$867,093	\$867,093
13	Estimated Cost				\$4,335,466
14	Total Estimated Cost (w/ Contingency)				\$5,202,559

Table 4.9

4.5 Implementation Schedule – The project sponsors plan to begin construction in the July of 2017 and be finished in one year’s time.

GRAND VALLEY HYDRO - ANTICIPATED PROJECT SCHEDULE

Item	Description	Anticipated Timeline
PHASE 1		
1	Selection of Engineering Firm	Apr-16
2	25% Design to Reclamation	Oct-16
3	Dismantle Unit #2 & Take Measurements	Jul-16
4	Release Turbine Design	Oct-16
5	Powerhouse Electrical & Substation Design	Oct-16
6	Prepartations to Order Controls & Switchgear	Oct-16
7	75% Design to Reclamation	Jan-17
PHASE 2		
8	Order Turbine*	Aug-17
9	Start Rewind of Unit #2	Sep-17
10	Pull Unit #1 & Start Rewind	Oct-17
11	Order Transformer/Materials, Caribou	Oct-17
12	Controls and Switchgear Assembly	Oct-17
13	Turbine Payment	Jan-18
14	Generators Rewind	Jan-18
15	Substation and Electrical Work by Caribou	Jan-18
17	100% Design to Reclamation	Jan-18
PHASE 3		
19	Generators Rewind	Feb-18
20	Substation and Electrical Work	Feb-18
22	Order and Install New Trash Rack	Mar-18
23	Recoat Penstocks	Mar-18
24	Engineering Project Management	Mar-18
25	Automatic Trash Chute Gates	Mar-18
26	Turbines Arrive at RSI	Apr-18
27	Reinstall Units with New HPU, Air Compressor, Sump Pumps, etc.	Apr-18 to May-18
28	Controls and Switchgear arrive	May-18
29	Start up the Facility	May-18
30	Online	Jun-18
31	Contingency	Jul-18

Table 4.10

4.6 Impacts - The recommended alternative will not require new water rights or new infrastructure other than switchgear and possibly some new power poles. The new switching and control equipment can be housed in the current building and land footprints. No other environmental impacts are anticipated however, since work is being conducted on a Federally owned facility proper NEPA will be conducted with the assistance of Reclamation.

4.7 Institutional Feasibility

GVPP connects with XCEL Energy under an existing interconnect agreement allowing for a maximum production of 3.5 MW. The current PPA is also with XCEL Energy. The current power purchase price is \$40 per MWhr and is also limited to a maximum of 3.5 MW. The contract expires on December 31, 2020. At the end of the current PPA, XCEL has indicated they will continue to purchase, however the power purchase price will decrease to \$30 per MWhr. This is considered and depicted in Tables 4.8 A, B & C. The Project Sponsors are actively seeking an alternate power purchaser willing to pay a rate commensurate with the current rate.

The project is permitted through an existing LOPP with the Bureau of Reclamation. The annual lease payments started at \$0.03 per KWhr produced in 2011 with a 3% escalation factor. Under current Reclamation policy for new LOPP's the lease rate is \$0.02 or \$0.03 per KWhr, depending on whether the project sponsors are making O&M repayments to Reclamation. The escalator in both instances is commensurate with the non-seasonally adjusted United States city average consumer price index for all items.

This feasibility study reflects the conditions of the current agreements and contracts. However, in order to further improve the economics of the project, it is recommended that all of these agreements be amended or renegotiated to fit current economic, political, and environmental conditions.

Since the GVPP is owned by the United States a NEPA and historical analysis will be conducted. As Reclamation owns the GVPP and ground on which it occupies and it is in the best interest of the United States that the plant continues to run, it is likely to take the lead on this task. Recognizing that NEPA cannot be predetermined, since this is a plant rebuild, no NEPA concerns are anticipated..

5.0 Financial Feasibility Analysis

5.1 Loan Amount - The Project Sponsors are requesting a CWCB loan in the amount of \$4.0M at 2% interest rate and 30 year term to serve as an interim construction loan while grant funds are solidified (See Section 5.4). Alternately, the Project Sponsors would like consideration for a lower loan amount of \$1.5M to \$2.0M at 2% interest and a 30 year term.

5.2 Financing Sources - The Project Sponsors will be providing alternate financing for the remaining balance from accounts established for the rehabilitation and maintenance of the GVPP and potential grants (See Section 5.4). As budgeting and the bureaucracy permits, Reclamation will assist with financing and in-kind services.

5.3 Revenue and Expenditure Projections – A schedule of estimated annual revenues and expenditures for the period of debt retirement is shown in Tables 4.8A , 4.8B, 4.8C, and 4.8D. These tables include the CWCB loan reserve fund.

5.4 Loan Repayment Sources – Loan repayment will take place with funds generated from sale of power from the GVPP. The current PPA rates from XCEL (\$40 per MWhr) are used until December 31, 2020 at which time the rate is conservatively assumed to be \$30 per MWhr through the end of the study period (2036). Under the \$4.0M loan scenario, alternate funding scenarios will be obtained to pay the loan down to an expected amount of \$1.5M.

Below is the current funding plan for the project. Other sources, not listed are being investigated.

GVPP Funding Plan

\$458,000	LOPP Accumulation
\$400,000	CWCB Grant
\$1,000,000	WaterSmart
\$1,942,000	CWCB Loan OMID/GVWUA
\$1,500,000	Recovery Program (Committed)
\$5,300,000	Total

The LOPP Accumulation is lease payments made to Reclamation through the LOPP and are to be made available for use in rehabilitating the facility. These funds should be available during the winter of 2016 – 2017.

The CWCB funds are an anticipated grant from the Colorado Water Conservation Board.

The Project Sponsors plan to apply for a WaterSmart Water and Energy Efficiency Grant from the Bureau of Reclamation during the next open application period, expected in the fall of 2016. If successful, these funds should be available during the summer or fall of 2017.

Under the current funding plan with the amounts and sources identified above, the Project Sponsors would be requesting a total loan of \$1.942M from CWCB. Other funding sources are being considered but are not considered reliable enough to identify at this time.

The Project Sponsors have been successful in obtaining a \$1.5M grant commitment from the Upper Colorado River Recovery Program. This funding is managed by the Bureau of Reclamation and should be available in the summer or fall of 2017.

5.5 Financial Impacts - No increase in assessments for the sponsors' water users are anticipated, as revenue generated from the GVPP will be sufficient to offset project debt, O&M, LOPP payments and reserve payments.

5.6 TABOR – Neither sponsor is subject to TABOR limitations.

5.7 Collateral – Since this project is in partnership with the U.S. that owns the plant and much of the land on which it occupies, the only collateral that the Sponsors can offer is the revenue generated by the GVPP.

5.8 Sponsor Creditworthiness – The District will likely need to get shareholder approval in order to incur this indebtedness. The Association should be able to commit to the loan without shareholder approval.

5.8.1 District – The District has been in existence since 1903 and continues to pay its bills in a timely fashion. Credit references are available upon request. For the 2015 irrigation year, the District assessment was \$63.00 per acre for agricultural, \$118.12 for residential, and \$84.00 for commercial or part thereof. The 2014 estimated receipts from the assessments total \$1,081,225.05. The OMID also receives interest income from cash reserves of about \$48,000. The District had total revenue on December 31, 2014, of about \$1.9 Million. District audit reports are on-file with CWCB but can be provided upon request.

5.8.2 Association – The Association, like the District, has been in existence since 1905 and also continues to pay its bills in a timely fashion. Credit references are available upon request. Assessments for the Association are billed in December for the upcoming irrigation season based on allotments for individual parcels of land. Any excess usage of water from the previous season is included on the December bill. The total annual estimated receipts from assessments totals over \$1M and total receipts for 2015 exceeded \$2.4M. Audit reports and financial statements for the Association can be found in the Attachments.

6.0 Conclusions and Recommendations

All feasibility reports and technical proposals for the rebuild of the GVPP have concluded that the project is feasible and cost-effective especially if a PPA can be reached maintaining a price of power in the \$40 per MWhr range and the LOPP payment levels at \$0.004. The project provides a wide range of benefits to the Grand Valley and the State of Colorado including aesthetics, environmental and compact flows, and protection of water rights. It is recommended that CWCB support the Project and approve the subject loan so that this important resource can be rebuilt and provide dependable service for decades in the future.

7.0 Attachments

Articles of Incorporation OMID

By Laws of OMID

Basic Financial Statements 2013

Basic Financial Statements, 2014

Basic Financial Statement 2015 – Audit

CORRECTION PAGE

MESA COUNTY CLERK & RECORDER

STATE OF COLORADO
COUNTY OF MESA

Recorder's Note:

The correct recording information for the attached instrument is as follows:

Reception # 161662

Filed for record on 7-5-1906

At 8 : 25 a.m.

188

61662

No. <u>61662</u>
In the <u>Probate</u> Court
<u>of the</u>
<u>Pl. Orchard</u>
Plaintiff
vs
<u>Mrs. J. L. Loo</u>
Defendant
County of <u>Colfax</u>
State of <u>Idaho</u>
I hereby certify that the foregoing is a true and correct copy of the original as the same appears from the records of the County Clerk.
<u>8/25/16</u>
<u>J. L. Loo</u>
County Clerk
Carmahan & Van Noorbeke
Grand Junction, Colo.
Attorneys for _____

Folio 1728

CERTIFICATE OF INCORPORATION.

KNOW ALL MEN BY THESE PRESENTS, That we, Frank I. Lee, Marcus M. Shores and William A. Kennedy, residents of the state of Colorado, have associated ourselves together as a corporation under the name and style of THE ORCHARD MESA IRRIGATION COMPANY, for the purpose of becoming a body corporate and politic under and by virtue of the laws of the state of Colorado, and in accordance with the provisions of the laws of said state we do hereby make, execute and acknowledge in duplicate this certificate in writing of our intention so to become a body corporate under and by virtue of said laws.

FIRST. The corporate name and style of our said corporation shall be THE ORCHARD MESA IRRIGATION COMPANY.

SECOND. The objects for which our said corporation is formed and incorporated are to construct, own and operate a pumping or power plant or plants for the purpose of furnishing and distributing water for irrigation, domestic and manufacturing purposes for the use and benefit of the respective stockholders of this corporation; and to acquire and convey real estate and personal property, franchises, water rights, rights of way and privileges, and to do any and all acts necessary and incident to the carrying out of the objects for which our said corporation is formed and created, but this corporation shall not be or become a common carrier.

The stream from which the water for the canals, ditches, and pumps of this corporation shall be taken is the Grand River, and the point or place on said stream at which the water is to be taken out or diverted is a point on said Grand River as near as may be on the south or left bank thereof, where

the east line of Lot No. 6 in Section 19 Township one South of Range one east 10th Meridian intersects the Grand River

in Mesa County, Colorado, and the said ditch or ditches are to run

thence in a Southwest direction for a distance of about two miles. The water appropriated and to be appropriated by this corporation is to be used chiefly for irrigation purposes, with the right to use the same for domestic and manufacturing purposes if desired by the company.

THIRD. The capital stock of our said corporation is one hundred thousand dollars, to be divided into one thousand shares of one hundred dollars each, and said stock shall be assessable for the maintenance, operation and perpetuation of the works, ways, and machinery of the company in accordance with the by-laws and rules hereafter to be adopted.

FOURTH. Our said corporation is to exist for the term of twenty years, with the right of extension and renewal as provided in the statutes of the state of Colorado.

FIFTH. The affairs and management of our said corporation is to be under the control of a board of directors consisting of three members, and Frank I. Lee, Marcus M. Shores and William A. Kennedy, all of Grand Junction, Mesa County, Colorado, are hereby selected and designated to act as said board of directors, and to manage the affairs and concerns of our said corporation for the first year, or until their successors are elected and qualified as provided by law.

SIXTH. The operations of our said corporation will be carried on in the county of Mesa and state of Colorado, and the principal place and business office of said corporation shall be located in the city of Grand Junction, Mesa County, state of Colorado.

SEVENTH. The board of directors shall have power to make such prudential by-laws as they may deem proper for the management of the affairs of this corporation, according to the statutes in such cases made and provided.

IN WITNESS WHEREOF: We have hereunto set our hands and seals this 27th day of June, A. D. 1906.

Recorder's Note: No Money Paid
When Recorded

Frank I. Lee (SEAL)
Marcus M. Shores (SEAL)
William A. Kennedy (SEAL)

STATE OF COLORADO }
County of Mesa } ss.

I, JAMES S. CARRAHAN, a notary public in and for said county in the state aforesaid, do hereby certify that Frank I. Lee, Marcus M. Shores and William A. Kennedy, personally known to me to be the persons whose names are subscribed to the annexed and foregoing certificate of incorporation, appeared before me this day in person and acknowledged that they signed, sealed and delivered the said instrument of writing as their free and voluntary act, for the uses and purposes therein set forth.

GIVEN under my hand and notarial seal this 27th day of June
A.D. 1906.

My commission expires September 25, 1906.



James S. Carrahan
Notary public.

189

730419
Order adopted by
Orchard Mesa
Immigration Dist.

FEB 19 1908
R. E. Starr

1391

Grand Junction, Colo., July 2nd, 1907.

THE BOARD OF DIRECTORS of The Orchard Mesa Irrigation District held their regular quarterly meeting at the office of the Secretary on July 2nd, 1907 at 10 o'clock A. M.

Present: George Smith, N. V. Foster and Fred W. Barber.

N. V. FOSTER moved the adoption of the following order which was duly seconded by George Smith, to-wit:

Now on this 2nd day of July, A. D. 1907, said day being the day for the regular quarterly meeting of the Board of Directors of the Orchard Mesa Irrigation District, comes Fred. W. Barber, Charles E. Taylor, Eva W. Taylor, The Ramey-Udlock Investment Company and Albert E. Baylis and present their petition praying that the following described lands mentioned in their petitions, to-wit: X


The West 1/2, Lot 2 and all of Lot 3 and the E four acres of Lot 4, all in Sec. 36, Twp. One south Range One West Ute Meridian, being 27 and 1/4 acres more or less; belonging to Fred W. Barber; and all of Lot No. Four in Sec. Twenty and all of Lot Four in Sec. Twenty-one, all in Twp. One South of Range One East of the Ute meridian except that portion conveyed to The Mutual Mesa Irrigation Company as of record in the office of the County Clerk and Recorder of Mesa County, Colorado, containing 80 and 1/2 acres as surveyed, all being in the County of Mesa and the State of Colorado, and belonging to Alber E. Baylis. And all of Lot numbered Five in Sec. 22, and all that portion of Lots numbered Five and Seven in Section 21, lying South of the following line, to-wit: Beginning at the West quarter corner of said Section 22 and running thence South 66 deg. 45 min. W. 380 feet; thence N. 74 deg. 15 min. W. 522 feet; thence South 66 deg. 45 min. W. 680 feet; thence South 25 deg. W. 790 feet; thence S. 49 deg. 30 min. W. 735 feet; thence S. 73 deg. 30 min. W. 360 feet; thence S. 73 deg. 45 min. W. 270 feet; thence S. 83 deg. 15 min. W. 203 feet; thence S. 89 deg. W. 233 feet; thence S. 84 deg. W. 500 feet; thence S. 84 deg. W. 500 feet; thence N. 86 deg. 15 min. W. 60 feet to the Grand River, all of said property lying and being situated in Twp. One (1) South of Range One (1) East Ute Meridian, and containing eighty-eight and nine-tenths (88.9) acres more or less, and belonging to Charles E. Taylor and Eva W. Taylor. Also the S. 1/2 of the NE 1/4 and the S. 1/2 of the

NW 1/4 of Sec. 27; the S. 1/2 of the SE 1/4 of Sec. 21; the N 1/2 of the NE 1/4 and the SE 1/4 of the SW 1/4 of the NW 1/4 and the W 1/2 of the SW 1/4 of the SW 1/4 of the NW 1/4 of Sec. 28; the W. 1/2 of the NW 1/4 of the SE 1/4 of the NE 1/4 and the S 1/2 of the SE 1/4 of the NE 1/4 and the NE 1/4 of the SE 1/4 of Sec. 29; and the SW 1/4 of the NE 1/4 of Sec. 29, except a tract 125 ft. X 130 ft. in the SE corner thereof heretofore deeded for school purposes, all the above parcels being in Township One (1) South of Range One (1) East of the Ute P. M. containing 440 acres more or less. The S. 1/2 of the S 1/2 of Sec. 28, and the N 1/2 of the N 1/2 of Sec. 33, all in Township One (1) South of Range One (1) East of the Ute P. M., containing 320 acres more or less. The NE 1/4 of the SE 1/4 of Sec. 28, Township One (1) South of Range One (1) East of the U. M. containing 40 acres more or less, belonging to The Ramey-Udlock Investment Company, be included in the Orchard Mesa Irrigation district by order of the Board of Directors of said District as by law provided; and it appearing to the Board that notice of the presentation of said petitions has been duly given according to law by publication in the Daily News, a newspaper printed at Grand Junction, Mesa County, Colorado that no objections have been filed or made to the inclusion of said lands within said District, that this is the first regular meeting of the Board of Directors of said District after the expiration of said notice of the presentation and hearing on said petition; that it would be to the best interests of said District to include said lands within said District; that said lands are contiguous and adjacent to said District as now organized and existing and that it will be necessary to change the boundaries of said District in order to include said lands therein.

IT IS THEREFORE ORDERED by the Board that the prayer of said petition be granted; that the said lands be included within said District; and that the boundaries of said District be changed so as to include all said lands therein.

STATE OF COLORADO)
COUNTY OF MESA. { SS.

I, ~~E. E. UDLOCK~~, Secretary of the Board of Directors of the Orchard Mesa Irrigation District do hereby certify that the above and foregoing is a full, true and complete copy of an order made by the Board of Directors of the said District and entered of record in the Minute Book of said Board of Directors of said District in the matter of the inclusion of certain lands in said District, on the 2nd day of July, A. D. 1907.


Secretary of the Board of Directors of The Orchard Mesa Irrigation District.

BYLAWS
OF
ORCHARD MESA IRRIGATION DISTRICT

ARTICLE I

Organization of District

This District is subject to the Irrigation District Law of 1921, § 37-43-101, et seq., C.R.S., as well as the general laws of the State of Colorado. The territory of the District, the qualifications, duties, rights and liabilities of the members of this District, and the number, election, qualifications, duties, rights and liabilities of the directors of the District are controlled by such Colorado laws.

ARTICLE II

Voting

Those entitled to vote in District elections are:

- (1) Natural persons who (a) are at least eighteen (18) years of age; (b) are Citizens of the United States; and, (c) either (i) have been residents of the District or the area to be included in the District for not less than thirty-two (32) days, or (ii) have been residents of the State of Colorado for not less than twenty-five (25) days and own, or whose spouse owns, taxable real or personal property within the District or the area to be included in the District; and,
- (2) An owner of agricultural land within the district who (a) is over twenty-one (21) years of age; (b) is a citizen of the United States or who has declared his intention to become a citizen of the United States; (c) is a resident of the State of Colorado; and, (d) (i) has paid real property taxes upon property located within the District on an area in excess of one (1) acre during the year preceding the election (if a resident of the District) or on an area of 40 acres or more (if not a resident of the District) or (ii) is an entryman upon public lands of the United States and is residing there. For the purposes of this subsection, no lands which are platted or subdivided into residence or business lots shall be considered agricultural lands.

In the election of directors only, each landowner may cast as many votes as he has water right acres of land within the District. This Article II is intended to comply with the provisions of the Irrigation District Law of 1921, codified at Colorado Revised Statutes §§ 37-

42-101 through 141, as amended, and the provisions of the Irrigation Districts of 1905 and 1921 and Irrigation District Salinity Control Act, codified at Colorado Revised Statutes §§ 37-43-101 through 189, as amended. To the extent this Article II conflicts with the provisions of those statutes, as they may be amended from time to time, the provisions of those statutes shall control.

ARTICLE III

Meetings and Elections

Section 1. Annual Meetings. An annual meeting of the landowners shall be held once each year in the month of January at a date, time and place designated by the board of directors of the District, for the purpose of a general election of a board of directors for the ensuing year and for transacting any business requiring or permitting a vote of the landowners.

Section 2. Special Elections. A special election may be called at any time by the board of directors by resolution passed and entered into records of the proceedings of the board.

Section 3. Notice of Elections. Notice of general or special elections shall be mailed to each landowner of the District at his last address as shown by the records of the District at least 30 days prior to the date of such election, and shall also be published once each week for four consecutive weeks immediately preceding such election, in a newspaper designated by the board of directors and of general circulation in the District. Notice of general elections shall call attention to the date and place of such election. Notice of special elections shall state the nature of the business to be transacted at such election, and no business shall be transacted other than that stated.

Section 4. Proxies. Any landowner entitled to vote may be represented at any general or special election by a written proxy signed by the landowner within eleven months of the date of the election at which the proxy is exercised. Before being exercised at any election, all proxies must be certified as accurate by the Manager of the district or his agent. No proxy shall be valid unless it is received for review and certification at the district office at 668 38 Road, Palisade, Colorado 81526 no less than 72 hours prior to the scheduled beginning of the meeting at which such proxy is to be exercised. If that deadline falls on a Saturday, Sunday, legal holiday, or other day when the District office is closed, proxies must be received for review and certification at the district office before 12:00 p.m. on the preceding business day. All proxies shall be tabulated and preserved in the records of any election.

ARTICLE IV

Directors

Section 1. Number of Directors. The board of directors shall consist of five members of the District who qualify as voters under Article II.

Section 2. Division in the District. The District shall be divided into three divisions and one director shall be elected from each division. One division shall embrace the area in the District on the west side of 30 Road, another division shall embrace the land between 30 Road and 33 Road, and another division shall embrace the land east of 33 Road. Two directors at large shall be elected from any area within the District.

Section 3. Term of Directors. Each director shall serve for three years.

Section 4. Regular Meetings. The board of directors shall meet at least four times each year. The regular meetings shall be held on the first Thursday of the month, unless such date shall be a holiday, in which case the meeting shall be held on the following day. Meetings shall be at the office of the District, and any business may be acted upon at regular meetings. Scheduled board meetings may be canceled by vote of the board, subject to the limitations of this Section.

Section 5. Special Meetings. Special meetings of the board of directors may be called by a majority of the board with at least five day notice, which notice must specifically state the business to be transacted. Notice, however, may be waived if all directors concur. Special meetings may be held by telephone and both waiver of notice and votes on all issues raised at special meetings may be made by mail or by telephone.

Section 6. Public Meetings. All board meetings shall be public and the records of board meetings open to general public inspection during business hours

Section 7. Binding Vote. A majority of all members of the board shall concur in order to bind the District or the board in any matter.

Section 8. Bond. Each director shall execute an official bond in the sum of \$3,000.00.

Section 9. Vacancies. If a vacancy occurs in the membership of the board of directors, the remaining members shall select a successor to serve out the unexpired term.

Section 10. Compensation. Each director shall receive a maximum of \$100.00 for each meeting spent in the discharge of District business.

Section 11. Contracts. No director shall be interested directly or indirectly, in any manner, in any contract awarded or to be awarded by the board or in the profits from any contract.

ARTICLE V

Officers and Manager

Section 1. Elections. Immediately following the annual meeting of the District, the board shall elect officers from among the directors.

Section 2. President. The president shall, subject to the direction and supervision of the board of directors, be the chief executive officer of the District and shall have general and active control of its affairs and business and general supervision of its officers, agents and employees. He shall preside at all meetings of landowners and the board.

Section 3. Vice President. The vice president shall assist the president and shall perform such duties as may be assigned to him by the president or by the board. In the absence of the president, the vice president shall have the powers and shall perform the duties of the president.

Section 4. Secretary. The secretary shall himself or through delegation (a) keep the minutes of the proceedings of the annual meeting and the board of directors; (b) publish all notices in accordance with the provisions of these Bylaws and as required by law; (c) act as custodian of the corporate records and of the seal of the corporation; and (d) perform any duties as may from time to time be assigned by the president of the board.

Section 5. Manager. The board of directors shall have the power to employ a manager and delegate to him control of the affairs and business of the District under the board's general supervision. As long as any loans from the United States to the District are unpaid, the Regional Director of the Bureau of Reclamation, Department of Interior shall have the right to approve or disapprove any manager and the District shall comply with the wishes of the Bureau in this regard.

ARTICLE VI

Classification of Lands

Section 1. Classification of Lands. The board of directors may classify and reclassify lands within its boundaries from time to time and in such a manner that in its judgment will

give consideration to the quality of the land and the purposes for which it is used or may become adapted, and to place valuation upon the land for annual assessment purposes. The results of any reclassification shall be promptly reported to the Regional Director of Region, Bureau of Reclamation, United States Department of Interior.

Section 2. Limitations on Reclassification. No land designated for agricultural purposes and classified as productive shall be reclassified as permanently unproductive (except for residential or industrial purposes) without the consent of the Regional Director of Region 4, Bureau of Reclamation, United States Department of Interior.

Section 3. Classification Categorized. The lands within the District shall be classified or reclassified into one of the following classes:

A. Lands used for agricultural purposes:

Class 1 Ag Land 5.01 acres or more

B. Lands used for other purposes:

Class 4A 1.50 Acre or Less

Class 4B 1.51 Acre to 5.00 Acres

Section 4. Valuations. The board may set different valuations on the different types of lands as classified or reclassified, and the valuation shall be the same for all lands within a particular class.

ARTICLE VII

Exchange of Water

A water user who is unable or who does not desire to use his proportionate share of water in any irrigation year may have his water turned into the headgate of another member or if:

a. The other headgate is on the same canal; and

- b. All water users taking water through the respective headgates involved shall consent to the change; and
- c. Written notice of the change, along with the consents referred to in the preceding paragraph, shall be provided to the District before April 1 of the each year; and
- d. The District approves the change as not detrimental to the interests of the District.

ARTICLE VIII

Amendments

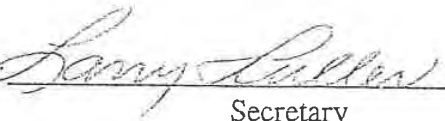
The board of directors may amend, alter, add to, or repeal these Bylaws at any meeting, provided that all five directors are in attendance and that a majority of the directors votes for such amendment.

ARTICLE IX

Laterals

The District shall have no obligations in connection with water delivery systems beyond the headgate except and to the extent provided by a resolution of its board of directors.

ORCHARD MESA IRRIGATION DISTRICT

By 
Secretary

PROJECT AGREEMENT
BETWEEN OWNER AND ENGINEER
ON THE BASIS OF A STIPULATED PRICE

THIS AGREEMENT (this "Agreement") is dated as of this 12th day of October, 2016 (the "Effective Date"), by and between Grand Valley Water Users Association, ("Grand Valley"), and Orchard Mesa Irrigation District, ("Orchard Mesa" and together with Grand Valley, "Owner"), and Sorenson Engineering, Inc., a Utah corporation ("Engineer").

RECITALS

A. Grand Valley, Orchard Mesa and the Bureau of Reclamation, Department of the Interior ("Reclamation") are parties to an Amendment to Contract No. 0-07-40-P0180 with an effective date of February 11, 2011 relating to the lease of power privilege ("LOPP") in connection with a powerplant known as the Grand Valley Powerplant ("GVPP"). Reclamation owns the GVPP.

B. Under the LOPP, Grand Valley and Orchard Mesa are obligated to operate and maintain the GVPP, subject to the terms and conditions of the LOPP.

C. Certain work needs to be performed to rebuild and upgrade the GVPP. Owner desires to have Engineer perform this work, and Engineer desires to perform the work, on the terms and conditions set forth herein.

Owner and Engineer hereby agree as follows:

ARTICLE 1 - WORK

1.01. Engineer shall complete or cause to be completed all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

A. *Work.* The work shall consist of the rebuilding and upgrading of the GVPP (referred to herein as either the "Work" or the "Project"), as generally described in the Grand Valley Power Plant Rebuild Proposal submitted by Engineer to Owner on April 1, 2016 and the Grand Valley Power Plant Feasibility Study dated September 22, 2015 (the "Proposal"), copies of which are attached hereto as Exhibit A. The Work will be separated into Phase 1, Phase 2, and Phase 3, as more specifically set forth on the project schedule attached hereto as Exhibit C and incorporated herein by this reference (the "Project Schedule"), which Project Schedule modifies the project schedule set forth on page 4 of the Proposal. Each of these three phases may hereafter be referred to as a "Phase." The Work to be performed in Phase 1 is specifically described on Exhibit B.

B. *Excluded Work.* The Work shall specifically exclude the following (the "Excluded Work"): the tailrace dig-down, excavation and design; any review, upgrades or alterations to the sub-stations required by XCEL Energy or others; and the costs of any review, alterations or upgrades required by Reclamation.

ARTICLE 2 - CONTRACT TIMES

2.01. *Anticipated Dates for Phase 1, Phase 2 and Phase 3*

A. By executing this Agreement, Owner hereby authorizes Engineer to proceed with Phase 1 of the Work as of the Effective Date. Subject to the terms and conditions of the Contract Documents, including without limitation Paragraph 5.03 and Paragraph 8.02 of the General Terms and Conditions, Phase 1 Work shall be completed in accordance with the schedule set forth in the Project Schedule, and shall be substantially completed by October 31, 2016.

B. After Phase 1 of the Work has been completed, Owner will decide, in its sole discretion, whether Phase 2 of the Work will be undertaken. If Owner decides not to proceed with Phase 2 of the Work, Owner shall provide Engineer with written notice of such decision and neither Phase 2 nor Phase 3 of the Work will be performed. If Owner decides to proceed with Phase 2 of the Work, Owner agrees that it shall provide Engineer thirty (30) days written notice to proceed with Phase 2 of the Work (the "Phase 2 Notice to Proceed"). Upon receiving such Phase 2 Notice to Proceed, Engineer shall provide, within 15 business days, an updated Project Schedule for Phase 2 of the Work and a specific description of the work to be performed in Phase 2, similar to the description of the Phase 1 work on Exhibit B.

C. If Owner decides to undertake Phase 2 of the Work, after Phase 2 has been completed Owner will decide, in its sole discretion, whether Phase 3 of the Work will be undertaken. If Owner decides not to proceed with Phase 3 of the Work, Owner shall provide Engineer with written notice of such decision and Phase 3 of the Work will not be performed. If Owner decides to proceed with Phase 3 of the Work, Owner agrees that it shall provide Engineer thirty (30) days written notice to proceed with Phase 3 of the Work (the "Phase 3 Notice to Proceed"). Upon receiving such Phase 3 Notice to Proceed, Engineer shall provide, within 15 business days, an updated Project Schedule for Phase 3 of the Work and a specific description of the work to be performed in Phase 3, similar to the description of the Phase 1 work on Exhibit B.

ARTICLE 3 - CONTRACT PRICE

3.01. Owner shall pay Engineer for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 3.01.A and 3.01.B below (collectively, the "Contract Price"):

A. *For all Work other than work performed pursuant to a Change Order, a Lump Sum of:*

\$ 541,300 - Phase 1 Subtotal

\$ 2,326,946 - Phase 2 Subtotal

\$ 2,232,701 - Phase 3 Subtotal

\$ 5,100,947 – Total

B. For any Work performed pursuant to a Change Order, Owner shall pay Engineer in accordance with the amount agreed to in such Change Order.

C. The Contract Price does not include the costs for the Excluded Work or for increased wages, if any, necessary to comply with The Davis-Bacon Act of 1931, as amended (such increased wages shall be referred to as "Davis-Bacon Increased Wages"). If there are Davis-Bacon Increased Wages, Engineer shall submit a Change Order showing the amount of such Davis-Bacon Increased Wages and Owner agrees to pay such Davis-Bacon Increased Wages. The prices set forth in Article 3.01.A shall remain in effect for notices to proceed given within one (1) year from the Effective Date. If Owner provides a Phase 2 or Phase 3 Notice to Proceed after one year from the Effective Date, Engineer shall submit an updated price for such Phase 2 or Phase 3 of the Work to Owner within fifteen (15) days after the issuance of the Notice to Proceed. Owner shall notify Engineer within ten (10) days after receipt of the updated price whether the updated price is acceptable to the Owner ("Updated Price Notice"). If the price is acceptable to the Owner, Engineer will proceed with the Work for that phase. If the price is not acceptable to Owner, Owner and Engineer shall use good faith efforts to negotiate a mutually acceptable price. If the parties are not able to negotiate a mutually acceptable price within ten (10) days from the giving of the Updated Price Notice, the Work for such phase shall not be undertaken. Notwithstanding the foregoing, the amounts set forth in Article 3.01(A) above include, at Owner's request, costs for providing a payment and performance bond for each Phase of the Project. Those costs are itemized on Lines 4, 11 and 21 or Exhibit C. However, should Engineer's cost for providing such bonding increase for either Phase 2 or Phase 3 of the Work prior to Owner issuing a Phase 2 Notice to Proceed or a Phase 3 Notice to proceed, respectively, Engineer shall notify Owner of such increased cost. Owner shall then have three (3) days to determine whether it wants to require bonding for Phase 2 or Phase 3 of the Work. If Owner wants to require bonding for Phase 2 or Phase 3 of the Work, as applicable, Engineer shall submit a Change Order showing the amount of the increased cost of the bonding and Owner agrees to pay such increase for the cost of the bonding.

ARTICLE 4 - PAYMENT PROCEDURES

4.01. Engineer shall submit and Owner will process Applications for Payment in accordance with Article 9 of the General Conditions. Upon final completion of each Phase of the Work as set forth in the Project Schedule, Owner shall pay the remainder of the Contract Price due with respect to such Phase of the Work as set forth above in accordance with Paragraph 9.02 of the General Conditions. Final payment of Phase 3 will be due when the Project is online.

ARTICLE 5 - INTEREST

5.01. All moneys not paid when due as provided in Article 9 of the General Conditions shall bear interest at the rate of 6% percent per annum.

ARTICLE 6 - CONTRACT DOCUMENTS

6.01. The Contract Documents consist of the following: (A) this Agreement, including any Exhibits; (B) Standard General Conditions of the Contract between Owner and Engineer attached hereto and incorporated herein as Exhibit D (the "General Conditions"); and (C) any Change Order amending, modifying or supplementing the Contract Documents, which may be issued after the Effective Date.

6.02. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 2.02 of the General Conditions.

ARTICLE 7 - MISCELLANEOUS

7.01. Capitalized terms used in this Agreement that are not otherwise defined will have the meanings indicated in the General Conditions.

7.02 Any Contract Document may be executed in any number of counterparts, each of which shall be deemed an original, and all of which together shall constitute one and the same document. Any facsimile or emailed signature shall create a binding obligation of the party executing the same with the same force and effect as if such emailed or facsimile signature were an original thereof.

7.03 The obligations of Owner under the Contract Documents shall be joint and several.


[Remainder of page left intentionally blank; Signature page to follow]

IN WITNESS WHEREOF, Owner and Engineer have signed this Agreement in duplicate to be effective as of the Effective Date.

OWNER

Grand Valley Water Users Association

By: 
Joe Bernal, President

By: 
D. Kim Albertson, Secretary

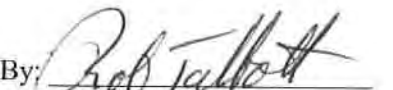
Orchard Mesa Irrigation District

By: 
Bruce Talbott, President

By: 
Melvin Rettig, Vice President/Secretary

By: 
Neil Jaquet, Board Member

By: 
Al Ruckman, Board Member

By: 
Roblee Talbott, Board Member

ENGINEER

Sorenson Engineering, Inc. a Utah corporation

By: 
Ted S. Sorenson, P.E., President

Address for giving notices:

Sorenson Engineering, Inc.
1032 Grandview Drive
Ivins, UT 84738
Email: ted@tsorenson.net

Addresses for giving notices:

Grand Valley Water Users Association
1147 24 Road
Grand Junction, CO 81505-9639
Email: mharris@gvwua.com

Orchard Mesa Irrigation District
668 38 Rd
Palisade, CO 81526
Email: max@omirrigation.com

Exhibit A
The Proposal

[See document attached hereto]

Exhibit B

Description of the Work

[See document attached hereto]

Exhibit C
Project Schedule

[See document attached hereto]

Exhibit D
General Conditions

[See document attached hereto]

ENERGY PURCHASE AGREEMENT

BETWEEN

PUBLIC SERVICE COMPANY OF COLORADO

AND

**ORCHARD MESA IRRIGATION DISTRICT AND GRAND
VALLEY WATER USERS ASSOCIATION**



January 1, 2011

**Energy Purchase Agreement
between
Orchard Mesa Irrigation District and Grand Valley Water Users Association
and
Public Service Company of Colorado**

This Energy Purchase Agreement (this "PPA") is made this 1st day of January, 2011, by and between (i) **Orchard Mesa Irrigation District, a Colorado Irrigation District together with Grand Valley Water Users Association, a Colorado non-profit corporation** (shall be referred to as "OMID" and "Grand Valley", or collectively as, "Seller"), with principal places of business in Mesa County, Colorado, each of whom shall be jointly and severally liable individually under this PPA and (ii) **Public Service Company of Colorado** ("Company"), a Colorado corporation with headquarters in Denver, Colorado. Seller and Company are hereinafter referred to individually as a "Party" and collectively as the "Parties".

WHEREAS, the United States Bureau of Reclamation owns a hydroelectric generating facility with a total nameplate capacity of approximately 3 MW, and which is further defined below as the "Facility";

WHEREAS, Company operated the Facility in conjunction with its Cameo Electric Generating Plant pursuant to a Contract for Lease of Power Privilege and will discontinue operating the Facility upon the closure of the Cameo Electric Generating Plant on or about December 31, 2010;

WHEREAS, upon execution of an amended Lease of Power Privilege Contract by and between the United States Bureau of Reclamation, as owner of the Facility, and Seller ("Amended LOPP Agreement"); the execution of this PPA; and execution of the Interconnection Agreement; Seller will assume full operational control of the Facility and will have the authority to sell to Company energy pursuant to this PPA;

WHEREAS, Seller desires to sell and deliver to Company at the Point of Delivery all of the energy produced by the Facility and associated Renewable Energy Credits, and Company desires to buy the same from Seller; and

NOW THEREFORE, in consideration of the mutual covenants herein contained, the sufficiency and adequacy of which are hereby acknowledged, the Parties agree to the following:

Article 1 – Definitions and Rules of Interpretation

1.1 Rules of Construction. The capitalized terms listed in this Article shall have the meanings set forth herein whenever the terms appear in this PPA, whether in the singular or the plural or in the present or past tense. Other terms used in this PPA but not listed in this Article shall have meanings as commonly used in the English language and, where applicable, in Good Utility Practice. Words not otherwise defined herein that have well known and generally accepted technical or trade meanings are used herein in accordance with such recognized meanings. In addition, the following rules of interpretation shall apply:

- (A) The masculine shall include the feminine and neuter.
- (B) References to "Articles," "Sections," or "Exhibits" shall be to articles, sections, or exhibits of this PPA.
- (C) The Exhibits attached hereto are incorporated in and are intended to be a part of this PPA; provided, that in the event of a conflict between the terms of any Exhibit and the terms of this PPA, the terms of the PPA shall govern.
- (D) This PPA was negotiated and prepared by both Parties with the advice and participation of counsel.
- (E) The Parties shall act reasonably and in accordance with the principles of good faith and fair dealing in the performance of this PPA. Unless expressly provided otherwise in this PPA, (a) where the PPA requires the consent, approval, or similar action by a Party, such consent or approval shall not be unreasonably withheld, conditioned or delayed, and (b) wherever the PPA gives a Party a right to determine, require, specify or take similar action with respect to a matter, such determination, requirement, specification or similar action shall be reasonable.
- (F) Use of the words "include" or "including" or similar words shall be interpreted as "including but not limited to" or "including, without limitation."
- (G) Use of the words "tax" or "taxes" shall be interpreted to include taxes, fees, surcharges, and the like.

1.2 Interpretation with Interconnection Agreement. Each Party conducts its operations in a manner intended to comply with FERC Order No. 717, Standards of Conduct for Transmission Providers, requiring the separation of its transmission and merchant functions. Moreover, the Parties acknowledge that Company's transmission function offers transmission service on its system in a manner intended to comply with FERC policies and requirements relating to the provision of open-access transmission service. The Parties recognize that Seller will enter into a separate Interconnection Agreement with the Interconnection Provider.

EXECUTION VERSION

(A) The Parties acknowledge and agree that the Interconnection Agreement shall be a separate and free-standing contract.

(B) Notwithstanding any other provision in this PPA, nothing in the Interconnection Agreement shall alter or modify Seller's or Company's rights, duties and obligations under this PPA.

1.3 Interpretation of Arrangements for Electric Supply to the Facility. This PPA does not provide for the supply of retail power to the Facility, for purposes of turbine unit start-up or shut-down, or for any other purpose ("House Power"). Seller shall contract with the local utility in whose retail service territory the Facility is located ("Local Provider") for the supply of House Power.

(A) Seller's arrangements for the supply of House Power to the Facility shall be separate and free-standing arrangements. The terms of this PPA are not binding upon the Local Provider. For purposes of this PPA, the Local Provider shall be deemed to be a separate entity and separate contracting party, whether or not the Local Provider is Company or an Affiliate of Company.

(B) Notwithstanding any other provision in this PPA, nothing in Seller's arrangements for the supply of House Power to the Facility shall alter or modify Seller's or Company's rights, duties and obligations under this PPA. This PPA shall not be construed to create any rights between Seller and the Local Provider.

(C) Subject to Seller's right to self-generate and consume energy concurrently generated by the Facility, Seller shall obtain House Power exclusively from the Local Provider. Seller shall not obtain House Power back through the Interconnection Facilities, and waives any regulatory or other legal right to the contrary.

1.4 Definitions. The following terms shall have the meanings set forth herein:

"Abandonment" means the relinquishment of all possession and control of the Facility by Seller, other than a transfer permitted under this PPA, but only if such relinquishment is not caused by or attributable to an Event of Default of, or request by, Company, or an event of Force Majeure.

"Affiliate" of any named person or entity means any other person or entity that controls, is under the control of, or is under common control with, the named entity. The term "control" (including the terms "controls", "under the control of" and "under common control with") means the possession, directly or indirectly, of the power to direct or cause the direction of the management of the policies of a person or entity, whether through ownership interest, by contract or otherwise.

"Applicable Law" means all applicable laws, statutes, treaties, codes, ordinances, regulations, certificates, orders, licenses and permits of any Governmental Authority, now in effect or hereafter enacted, amendments to any of the foregoing, interpretations of any of the foregoing by a Governmental Authority having jurisdiction,

EXECUTION VERSION

and all applicable judicial, administrative, arbitration and regulatory decrees, judgments, injunctions, writs, orders, awards or like actions (including those relating to human health, safety, the natural environment or otherwise).

"Business Day" means any calendar day that is not a Saturday, a Sunday, or a NERC recognized holiday.

"CCR" means the Colorado Code of Regulations, as amended.

"Code" means the U.S. Internal Revenue Code of 1986, including applicable rules and regulations promulgated thereunder, as amended from time to time.

"Commercial Operation" means the period beginning upon Seller's receipt of all requisite authority to sell Company energy following the full execution and delivery of the Amended LOPP Agreement, the Interconnection Agreement and this PPA; and Seller's assumption of operational control of the Facility, which Seller anticipates will occur on or about January 2011; and shall continue through the Term of this PPA.

"Commercial Operation Year" means any consecutive twelve (12) month period during the Term of this PPA, commencing with the effective date consistent with Article 2 of this PPA or any of its anniversaries.

"CPUC" means the Colorado Public Utilities Commission or any successor agency.

"C.R.S" means Colorado Revised Statutes.

"Day" means a calendar day.

"Electric Interconnection Point" means the physical point at which electrical interconnection is made between the Facility and the Interconnection Provider's System.

"Electric Metering Device(s)" means all Company owned meters, metering equipment, and data processing equipment used to measure, record, or transmit data relating to the energy output from the Facility. Electric Metering Devices include the metering current transformers ("CTs") and the metering voltage transformers ("VTs").

"Eligible Energy Resource" means any resource that qualifies as such under C.R.S. 40-2-124, or successor provisions.

"Emergency" means an emergency condition as defined under the Interconnection Agreement and any abnormal interconnection or system condition that requires automatic or immediate manual action to prevent or limit loss of Company's load or generation supply, that could adversely affect the reliability of the Company system or generation supply, that could adversely affect the reliability of any interconnected system, or that could otherwise pose a threat to public safety.

EXECUTION VERSION

"Energy Payment Rate" means the rate defined in Section 7.1 of this PPA.

"Environmental Contamination" means the introduction or presence of Hazardous Materials at such levels, quantities or location, or of such form or character, as to constitute a violation of federal, state or local laws or regulations, and present a material risk under federal, state or local laws and regulations that the Site will not be available or usable for the purposes contemplated by this PPA.

"Event of Default" shall have the meaning set forth in Article 10.

"Facility" means Seller's electric generating facility and Seller's Interconnection Facilities, as identified and described in Article 3 and Exhibit A to this PPA, including all of the following, the purpose of which is to produce electricity and deliver such electricity to the Electric Interconnection Point: Seller's equipment, buildings, all of the generation facilities, including generators, turbines, step-up transformers, output breakers, facilities necessary to connect to the Electric Interconnection Point, protective and associated equipment, improvements, and other tangible assets, contract rights, easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the construction, operation, and maintenance of the electric generating facility that produces the energy subject to this PPA. The effective capacity of the Facility is, as of the date of this PPA, 3.0 MW.

"Facility Debt" means the obligations of Seller to any lender pursuant to the Financing Documents, including principal of, premium and interest on indebtedness, fees, expenses or penalties, amounts due upon acceleration, prepayment or restructuring, swap or interest rate hedging breakage costs and any claims or interest due with respect to any of the foregoing.

"Facility Lender" means, collectively, any lender(s) providing any Facility Debt and any successor(s) or assigns thereto.

"FERC" means the Federal Energy Regulatory Commission or any successor agency.

"Financing Documents" means the loan and credit agreements, notes, bonds, indentures, security agreements, lease financing agreements, mortgages, deeds of trust, interest rate exchanges, swap agreements and other documents relating to the development, bridge, construction and/or permanent debt financing for the Facility, including any credit enhancement, credit support, working capital financing, or refinancing documents, and any and all amendments, modifications, or supplements to the foregoing that may be entered into from time to time at the discretion of Seller in connection with development, construction, ownership, leasing, operation or maintenance of the Facility.

"Force Majeure" shall have the meaning set forth in Article 12.

EXECUTION VERSION

“Forced Outage,” means any condition at the Facility that requires immediate removal of the Facility, or some part thereof, from service, another outage state, or a reserve shutdown state. This type of outage results from immediate mechanical/electrical/hydraulic control system trips and operator-initiated trips in response to Facility conditions and/or alarms.

“Good Utility Practice(s)” means the practices, methods, and acts (including the practices, methods, and acts engaged in or approved by a significant portion of the electric power generation industry, WECC and/or NERC) that, at a particular time, in the exercise of reasonable judgment in light of the facts known or that should reasonably have been known at the time a decision was made, would have been expected to accomplish the desired result in a manner consistent with law, regulation, permits, codes, standards, equipment manufacturer’s recommendations, reliability, safety, environmental protection, economy, and expedition. With respect to the Facility, Good Utility Practice(s) includes taking reasonable steps to ensure that:

(A) equipment, materials, resources, and supplies, including spare parts inventories, are available to meet the Facility’s needs;

(B) sufficient operating personnel are available at all times and are adequately experienced and trained and licensed as necessary to operate the Facility properly, efficiently, and in coordination with Company and are capable of responding to reasonably foreseeable Emergency conditions whether caused by events on or off the Site;

(C) preventive, routine, and non-routine maintenance and repairs are performed on a basis that ensures reliable, long-term and safe operation, and are performed by knowledgeable, trained, and experienced personnel utilizing proper equipment and tools;

(D) appropriate monitoring and testing are performed to ensure equipment is functioning as designed;

(E) equipment is not operated in a reckless manner, in violation of manufacturer’s guidelines or in a manner unsafe to workers, the general public, or the interconnected system or contrary to environmental laws, permits or regulations or without regard to defined limitations such as, flood conditions, safety inspection requirements, operating voltage, current, volt-ampere reactive (VAr) loading, frequency, rotational speed, polarity, synchronization, and/or control system limits;

(F) equipment and components meet or exceed the standard of durability that is generally used for electric generation operations in the region and will function properly over the full range of ambient temperature and weather conditions reasonably expected to occur at the Site and under both normal and Emergency conditions; and

EXECUTION VERSION

(G) equipment, components, and processes are appropriately permitted with any local, state, or federal Governmental Authority and are operated and maintained in accordance with applicable permit and regulatory requirements.

"Governmental Authority" means any federal, state, local or municipal governmental body; any governmental, quasi-governmental, regulatory or administrative agency, commission, body or other authority exercising or entitled to exercise any administrative, executive, judicial, legislative, policy, regulatory or taxing authority or power; or any court or governmental tribunal.

"Hazardous Materials" means any substance, material, gas, or particulate matter that is regulated by any local governmental authority, any applicable State, or the United States of America, as an environmental pollutant or dangerous to public health, public welfare, or the natural environment including, without limitation, protection of non-human forms of life, land, water, groundwater, and air, including any material or substance that is (i) defined as "toxic," "polluting," "hazardous waste," "hazardous material," "hazardous substance," "extremely hazardous waste," "solid waste" or "restricted hazardous waste" under any provision of local, state, or federal law; (ii) petroleum, including any fraction, derivative or additive; (iii) asbestos; (iv) polychlorinated biphenyls; (v) radioactive material; (vi) designated as a "hazardous substance" pursuant to the Clean Water Act, 33 U.S.C. §1251 *et seq.* (33 U.S.C. §1251); (vii) defined as a "hazardous waste" pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. §6901 *et seq.* (42 U.S.C. §6901); (viii) defined as a "hazardous substance" pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act, 42 U.S.C. §9601 *et seq.* (42 U.S.C. §9601); (ix) defined as a "chemical substance" under the Toxic Substances Control Act, 15 U.S.C. §2601 *et seq.* (15 U.S.C. §2601); or (x) defined as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act, 7 U.S.C. §136 *et seq.* (7 U.S.C. §136).

"Interconnection Agreement" means the separate agreement between Seller and the Interconnection Provider for interconnection of the Facility to the Interconnection Provider's System; as such agreement may be amended from time to time.

"Interconnection Facilities" means Interconnection Provider's Interconnection Facilities and Seller's Interconnection Facilities.

"Interconnection Provider" means the person or entity that owns and operates the transmission lines, Interconnection Provider's Interconnection Facilities and other equipment and facilities with which the Facility interconnects at the Electric Interconnection Point. For purposes of this agreement, the Company is the Interconnection Provider.

"Interconnection Provider's Interconnection Facilities" means the facilities necessary to connect Interconnection Provider's existing electric system to the Electric Interconnection Point, including breakers, bus work, bus relays, and associated

EXECUTION VERSION

equipment installed by the Interconnection Provider for the direct purpose of interconnecting the Facility, along with any easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the construction, operation and maintenance of such facilities. Arrangements for the installation and operation of the Interconnection Provider's Interconnection Facilities shall be governed by the Interconnection Agreement.

"Interconnection Provider's System" means the contiguously interconnected electric transmission and sub-transmission facilities, including Interconnection Provider's Interconnection Facilities, over which the Interconnection Provider has rights (by ownership or contract) to provide bulk transmission of capacity and energy from the Electric Interconnection Point.

"kW" means kilowatt.

"kWh" means kilowatt hour.

"Lender Consent" shall have the meaning set forth in Section 17.2.

"MW" means megawatt or one thousand kW.

"MWh" means megawatt hours.

"NERC" means the North American Electric Reliability Council or any successor organization.

"On-Peak Months" means the months of January, February, June, July, August, September and December.

"Operating Committee" means one representative each from Company and Seller pursuant to Section 9.4.

"Operating Procedures" means those procedures developed pursuant to Section 9.4, if any.

"Operating Records" means all agreements associated with the Facility, operating logs, blueprints for construction, operating manuals, all warranties on equipment, and all documents, whether in printed or electronic format, that the Seller uses or maintains for the operation of the Facility.

"Point of Delivery" means the electric system point at which Seller makes available to Company and delivers to Company the energy being provided by Seller to Company under this PPA. The Point of Delivery shall be specified in Exhibit A to this PPA.

"PPA" means this Energy Purchase Agreement between Seller and Company, including the Exhibits attached hereto.

EXECUTION VERSION

"Renewable Energy" means all electric energy generated exclusively by the Facility (which, except as otherwise provided in Section 6.1, is electric energy derived from an Eligible Energy Resource) including any and all associated Renewable Energy Credits, subject to Section 6.1 herein, and delivered to the Point of Delivery as measured by the Electric Metering Devices installed pursuant to Section 5.3.

"Renewable Energy Credits" or "RECs" shall have the meaning set forth in 4 CCR 723-3-3652(n) and means a contractual right to the full set of non-energy attributes, including any and all credits, benefits, emissions reductions, offsets, and allowances, howsoever entitled, directly attributable to a specific amount of capacity and/or electric energy generated from an Eligible Energy Resource, including any and all environmental air quality credits, benefits, emissions reductions, off-sets, allowances, or other benefits as may be created or under any existing or future statutory or regulatory scheme (federal, state, or local) by virtue of or due to the Facility's actual energy production or the Facility's energy production capability because of the Facility's environmental or renewable characteristics or attributes. For the avoidance of doubt, "RECs" exclude (i) any local, state or federal production tax credit, depreciation deductions or other tax credits providing a tax benefit to Seller based on ownership of, or energy production from, any portion of the Facility, including the investment tax credit expected to be available to Seller with respect to the Facility under Code Section 48 (*Energy Credits*), and (ii) depreciation and other tax benefits arising from ownership or operation of the Facility unrelated to its status as a generator of renewable or environmentally clean energy.

"Replacement Energy Costs" means the costs incurred by Company for the energy which is necessary to replace that which Seller, in accordance with this PPA, was required to have produced at the Facility and deliver to Company, but failed to so provide, less the sum of any payments from Company to Seller, under this PPA, which were eliminated as a result of such failure. Replacement Energy Costs include the amounts paid or incurred by Company for replacement energy, replacement RECs, transmission of energy, and directly associated transaction costs. Additional costs may include penalties incurred by Company as a result of Seller's non-performance under this PPA.

"Seller's Interconnection Facilities" means the equipment between the high side disconnect of the step-up transformer and the Electric Interconnection Point, including all related relaying protection and physical structures as well as all transmission facilities required to access the Interconnection Provider's System at the Electric Interconnection Point, along with any easements, rights of way, surface use agreements and other interests or rights in real estate reasonably necessary for the construction, operation and maintenance of such facilities. On the low side of the step-up transformer it includes Seller's metering, relays, and load control equipment as provided for in the Interconnection Agreement. This equipment is located within the Facility and is conceptually depicted in Exhibit A to this PPA.

"Site" means the parcel of real property on which the Facility will be constructed and located, including any easements, rights of way, surface use

EXECUTION VERSION

agreements and other interests or rights in real estate reasonably necessary for the construction, operation and maintenance of the Facility. The Site is more specifically described in Section 3.2 and Exhibit A to this PPA.

"System Control Center" or "SCC" means Company's merchant representative(s) responsible for dispatch of generating units, including the Facility.

"Term" means the period of time during which this PPA shall remain in full force and effect, and which is further defined in Article 2.

"Ultimate Parent Entity" of Seller shall have the meaning set forth under Section 7A of the Clayton Act, 15 U.S.C. 18a, aka the Hart-Scott-Rodino Antitrust Improvements Act of 1976.

"WECC" means the Western Electricity Coordinating Council, a NERC regional electric reliability council, or any successor organization.

Article 2 - Term and Termination

This PPA shall become effective as of the date of its execution, and shall remain in full force and effect until December 31, 2020, subject to early termination or any extension provisions set forth herein. Applicable provisions of this PPA shall continue in effect after termination, including early termination, to the extent necessary to enforce or complete the duties, obligations or responsibilities of the Parties arising prior to termination and, as applicable, to provide for: final billings and adjustments related to the period prior to termination, repayment of any money due and owing to either Party pursuant to this PPA, repayment of principal and interest associated with security funds, and the indemnifications specified in this PPA.

Article 3 - Facility Description

3.1 Summary Description. Seller shall operate, and maintain the Facility, which shall consist of two hydroelectric turbines and associated equipment having a designed maximum output of approximately 3.0 MW. Seller may make changes to, or upgrade or improve the Facility up to a maximum actual capacity of 3.5 MW without any change in this PPA. Exhibit A to this PPA provides a detailed description of the Facility, including identification of the equipment and components, which make up the Facility.

3.2 Location. The Facility shall be located on the Site and shall be identified as Seller's "Palisade" Renewable Generation Facility. The address of the Facility is 664 38 Road, Palisade, Colorado 81526. A scaled map that identifies the Site, the location of the Facility at the Site, the location of the Electric Interconnection Point and the location of the important ancillary facilities and Interconnection Facilities, is included in Exhibit A to this PPA.

EXECUTION VERSION

3.3 General Design of the Facility. During Commercial Operation, Seller shall maintain the Facility according to Good Utility Practice(s) and the Interconnection Agreement. In addition to the requirements of the Interconnection Agreement, the Facility shall at all times:

(A) have the required panel space and 125VDC battery supplied voltage to accommodate Company's metering, generator telemetering equipment and communications equipment;

(B) use communication circuits from the Facility to Company's SCC for the purpose of telemetering, supervisory control/data acquisition, and voice communications as required.

Article 4 - Commercial Operation

4.1 Commercial Operation. Upon commencement of Commercial Operation, including Seller' assumption of operational control of the Facility, the Facility shall be fully capable of reliably producing the energy to be provided under this PPA and delivering such energy to Company at the Point of Delivery.

4.2 Site Report. Seller shall conduct a Phase I environmental investigation of the Site and shall provide Company within thirty (30) Days following the Parties' execution of this PPA, with a copy of the report summarizing such investigation, together with any data or information generated pursuant to such investigation. Seller shall provide to Company with such report, confirmation from an environmental engineer that the Site has been inspected for Environmental Contamination and that the Site complies with all Applicable Laws relating to environmental or occupational health and safety matters and Hazardous Materials. Such report, or other written confirmation provided by Seller, shall include a confirmation that based upon such investigation and to the best of Seller's knowledge; no conditions involving Environmental Contamination exist at or under the Site.

4.3 Permits. Seller shall use commercially reasonable efforts to obtain, and shall pay for, all applicable environmental and other permits, licenses and approvals from any Governmental Authority required under applicable law for construction, ownership, operation and maintenance of the Facility ("Applicable Permits"). Company shall have the right to inspect and obtain copies of all Applicable Permits held by Seller. Seller will notify Company of any known inspections by any Governmental Authority relating to any Applicable Permit.

4.4 Seller's Certification. Seller shall deliver to Company the following documentation within 30 Days of the Parties' execution of this PPA.

(A) That any required governmental approvals and any other approvals have been obtained.

EXECUTION VERSION

(B) Seller has received written confirmation from the Company that (i) Seller is in compliance with the Interconnection Agreement, (ii) the interconnection of the Facility to the Interconnection Provider's System has been completed in accordance with the Interconnection Agreement, (iii) the Facility has operated at the Facility's full output capacity or at a generation level acceptable to the Company, without experiencing any abnormal or unsafe operating conditions on any interconnected system, and (iv) any other testing of the Facility and/or Seller's Interconnection Facilities required by the Interconnection Agreement has been completed satisfactorily;

(C) all arrangements for the supply of required electric services to the Facility, including the supply of turbine unit start-up and shutdown power, house power and maintenance power have been completed by Seller separate from this PPA, are in effect, and are available for the supply of such electric services to the Facility;

(D) certificates of insurance evidencing the coverages required by Article 14 have been obtained and submitted to Company;

(E) Seller has submitted to Company a certificate of an officer of Seller familiar with the Facility after due inquiry stating that all permits, consents, licenses, approvals, and authorizations required to be obtained by Seller from any Governmental Authority, and any other party, to operate the Facility, and sell and deliver to Company energy in compliance with Applicable Law and this PPA have been obtained and are in full force and effect, and that Seller is in compliance with the terms and conditions of this PPA in all material respects; and

(F) Seller has made all necessary governmental filings and/or applications for Renewable Energy Credit accreditation.

Article 5 – Delivery and Metering

5.1 Delivery Arrangements.

(A) Seller shall be responsible for all interconnection, electric losses, transmission and ancillary service arrangements and costs required to deliver, on a firm basis, energy from the Facility to Company at the Point of Delivery. Seller shall (i) diligently negotiate an Interconnection Agreement with the Company, (ii) execute and deliver to the Company an Interconnection Agreement, with such changes as are necessary to accommodate the characteristics of the Facility, and (iii) post and maintain any and all security for payment and performance, if, when and for so long as required under the Interconnection Agreement.

(B) Company shall be responsible for all electric losses, transmission and ancillary service arrangements and costs required to receive energy at the Point of Delivery and deliver such energy to points beyond the Point of Delivery. Subject to Section 7.2, Company may elect, at Company's sole option, whether to obtain and utilize firm transmission service or non-firm transmission service for the delivery of energy from the Point of Delivery.

EXECUTION VERSION

5.2 Availability Reporting. Seller shall be responsible for providing accurate and timely updates on the current availability of the Facility to Company's SCC.

5.3 Electric Metering Devices.

(A) All Electric Metering Devices used to measure the energy made available to Company by Seller under this PPA and to monitor and coordinate operation of the Facility shall be owned, installed, and maintained by Company; provided, however Seller shall reimburse Company for all costs associated with the installation of Electric Metering Devices and related work pursuant to the Interconnection Agreement. If Electric Metering Devices are not installed at the Point of Delivery, meters or meter readings will be adjusted to reflect losses from the Electric Metering Devices to the Point of Delivery. All Electric Metering Devices used to provide data for the computation of payments shall be sealed and only Company shall break the seal when such Electric Metering Devices are to be inspected and tested or adjusted in accordance with this Article. Company shall specify the number, type, and location of such Electric Metering Devices.

(B) Company, at its own expense, shall inspect and test all Electric Metering Devices upon installation and at least annually thereafter. Company shall provide Seller with reasonable advance notice of, and permit a representative of Seller to witness and verify, such inspections and tests, provided, however, that Seller shall not unreasonably interfere with or disrupt the activities of Company and shall comply with all of Company's safety standards. Upon request by Seller, Company shall perform additional inspections or tests of any Electric Metering Device and shall permit a qualified representative of Seller to inspect or witness the testing of any Electric Metering Device, provided, however, that Seller shall not unreasonably interfere with or disrupt the activities of Company and shall comply with all of Company's safety standards. The actual expense of any such requested additional inspection or testing shall be borne by Seller, unless upon such inspection or testing an Electric Metering Device is found to register inaccurately by more than the allowable limits established in this Article, in which event the expense of the requested additional inspection or testing shall be borne by Company. If requested by Seller in writing, Company shall provide copies of any inspection or testing reports to Seller.

(C) Either Party may elect to install and maintain, at its own expense, backup metering devices ("Back-Up Metering") in addition to those installed and maintained by Company, which installation and maintenance shall be performed in a manner acceptable to Company. The installing party, at its own expense, shall inspect and test the Back-Up Metering upon installation and at least annually thereafter. The installing party shall provide the other party with reasonable advance notice of, and permit a representative of the other party to witness and verify, such inspections and tests, provided, however, that the other party shall not unreasonably interfere with or disrupt the activities of the installing party and shall comply with all of the installing party's safety standards. Upon request by the other party, the installing party shall perform additional inspections or tests of the Back-Up Metering and shall permit a qualified representative of the other party to inspect or witness the testing of the Back-Up Metering, provided, however, that the other party shall not unreasonably interfere

EXECUTION VERSION

with or disrupt the activities of the installing party and shall comply with all of the installing party's safety standards. The actual expense of any such requested additional inspection or testing shall be borne by the party requesting the inspection or test, unless, upon such inspection or testing, the Back-Up Metering is found to register inaccurately by more than the allowable limits established in this Article, in which event the expense of the requested additional inspection or testing shall be borne by the installing party. If requested by the other party in writing, the installing party shall provide copies of any inspection or testing reports to the other party.

(D) If any Electric Metering Devices, or the Back-Up Metering, are found to be defective or inaccurate outside the bounds of the selected device's manufacturer's performance standards, they shall be adjusted, repaired, replaced, and/or recalibrated as near as practicable to a condition of zero error by the Party owning such defective or inaccurate device and at that Party's expense.

5.4 Adjustment for Inaccurate Meters. If an Electric Metering Device, or Back-Up Metering, fails to register, or if the measurement made by an Electric Metering Device, or Back-Up Metering, is found upon testing to be inaccurate by more than one percent (1.0%), an adjustment shall be made correcting all measurements by the inaccurate or defective Electric Metering Device, or the Back-Up Metering, for both the amount of the inaccuracy and the period of the inaccuracy, in the following manner:

(A) In the event that the Electric Metering Device is found to be defective or inaccurate, the Parties shall use the Back-up Metering, if installed, to determine the amount of such inaccuracy, provided, however, that the Back-Up Metering has been tested and maintained in accordance with the provisions of this Article. If the Back-Up Metering is installed on the low side of Seller's step-up transformer, the Back-Up metering data shall be adjusted for losses. In the event that neither party installed Back-Up Metering, or the Back-Up Metering is also found to be inaccurate by more than one percent (1.0%), the Parties shall estimate the amount of the necessary adjustment on the basis of deliveries of energy from the Facility and to the Point of Delivery during periods of similar operating conditions when the Electric Metering Device was registering accurately. The adjustment shall be made for the period during which inaccurate measurements were made.

(B) In the event that the Parties cannot agree on the actual period during which the inaccurate measurements were made, the period during which the measurements are to be adjusted shall be the shorter of (i) the last one-half of the period from the last previous test of the Electric Metering Device to the test that found the Electric Metering Device to be defective or inaccurate, or (ii) the one hundred eighty (180) Days immediately preceding the test that found the Electric Metering Device to be defective or inaccurate.

(C) To the extent that the adjustment period covers a period of deliveries for which payment has already been made by Company, Company shall use the corrected measurements as determined in accordance with this Article to recompute

EXECUTION VERSION

the amount due for the period of the inaccuracy and shall subtract the previous payments by Company for this period from such re-computed amount. If the difference is a positive number, the difference shall be paid by Company to Seller; if the difference is a negative number, that difference shall be paid by Seller to Company, or at the discretion of Company, may take the form of an offset to payments due Seller by Company. Payment of such difference by the owing Party shall be made not later than thirty (30) Days after the owing Party receives notice of the amount due, unless Company elects payment via an offset.

Article 6 – Sale and Purchase of Energy

6.1 Sale and Purchase. Beginning on the commencement of Commercial Operation, including Seller's certification pursuant to Section 4.4, Seller shall generate from the Facility, deliver to the Point of Delivery, and sell to Company, at the applicable price set forth in Section 7.1, all energy generated by the Facility. Seller shall cause all energy generated from the Facility to be Renewable Energy; provided, however, in the event hydroelectric energy from the Facility is, at some future point in time, removed from a definition of an Eligible Energy Resource, or its successor definition, as provided in C.R.S. 40-2-124, or its successor provisions, by a Governmental Authority pursuant to a final non-appealable order and neither OMID nor Grand Valley were proponents of such a change in any legal proceeding, then Seller shall not have any obligation to sell Company Renewable Energy and associated Renewable Energy Credits under this PPA; provided, further, in such event Seller shall continue to sell and deliver to Company energy pursuant to this PPA.

All energy shall be of a power quality of 60-cycle, three-phase alternating current that is compliant with the Interconnection Agreement. For the avoidance of doubt, except as otherwise expressly provided for herein, this PPA shall not be construed to constitute a 'take or pay' contract and Company shall have no obligation to pay for any energy that has not actually been generated by the Facility, measured by the Electric Metering Device(s), and delivered to Company at the Point of Delivery.

6.2 Title and Risk of Loss. As between the Parties, Seller shall be deemed to be in control of the energy output from the Facility up to and until delivery and receipt at the Point of Delivery and Company shall be deemed to be in control of such energy from and after delivery and receipt at the Point of Delivery. Title and risk of loss related to energy shall transfer from Seller to Company at the Point of Delivery.

6.3 Company's Right to Curtail Energy. Subject to Section 7.2 below, Company shall have the right, in its sole discretion, to notify Seller, by telephonic communication from the SCC, to curtail the delivery of energy to Company from the Facility and to the Point of Delivery, and Seller shall immediately comply with such notification.

Article 7 - Payment Calculations

7.1 Energy Payment Rate. Company shall pay Seller for energy delivered to Company by Seller pursuant to this PPA at a price equal to Forty Dollars (\$ 40.00) per MWh ("Energy Payment Rate"). For avoidance of doubt, and except as specifically provided for elsewhere in this PPA, Company shall not be obligated to make any payment to Seller under this Article 7 for any energy which:

(A) is not measured by the Electric Metering Device(s) installed pursuant to Section 5.3, as such measurement may be adjusted pursuant to Section 5.4; or

(B) is not delivered to Company at the Point of Delivery; or

(C) except as otherwise provided in Section 6.1, does not qualify as Renewable Energy.

7.2 Curtailment Energy Payment.

(A) If (i) delivery of energy is curtailed by Company pursuant to Section 6.3, or (ii) Company elects to utilize non-firm transmission service(s) to deliver energy from the Point of Delivery to Company load and deliveries of energy to Company are curtailed as a result of the curtailment of such non-firm transmission service(s) by the applicable transmission service provider, then

(1) the Parties shall determine the quantity of energy that would have been produced by the Facility and delivered to the Point of Delivery, had its generation not been so curtailed ("Curtailment Energy"); and

(2) Company shall pay to Seller for such Curtailment Energy all amounts that Seller would have received from Company under this PPA had production not been so curtailed.

(B) Seller shall install sufficient measuring equipment at the Facility to collect data necessary to reasonably determine the amount of Facility generation subject to any curtailment.

(C) Notwithstanding anything in this Article 7 to the contrary, and for avoidance of doubt, no payment shall be due Seller under paragraph (A) above for curtailments of delivery of energy resulting from,

(1) an Emergency;

(2) any action taken by the Interconnection Provider under the Interconnection Agreement that did not result from the Company's breach of this PPA; or

EXECUTION VERSION

(3) any notification from Company's SCC, pursuant to Section 6.3, requiring Seller to curtail deliveries of energy if Seller has not cured, pursuant to Article 10 of this PPA, its failure to maintain in full force and effect any permit, consent, license, approval, or authorization from any Governmental Authority required by law to operate the Facility; provided, however, Company shall have the right, without any liability to Seller, to curtail immediately Seller's deliveries of energy hereunder if required by Applicable Law in Company's reasonable judgment; or

(4) any curtailment of firm transmission service by the transmission provider, arranged by either Party, to provide delivery of energy to or from the Point of Delivery.

Article 8 - Billing and Payment

8.1 Billing Invoices.

(A) The billing period under this PPA shall be the calendar month. No later than fifteen (15) Business Days after the end of each month, Company shall provide to Seller, by electronic mail, a statement showing the payment amount due Seller by Company for the power provided by Seller and purchased by Company, under this PPA, during the previous calendar month billing period. The statement will show metered energy from the Facility, all billing parameters, rates and factors, and any other data reasonably pertinent to the calculation of monthly payments due to Seller.

(B) After receiving the statement of payments due Seller provided by Company pursuant to paragraph 8.1(A), Seller shall provide to Company, by first-class or electronic mail, at Seller's option, an invoice for the amount due Seller by Company, under this PPA, for the billing period covered by the statement. Seller's invoice shall be in such form as Company may reasonably request from time to time. If Seller disputes any amount in the statement provided by Company, Seller shall include with Seller's invoice an explanation of the items in dispute, as well as all supporting documentation upon which Seller relies to dispute the Company statement. Billing disputes shall be resolved in accordance with Section 8.5.

8.2 Metered Billing Data. All billing data based on metered deliveries to Company shall be collected by the Electric Metering Device(s) in accordance with Article 5.

8.3 Compensation for Ancillary Services. The Parties recognize that, although Seller's obligation to provide reactive power service from the Facility to Interconnection Provider's System and any compensation Seller receives for such reactive power service are to be set forth in the Interconnection Agreement, the compensation that Seller receives from Company under this PPA includes full compensation for the fixed and variable costs associated with providing such reactive power service and all other ancillary services associated with the Facility. Therefore, Seller shall credit Company monthly, as a separate line item reduction to Seller's invoice, for any compensation that

EXECUTION VERSION

Seller receives, apart from that provided under this PPA, for the provision of operating reserve, reactive power, and all other ancillary services from the Facility during the Term of this PPA. Such credit shall differentiate, if possible, between compensation provided for the fixed costs and the variable costs of providing reactive power service.

8.4 Payments. Unless otherwise specified herein, payments due under this PPA shall be due and payable by check or by electronic funds transfer, as designated by the owed Party, on or before the fifteenth (15th) Business Day following receipt of the billing invoice. Remittances received by mail will be considered to have been paid when due if the postmark indicates the payment was mailed on or before the fifteenth (15th) Business Day following receipt of the billing invoice. If the amount due is not paid on or before the due date, a late payment charge shall be applied to the unpaid balance and shall be added to the next billing statement. Such late payment charge shall be calculated based on an annual interest rate equal to Prime Rate plus one percent (1%) as published on the date of the invoice in The Wall Street Journal (or, if The Wall Street Journal is not published on that Day, the next succeeding date of publication). If the due date occurs on a Day that is not a Business Day, the late payment charge shall begin to accrue on the next succeeding Business Day.

8.5 Billing Disputes. Either Party may dispute invoiced amounts, but shall pay to the other Party at least the undisputed portion of invoiced amounts on or before the invoice due date. To resolve any billing dispute, the Parties shall use the procedures set forth in Section 11.10. When the billing dispute is resolved, the Party owing shall pay the amount owed within five (5) Business Days of the date of such resolution, with late payment interest charges calculated on the amount owed in accordance with the provisions of Section 8.4.

8.6 Netting.

(A) Company or Seller at any time may offset against any and all amounts that may be due and owed to the other Party under this PPA, any and all liquidated amounts, including damages and other payments, that are owed pursuant to this PPA or are past due under other accounts or agreements between the Parties. Undisputed and non-offset portions of amounts invoiced under this PPA shall be paid on or before the due date or shall be subject to the late payment interest charges set forth in Section 8.4.

(B) Seller and Company shall net their obligations to each other under this PPA, then such amounts will be aggregated and Seller and Company will discharge their obligations to pay through netting of payments. If the amount owed by Company or Seller to the other is equal, neither shall be required to make payment under this PPA.

Article 9 - Operations and Maintenance

9.1 Maintenance Schedule. Maintenance schedule requirements for the Facility shall be communicated to Company in advance, and shall be subject to Company's approval (not to be unreasonably withheld).

9.2 Facility Operation. Seller shall staff, control, and operate the Facility consistent at all times with Good Utility Practice(s) and any Operating Procedures developed pursuant to Section 9.4. Personnel capable of starting, operating, and stopping the Facility shall be continuously available, either at the Facility, or capable of remotely starting, operating, and stopping the Facility within ten (10) minutes and capable of being at the Facility with no more than thirty (30) minutes notice. In all cases personnel capable of starting, operating and stopping the Facility shall be continuously reachable by phone or pager.

9.3 Outage and Performance Reporting.

(A) Seller shall comply with all current Company, NERC, and WECC generating unit outage reporting requirements, as they may be revised from time to time, and as they apply to the Facility.

(B) When Forced Outages occur, Seller shall notify Company's SCC of the existence, nature, and expected duration of the Forced Outage as soon as practical, but in no event later than one (1) hour after the Forced Outage occurs. Seller shall immediately inform Company's SCC of changes in the expected duration of the Forced Outage unless relieved of this obligation by Company's SCC for the duration of each Forced Outage.

(C) Commencing upon the effective date of this PPA and continuing through the Term, Seller shall electronically provide energy production from the Facility in two (2) minute intervals, 24x365 ("Production Data") to Company and allow Company to disclose such Production Data publicly.

9.4 Operating Committee and Operating Procedures.

(A) Company and Seller shall each appoint one representative and one alternate representative to act in matters relating to the Parties' performance obligations under this PPA and to develop operating arrangements for the generation, delivery and receipt of energy hereunder. Such representatives shall constitute the Operating Committee, and shall be specified in Exhibit B. The Parties shall notify each other in writing of such appointments and any changes thereto. The Operating Committee shall have no authority to modify the terms or conditions of this PPA.

(B) The Operating Committee may develop mutually agreeable written Operating Procedures, which shall include methods of day-to-day communications; metering, telemetering, telecommunications, and data acquisition procedures; key personnel list for applicable Company and Seller operating centers; operations and

EXECUTION VERSION

maintenance scheduling and reporting; energy reports; unit operations log; and such other matters as may be mutually agreed upon by the Parties.

9.5 Access to Facility. Appropriate representatives of Company shall at all reasonable times, including weekends and nights, and with reasonable prior notice, have access to the Facility to read meters and to perform all inspections, maintenance, service, and operational reviews as may be appropriate to facilitate the performance of this PPA. While at the Facility, such representatives shall observe such reasonable safety precautions as may be required by Seller and shall conduct themselves in a manner that will not interfere with the operation of the Facility.

9.6 Reliability Standards. Seller shall operate the Facility in a manner that complies with all national and regional reliability standards, including standards set by WECC, NERC, the FERC, and the CPUC, or any successor agencies setting reliability standards for the operation of generation facilities. To the extent that Seller or the Facility contributes in whole or in part to actions that result in monetary penalties being assessed to Company by WECC, NERC, or any successor agency, for lack of compliance with reliability standards, Seller shall reimburse Company for its share of such monetary penalties.

9.7 Environmental Credits. The Parties acknowledge that existing and future legislation or regulation may create value in the ownership, use or allocation of RECs. Except as otherwise provided in Section 6.1, to the full extent allowed by such law or regulation, Company shall own or be entitled to claim all RECs to the extent such credits may exist during the Term. To the extent necessary, Seller shall assign to Company all rights, title and authority for Company to register, own, hold and manage such credits in Company's own name and to Company's account, including any rights associated with any renewable energy information or tracking system that may be established with regard to monitoring, tracking, certifying, or trading such credits. Upon the request of Company from time to time, at no cost to Company, (i) Seller shall deliver or cause to be delivered to Company such attestations / certifications of all Renewable Energy Credits, and (ii) Seller shall provide full cooperation in connection with Company's registration and certification of Renewable Energy Credits.

9.8 Peak Production Availability. During any Business Day of an On-Peak Month, Seller shall use commercially reasonable efforts to (i) maximize the amount of net energy produced by the Facility, and (ii) minimize the extent and duration of Forced Outages.

Article 10 - Default and Remedies

10.1 Events of Default of Seller.

(A) Any of the following shall constitute an Event of Default of Seller upon its occurrence and no cure period shall be applicable:

EXECUTION VERSION

- (1) Seller's dissolution or liquidation;
 - (2) Seller's assignment of this PPA or any of its rights hereunder for the benefit of creditors (except for an assignment to the Facility Lender, if applicable, as security under the Financing Documents as permitted by this PPA);
 - (3) Seller's filing of a petition in voluntary bankruptcy or insolvency or for reorganization or arrangement under the bankruptcy laws of the United States or under any insolvency act of any state, or Seller voluntarily taking advantage of any such law or act by answer or otherwise;
 - (4) The sale by Seller to a third party, or diversion by Seller for any use, of energy committed to Company by Seller other than in mitigation of damages for any breach by Company of this PPA; and/or
 - (5) Seller's actual fraud, waste, tampering with Company-owned facilities or other material intentional misrepresentation or misconduct in connection with this PPA or the operation of the Facility.
- (B) Any of the following shall constitute an Event of Default of Seller upon its occurrence but shall be subject to cure within thirty (30) Days after the date of written notice from Company to Seller and the Facility Lender, as applicable:
- (1) Seller's Abandonment of operation of the Facility;
 - (2) Seller's failure to maintain in effect any agreements required to deliver energy to the Point of Delivery pursuant to Section 5.1, including the Interconnection Agreement;
 - (3) Seller's failure to make any payment due to Company under or in connection with this PPA (subject to Seller's rights with respect to disputed payments and net of outstanding damages and any other rights of offset that Seller has pursuant to this PPA);
 - (4) Seller's failure to comply with any other material obligation under this PPA, which would result in a material adverse impact on Company.
- (C) Any of the following shall constitute an Event of Default of Seller upon its occurrence but shall be subject to cure within sixty (60) Days after the date of written notice from Company to Seller and the Facility Lender, if any:
- (1) Seller's willful failure to meet the peak production availability requirements of Section 9.8;

EXECUTION VERSION

(2) Seller's assignment of this PPA, or any change of control of Seller, or Seller's sale or transfer of its interest, or any part thereof, in the Facility, except as permitted in accordance with Article 17;

(3) Any representation or warranty made by Seller in this PPA shall prove to have been false or misleading in any material respect when made or ceases to remain true during the Term if such cessation would reasonably be expected to result in a material adverse impact on Company; and/or

(4) The filing of an involuntary case in bankruptcy or any proceeding under any other insolvency law against Seller as debtor or its parent or any other Affiliate that could materially impact Seller's ability to perform its obligations hereunder; provided, however, that Seller does not obtain a stay or dismissal of the filing within the cure period.

10.2 Facility Lender's Right to Cure Default of Seller. Seller shall provide Company with a notice identifying the Facility Lender, if applicable, and appropriate contact information for such Facility Lender. Following receipt of such notice, Company shall provide notice of any Event of Default of Seller to such Facility Lender and Company will accept a cure to an Event of Default of Seller performed by the Facility Lender, so long as the cure is accomplished within the applicable cure period set forth in this PPA.

10.3 Events of Default of Company.

(A) Any of the following shall constitute an Event of Default of Company upon its occurrence and no cure period shall be applicable:

(1) Company's dissolution or liquidation provided that division of Company into multiple entities shall not constitute dissolution or liquidation;

(2) Company's assignment of this PPA or any of its rights hereunder for the benefit of creditors; and/or

(3) Company's filing of a voluntary petition in bankruptcy or insolvency or for reorganization or arrangement under the bankruptcy laws of the United States or under any insolvency act of any State, or Company voluntarily taking advantage of any such law or act by answer or otherwise.

(B) Any of the following shall constitute an Event of Default of Company upon its occurrence but shall be subject to cure within thirty (30) Days after the date of written notice from Seller to Company:

(1) Company's failure to make any payment due hereunder (subject to Company's rights with respect to disputed payments under Section 8.5 and net of outstanding damages and any other rights of offset that Company may have pursuant to this PPA); and/or

EXECUTION VERSION

(2) Company's failure to comply with any other material obligation under this PPA, which would result in a material adverse impact on Seller.

(C) Any of the following shall constitute an Event of Default of Company upon its occurrence but shall be subject to cure within sixty (60) Days after the date of written notice from Seller to Company:

(1) The filing of an involuntary case in bankruptcy or any proceeding under any other insolvency law against Company that could materially impact Company's ability to perform its obligations hereunder; provided, however, that Company does not obtain a stay or dismissal of the filing within the cure period;

(2) Company's assignment of this PPA, except as permitted in accordance with Article 17; and/or

(3) Any representation or warranty made by Company in this PPA shall prove to have been false or misleading in any material respect when made or ceases to remain true during the Term if such cessation would reasonably be expected to result in a material adverse impact on Seller.

10.4 Damages Prior to Termination. Upon the occurrence of an Event of Default, and subject in each case to the limitation on damages set forth in Section 10.6, the non-defaulting Party shall have the right to collect damages accruing prior to the termination of this PPA from the defaulting Party as set forth below, and the payment of any such damages accruing prior to the cure of an Event of Default shall constitute a part of the cure.

(A) *Actual Damages.* For all Events of Default, the non-defaulting Party shall be entitled to receive from the defaulting Party all of the damages incurred by the non-defaulting Party in connection with such Event of Default; provided, that if an Event of Default has occurred and has continued uncured for a period of three hundred sixty-five (365) Days, the non-defaulting Party shall be required to either waive its right to collect further damages on account of such Event of Default or elect to terminate this PPA as provided for in Section 10.5. If Seller is the defaulting Party, the Parties agree that the damages recoverable by Company hereunder on account of an Event of Default of Seller shall include Replacement Energy Costs. OMID and Grand Valley, as "Seller" under this PPA, shall be jointly and severally liable individually for any damages arising from either OMID's or Grand Valley's failure to perform its obligations pursuant to this PPA.

10.5 Termination. Upon the occurrence of an Event of Default which has not been cured within the applicable cure period, the non-defaulting Party shall have the right to declare a date, which shall be between fifteen (15) and thirty (30) Days after the notice thereof, upon which this PPA shall terminate. Neither Party shall have the right to terminate this PPA except as provided for upon the occurrence of an Event of Default

EXECUTION VERSION

as described above or as otherwise may be explicitly provided for in this PPA. Upon the termination of this PPA under this Section 10.5, the non-defaulting Party shall be entitled to receive from the defaulting Party, subject to the limitation on damages set forth in Section 10.6, all of the damages incurred by the non-defaulting Party in connection with such termination including, if Seller is the defaulting Party, the value of all future Replacement Energy Costs for the then remaining Term.

10.6 Limitation on Damages. Except as otherwise provided in this Section 10.6 below, Seller's aggregate financial liability to Company for Replacement Energy Costs and other damages, shall not *exceed* \$225,000. If at any time during the Term, Company incurs damages in excess of the limitations set forth above which Seller does not agree to pay when billed by Company in accordance with Section 10.11, Company shall have the right to declare a termination of this PPA under Section 10.5. The limitations on damages set forth in this paragraph shall not apply to damages arising out of any of the following events:

(A) actual fraud, waste, tampering with Company-owned facilities or other material intentional misrepresentation or misconduct sanctioned by, or at the direction of, Seller in connection with this PPA or the operation of the Facility;

(B) the sale by Seller to a third party, or diversion by Seller for any use of Renewable Energy committed to Company under this PPA;

(C) Seller's failure to apply any insurance proceeds to reconstruction of the Facility following a casualty;

(D) any claim for indemnification under Article 15;

(E) any Environmental Contamination caused by Seller, subject to Section 15.5 of this PPA; or

(F) the filing of an involuntary bankruptcy petition against Seller (other than by Company), which petition is not dismissed within sixty (60) Days of its filing, or the filing of a voluntary petition in bankruptcy by Seller.

10.7 Operation by Company Following Event of Default of Seller.

(A) Prior to any termination of this PPA due to an Event of Default of Seller, Company shall have the right, but not the obligation, to possess, assume control of, and operate the Facility as agent for Seller (in accordance with Seller's rights, obligations, and interest under this PPA) during the period provided for herein. Seller shall not grant any person, other than the Facility Lender, if applicable, a right to possess, assume control of, and operate the Facility that is equal to or superior to Company's right under this Section 10.7, except as may be ordered by a court of competent jurisdiction; provided, however, neither OMID nor Grand Valley shall initiate any judicial or administrative process, or take any other action, that seeks to limit in any way Company's rights under this Section 10.7.

(B) Company shall give Seller and the Facility Lender, as applicable, ten (10) Days notice in advance of the contemplated exercise of Company's rights under this Section 10.7. Upon such notice, Seller shall collect and have available at a convenient, central location at the Facility all documents, contracts, books, manuals, reports, and records required to construct, operate, and maintain the Facility in accordance with Good Utility Practice. Upon such notice, Company, its employees, contractors, or designated third parties shall have the unrestricted right to enter the Site and the Facility for the purpose of operating the Facility. Seller hereby irrevocably appoints Company as Seller's attorney-in-fact for the exclusive purpose of executing such documents and taking such other actions as Company may reasonably deem necessary or appropriate to exercise Company's step-in rights under this Section 10.7.

(C) During any period that Company is in possession of and constructing and/or operating the Facility pursuant to this Section 10.7, Company shall perform and comply with all of the obligations of Seller under this PPA and shall use the proceeds from the sale of electricity generated by the Facility to, first reimburse Company for any and all expenses reasonably incurred by Company (including a return on capital at Company's authorized return on equity most recently determined by the CPUC) in taking possession of and operating the Facility; and to, second remit any remaining proceeds to Seller.

(D) During any period that Company is in possession of and operating the Facility, Seller shall retain legal title to and ownership of the Facility and Company shall assume possession, operation, and control solely as agent for Seller.

(1) In the event that Company is in possession and control of the Facility for an interim period, Seller may resume operation and Company shall relinquish its right to operate when Seller demonstrates to Company's reasonable satisfaction that it will remove those grounds that originally gave rise to Company's right to operate the Facility, as provided above, in that Seller (i) will resume operation of the Facility in accordance with the provisions of this PPA, and (ii) has cured any Events of Default of Seller which allowed Company to exercise its rights under this Section 10.7 (or, if the Event of Default is of such a

EXECUTION VERSION

nature that it cannot be cured by Seller without possession of the Facility, reasonable assurance that Seller will cure such Event of Default promptly following resumption of possession).

(2) In the event that Company is in possession and control of the Facility for an interim period, the Facility Lender, if applicable, or any nominee or transferee thereof, may foreclose and take possession of and operate the Facility, and Company shall relinquish its right to operate when any such Facility Lender, or any nominee or transferee thereof, requests such relinquishment.

(E) Company's exercise of its rights hereunder to possess and operate the Facility shall not be deemed an assumption by Company of any liability attributable to Seller. If at any time after exercising its rights to take possession of and operate the Facility Company elects to return such possession and operation to Seller, Company shall provide Seller with at least fifteen (15) Days advance notice of the date Company intends to return such possession and operation, and upon receipt of such notice Seller shall take all measures necessary to resume possession and operation of the Facility on such date.

(F) In the event Company assumes operation of the Facility under this Section 10.7, Company shall operate the Facility in conformance with Good Utility Practice.

10.8 Specific Performance. In addition to the other remedies specified in this Article 10, in the event that any Event of Default is not cured within the applicable cure period set forth herein, either Party may elect to treat this PPA as being in full force and effect and such Party shall have the right to specific performance. If the breach by Seller arises from a failure by a third party operating the Facility pursuant to an operating agreement entered into with Seller, and Seller fails or refuses to enforce its rights under the operating agreement which would result in the cure, or partial cure, of the Event of Default, Company's right to specific performance shall include the right to obtain an order compelling Seller to enforce its rights under the operating agreement.

10.9 Remedies Cumulative. Subject to the limitations on damages set forth in Section 10.6, each right or remedy of the Parties provided for in this PPA shall be cumulative of and shall be in addition to every other right or remedy provided for in this PPA, and the exercise, or the beginning of the exercise, by a Party of any one or more of the rights or remedies provided for herein shall not preclude the simultaneous or later exercise by such Party of any or all other rights or remedies provided for herein.

10.10 Waiver and Exclusion of Other Damages. The Parties confirm that the express remedies and measures of damages provided in this PPA satisfy the essential purposes hereof. If no remedy or measure of damages is expressly herein provided, the obligor's liability shall be limited to direct, actual damages only. Neither Party shall be liable to the other Party for consequential, incidental, punitive, exemplary or indirect damages, lost profits or other business interruption damages by statute, in tort or contract (except to the extent expressly provided herein); provided, that if either Party is

EXECUTION VERSION

held liable to a third party for such damages and the Party held liable for such damages is entitled to indemnification therefor from the other Party hereto, the indemnifying Party shall be liable for, and obligated to reimburse the indemnified Party for, such damages. To the extent any damages required to be paid hereunder are liquidated, the Parties acknowledge that the damages are difficult or impossible to determine, that otherwise obtaining an adequate remedy is inconvenient, and that the liquidated damages constitute a reasonable approximation of the harm or loss.

10.11 Payment of Amounts Due to Company. Without limiting any other provisions of this Article 10 and at any time before or after termination of this PPA, Company may send Seller an invoice for such damages or other amounts as are due to Company at such time from Seller under this PPA and such invoice shall be payable in the manner, and in accordance with the applicable provisions, set forth in Article 8, including the provision for late payment charges.

10.12 Duty to Mitigate. Each Party agrees that it has a duty to mitigate damages, and covenants that it will use commercially reasonable efforts to minimize any damages it may incur as a result of the other Party's performance or non-performance of the PPA.

Article 11 - Contract Administration and Notices

11.1 Notices in Writing. Notices required by this PPA shall be addressed to the other Party, including the other Party's representative on the Operating Committee, at the addresses noted in Exhibit B, as either Party updates them from time to time by written notice to the other Party. Any notice, request, consent, or other communication required or authorized under this PPA to be given by one Party to the other Party shall be in writing. It shall either be hand delivered, sent by electronic mail with a receipt for delivery requested, or mailed, postage prepaid, to the representative of said other Party. If mailed, the notice, request, consent or other communication shall be simultaneously sent by facsimile or other electronic means. Any such notice, request, consent, or other communication shall be deemed to have been received by the close of the Business Day on which it was hand delivered or transmitted electronically (unless hand delivered or transmitted after such close in which case it shall be deemed received at the close of the next Business Day). Real-time or routine communications concerning Facility operations shall be exempt from this Section.

11.2 Representative for Notices. Each Party shall maintain a designated representative to receive notices. Such representative may, at the option of each Party, be the same person as that Party's representative or alternate representative on the Operating Committee, or a different person. Either Party may, by written notice to the other Party, change the representative or the address to which such notices and communications are to be sent.

11.3 Authority of Representatives. The Parties' representatives designated above shall have authority to act for its respective principals in all technical matters

EXECUTION VERSION

relating to performance of this PPA and to attempt to resolve disputes or potential disputes. However, they, in their capacity as representatives, shall not have the authority to amend or modify any provision of this PPA.

11.4 Operating Records. Seller and Company shall each keep complete and accurate records and all other data required by each of them for the purposes of proper administration of this PPA, including such records as may be required by state or federal regulatory authorities and WECC in the prescribed format.

11.5 Operating Log. Seller shall maintain an accurate and up-to-date operating log, in electronic format, at the Facility with records of production for each clock hour; changes in operating status; and Forced Outages for the purposes of proper administration of this PPA, including such records as may be required by state or federal regulatory authorities and WECC in the prescribed format.

11.6 Provision of Real Time Data.

Seller shall provide real-time electronic access to Company of meteorological data and plant availability information as is actually collected at the Facility. Seller shall also provide access to any real-time forecast of expected energy output for the current day as the same may exist at the Facility.

11.7 Billing and Payment Records. Subject to Section 11.8 below, Seller and Company shall keep all books and records necessary for billing and payments in accordance with the provisions of Article 8 and grant the other Party reasonable access to those records. All records of Seller pertaining to the operation of a Facility shall be maintained on the premises of the Facility.

11.8 Examination of Records.

A. Company may audit and examine the Seller's financial, operating procedures, equipment manuals, Operating Records and data kept by the Seller relating to transactions under and administration of this PPA, at any time during the period the records are required to be maintained, from time to time upon request and during normal business hours. By way of example only, Seller shall provide to Company upon request such financial information as Company and its auditors may need for analysis and compliance by Company's parent with any applicable Financial Accounting Standards, including FIN No. 46 related to variable interest entities.

B. Seller shall have reasonable access to Company's available information specifically related solely to this PPA, for the sole purpose of verifying Company's statements sent to Seller under this PPA, subject to Company's reasonable policies and procedures.

11.9 Exhibits. Either Party may change the information for their notice addresses in Exhibit B at any time without the approval of the other Party. Exhibit A and

EXECUTION VERSION

Exhibit D may be changed at any time with the mutual consent of both Parties. Exhibit C may be changed in accordance with Section 14.2(B).

11.10 Dispute Resolution.

(A) In the event of any dispute arising under this PPA (a "Dispute"), within ten (10) Days following the delivered date of a written request by either Party (a "Dispute Notice"), (i) each Party shall appoint a representative (individually, a "Party Representative", together, the "Parties' Representatives"), and (ii) the Parties' Representatives shall meet, negotiate and attempt in good faith to resolve the Dispute quickly, informally and inexpensively. In the event the Parties' Representatives cannot resolve the Dispute within thirty (30) Days after commencement of negotiations, within ten (10) Days following any request by either Party at any time thereafter, each Party Representative (I) shall independently prepare a written summary of the Dispute describing the issues and claims, (II) shall exchange its summary with the summary of the Dispute prepared by the other Party Representative, and (III) shall submit a copy of both summaries to a senior officer of the Party Representative's Party with authority to irrevocably bind the Party to a resolution of the Dispute. Within ten (10) Business Days after receipt of the Dispute summaries, the senior officers for both Parties shall negotiate in good faith to resolve the Dispute. If the Parties are unable to resolve the Dispute within fourteen (14) Days following receipt of the Dispute summaries by the senior officers, either Party may seek available legal remedies.

(B) Notwithstanding any provision in this PPA to the contrary, if no Dispute Notice has been issued within twenty-four (24) months following the occurrence of all events and the existence of all circumstances giving rise to the Dispute (regardless of the knowledge or potential knowledge of either Party of such events and circumstances), the Dispute and all claims related thereto shall be deemed waived and the aggrieved Party shall thereafter be barred from proceeding thereon.

(C) Seller and Company each hereby knowingly, voluntarily and intentionally waive any rights they may have to a trial by jury in respect of any litigation based hereon, or arising out of, under, or in connection with, this PPA or any course of conduct, course of dealing, statements (whether oral or written) or actions of Seller and Company related hereto and expressly agree to have any disputes arising under or in connection with this PPA be adjudicated by a judge of the court having jurisdiction without a jury.

Article 12 - Force Majeure

12.1 Definition of Force Majeure.

(A) The term "Force Majeure", as used in this PPA, means causes or events beyond the reasonable control of, and without the fault or negligence of the Party claiming Force Majeure, including acts of God, vandalism beyond that which could reasonably be prevented by Seller; terrorism; war; riots; fire; explosion; blockades;

EXECUTION VERSION

insurrection; weather events (including droughts) or sudden actions of the natural elements outside twenty-year normal weather patterns; and actions by any Governmental Authority taken after the date hereof (including the adoption or change in any statute, rule or regulation or environmental constraints lawfully imposed by such Governmental Authority) but only if such requirements, actions, or failures to act prevent or delay performance; and inability, despite due diligence, to obtain any licenses, permits, or approvals required by any Governmental Authority.

(B) Notwithstanding the foregoing, the term Force Majeure does not include (i) inability by Seller to procure generating units or any component parts therefor, for any reason (the risk of which is assumed by Seller), (ii) any other acts or omissions of any third party, including any vendor, materialman, customer, or supplier of Seller, unless such acts or omissions are themselves excused by reason of Force Majeure; (iii) any full or partial curtailment in the electric output of the Facility that is caused by or arises from a mechanical or equipment breakdown or other mishaps, events or conditions, attributable to normal wear and tear or flaws, unless caused by one of the following: acts of God; sudden actions of the elements, including floods, hurricanes, or tornadoes; sabotage; terrorism; war; riots; and emergency orders issued by a Governmental Authority, (iv) failure to abide by Good Utility Practices, (v) changes in market conditions that affect the cost of Seller's supplies, or that affect demand or price for power and/or REC's; or (vi) any labor strikes, slow downs or stoppages, or other labor disruptions against Seller or Seller's contractors or subcontractors.

12.2 Applicability of Force Majeure.

(A) Neither Party shall be responsible or liable for any delay or failure in its performance under this PPA, nor shall any delay, failure, or other occurrence or event become an Event of Default, to the extent such delay, failure, occurrence or event is substantially caused by Force Majeure, provided that:

(1) the non-performing Party gives the other Party prompt written notice describing the particulars of the occurrence of the Force Majeure and its probable duration;

(2) the suspension of performance is of no greater scope and of no longer duration than is required by the Force Majeure;

(3) the non-performing Party proceeds with reasonable diligence to remedy its inability to perform and provides weekly progress reports to the other Party describing actions taken to end the Force Majeure; and

(4) when the non-performing Party is able to resume performance of its obligations under this PPA that Party shall give the other Party written notice to that effect.

(B) Except as otherwise expressly provided for in this PPA, the existence of a condition or event of Force Majeure shall not relieve the Parties of their

EXECUTION VERSION

obligations under this PPA (including payment obligations) to the extent that performance of such obligations is not precluded by the condition or event of Force Majeure.

12.3 Limitations on Effect of Force Majeure. In no event will any delay or failure of performance caused by Force Majeure extend this PPA beyond its stated Term. In the event that any delay or failure of performance caused by Force Majeure affecting Seller continues for an uninterrupted period of ninety (90) Days from its inception (with respect to Force Majeure occurring prior to commencement of Commercial Operation, as defined in this PPA) or three hundred sixty-five (365) Days from its inception (with respect to Force Majeure occurring after commencement of Commercial Operation), the Party not claiming Force Majeure may, at any time following the end of such period, terminate this PPA upon written notice to the affected Party, without further obligation by either Party except as to costs and balances incurred prior to the effective date of such termination.

Article 13 – Representations, Warranties and Covenants

13.1 Seller's Representations, Warranties and Covenants. Seller hereby represents and warrants as follows:

(A) Orchard Mesa Irrigation District is a Colorado Irrigation District duly organized, validly existing and in good standing under the laws of the State of Colorado. Grand Valley Water Users Association is a Colorado non-profit corporation, duly organized, validly existing and in good standing under the laws of Colorado. OMID and Grand Valley are qualified to do business in each jurisdiction where the failure to so qualify would have a material adverse effect on their business or financial condition; and OMID and Grand Valley have all requisite power and authority to conduct their business, to own their properties, and to execute, deliver, and perform their obligations under this PPA.

(B) The execution, delivery, and performance of the obligations under this PPA by Seller have been duly authorized by all necessary corporate action, and do not and will not:

(1) require any consent or approval by any governing body of Seller, other than that which has been obtained and is in full force and effect (evidence of which shall be delivered to Company upon its request);

(2) violate any Applicable Law, or violate any provision in any formation documents of Seller, the violation of which could have a material adverse effect on the ability of Seller to perform its obligations under this PPA;

(3) result in a breach or constitute a default under Seller's formation documents or bylaws, or under any agreement relating to the management or affairs of Seller or any indenture or loan or credit agreement, or

EXECUTION VERSION

any other agreement, lease, or instrument to which Seller is a party or by which Seller or its properties or assets may be bound or affected, the breach or default of which could reasonably be expected to have a material adverse effect on the ability of Seller to perform its obligations under this PPA; or

(4) result in, or require the creation or imposition of any mortgage, deed of trust, pledge, lien, security interest, or other charge or encumbrance of any nature (other than as may be contemplated by this PPA) upon or with respect to any of the assets or properties of Seller now owned or hereafter acquired, the creation or imposition of which could reasonably be expected to have a material adverse effect on the ability of Seller to perform its obligations under this PPA.

(C) This PPA is a valid and binding obligation of Seller.

(D) The execution and performance of this PPA will not conflict with or constitute a breach or default under any contract or agreement of any kind to which Seller is a party or any judgment, order, statute, or regulation that is applicable to Seller or the Facility.

(E) To the best knowledge of Seller, and except for those permits, consents, approvals, licenses and authorizations identified in Exhibit D, which Seller will obtain as soon as practicable pursuant to this PPA, all permits, consents, approvals, licenses, authorizations, or other action required by any Governmental Authority to authorize Seller's execution, delivery and performance of this PPA have been duly obtained and are in full force and effect.

(F) Seller shall comply with all Applicable Laws in effect or that may be enacted during the Term.

(G) Seller shall disclose to Company, the extent of, and as soon as it is known to Seller, any violation of any Applicable Laws arising out of the construction or operation of the Facility, or the presence of Environmental Contamination at the Facility or on the Site, alleged to exist by any Governmental Authority having jurisdiction over the Site, or the existence of any past or present enforcement, legal, or regulatory action or proceeding relating to such alleged violation or alleged presence of Environmental Contamination.

(H) To the full extent authorized by FERC regulations and the FERC standards of conduct, Seller hereby authorizes Company to contact and obtain information concerning the Facility and Interconnection Facilities directly from the Interconnection Provider and, to the extent necessary Seller shall provide written notice to the Interconnection Provider confirming such authorization.

(I) As of the effective date of this PPA, the Facility shall constitute an Eligible Energy Resource.

EXECUTION VERSION

13.2 Company's Representations, Warranties and Covenants. Company hereby represents and warrants as follows:

(A) Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Colorado and is qualified in each other jurisdiction where the failure to so qualify would have a material adverse effect upon the business or financial condition of Company. Company has all requisite power and authority to conduct its business, to own its properties, and to execute, deliver, and perform its obligations under this PPA.

(B) The execution, delivery, and performance of its obligations under this PPA by Company have been duly authorized by all necessary corporate action, and do not and will not:

- (1) require any consent or approval of Company's shareholders;
- (2) violate any Applicable Law, or violate any provision in any corporate documents of Company, the violation of which could have a material adverse effect on the ability of Company to perform its obligations under this PPA;
- (3) result in a breach or constitute a default under Company's corporate charter or bylaws, or under any agreement relating to the management or affairs of Company, or any indenture or loan or credit agreement, or any other agreement, lease, or instrument to which Company is a party or by which Company or its properties or assets may be bound or affected, the breach or default of which could reasonably be expected to have a material adverse effect on the ability of Company to perform its obligations under this PPA; or
- (4) result in, or require the creation or imposition of, any mortgage, deed of trust, pledge, lien, security interest, or other charge or encumbrance of any nature (other than as may be contemplated by this PPA) upon or with respect to any of the assets or properties of Company now owned or hereafter acquired, the creation or imposition of which could reasonably be expected to have a material adverse effect on the ability of Company to perform its obligations under this PPA.

(C) The execution and performance of this PPA will not conflict with or constitute a breach or default under any contract or agreement of any kind to which Company is a party or any judgment, order, statute, or regulation that is applicable to Company.

(D) To the best knowledge of Company, all approvals, authorizations, consents, or other action required by any Governmental Authority to authorize Company's execution, delivery and performance of this PPA, have been duly obtained and are in full force and effect.

Article 14 - Insurance

14.1 Evidence of Insurance. Seller shall, on or before June 1 of each Commercial Operation Year and upon the Parties' execution of this PPA, provide Company with two copies of insurance certificates acceptable to Company, in accordance with reasonable commercial practice, evidencing that insurance coverages for the Facility are in compliance with the specifications for insurance coverage set forth in Exhibit C to this PPA. Such certificates shall (a) name Company as an additional insured (except worker's compensation); (b) provide that Company shall receive thirty (30) Days prior written notice of non-renewal, cancellation of, or significant modification to any of the corresponding policies (except that such notice shall be ten (10) Days for non-payment of premiums); (c) provide a waiver of any rights of subrogation against Company, its Affiliates and their officers, directors, agents, subcontractors, and employees; and (d) indicate that the Commercial General Liability policy has been endorsed as described above. All policies shall be written with insurers that Company, in its reasonable discretion, deems acceptable. All policies shall be written on an occurrence basis, except as provided in Section 14.2. All policies shall contain an endorsement that Seller's policy shall be primary in all instances regardless of like coverages, if any, carried by Company. Seller's liability under this PPA is not limited to the amount of insurance coverage required herein. Insurance coverages required as set forth in Exhibit C may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by both of them, so long as the insurance coverages obtained by both entities is sufficient, taken together, to meet the requirements of Exhibit C.

14.2 Term and Modification of Insurance.

(A) All insurance required under this PPA shall cover occurrences during the Term and for a period of two (2) years after the Term. In the event that any insurance as required herein is commercially available only on a "claims-made" basis, such insurance shall provide for a retroactive date not later than the date of this PPA and such insurance shall be maintained by Seller, with a retroactive date not later than the retroactive date required above, for a minimum of five (5) years after the Term.

(B) Company shall have the right, at times deemed appropriate to Company during the Term, to request Seller to modify the insurance minimum limits specified in Exhibit C in order to maintain reasonable coverage amounts. Seller shall make all commercially reasonable efforts to comply with any such request.

(C) If any insurance required to be maintained by Seller hereunder ceases to be reasonably available and commercially feasible in the commercial insurance market, Seller shall provide written notice to Company, accompanied by a certificate from an independent insurance advisor of recognized national standing, certifying that such insurance is not reasonably available and commercially feasible in the commercial insurance market for electric generating plants of similar type, geographic location and capacity. Upon receipt of such notice, Seller shall attempt to

EXECUTION VERSION

obtain other insurance that would provide comparable protection against the risk to be insured.

14.3 Application of Proceeds. Seller shall apply any insurance proceeds to reconstruction of the Facility following a casualty.

Article 15 - Indemnity

15.1 Each Party (the "Indemnifying Party") agrees to indemnify, defend and hold harmless the other Party (the "Indemnified Party") from and against all third party claims, demands, losses, liabilities, penalties, and expenses (including reasonable attorneys' fees) for personal injury or death to persons and damage to the Indemnified Party's real property and tangible personal property or facilities or the property of any other person or entity to the extent arising out of, resulting from, or caused by an Event of Default under this PPA or, to the extent it materially relates to the performance of this PPA, by (a) a violation of any Applicable Laws, or (b) the negligent or tortious acts, errors, or omissions of the Indemnifying Party, its Affiliates, its directors, officers, employees, or agents. The indemnification of third party claims provided under this Article 15 is not limited by the limitation on damages set forth in Section 10.6. Nothing in this Section shall enlarge or relieve Seller or Company of any liability to the other for any breach of this PPA. This indemnification obligation shall apply notwithstanding any negligent or intentional acts, errors or omissions of the Indemnified Party, but the Indemnifying Party's liability to pay damages to the Indemnified Party shall be reduced in proportion to the percentage by which the Indemnified Party's negligent or intentional acts, errors or omissions caused the damages. Neither Party shall be indemnified for its damages resulting from its sole negligence, intentional acts or willful misconduct. These indemnity provisions shall not be construed to relieve any insurer of its obligation to pay claims consistent with the provisions of a valid insurance policy. For the avoidance of doubt, in the event Seller is the Indemnifying Party, OMID and Grand Valley acknowledge and agree to jointly and severally indemnify Company pursuant to this Article 15.

15.2 Promptly after receipt by a Party of any claim or notice of the commencement of any action, administrative, or legal proceeding, or investigation as to which the indemnity provided for in this Article may apply, the Indemnified Party shall notify the Indemnifying Party in writing of such fact. The Indemnifying Party shall assume the defense thereof with counsel designated by such Party and satisfactory to the Indemnified Party, provided, however, that if the defendants in any such action include both the Indemnified Party and the Indemnifying Party and the Indemnified Party shall have reasonably concluded that there may be legal defenses available to it which are different from or additional to, or inconsistent with, those available to the Indemnifying Party, the Indemnified Party shall have the right to select and be represented by separate counsel, at the Indemnifying Party's expense, unless a liability insurer is willing to pay such costs.

EXECUTION VERSION

15.3 If the Indemnifying Party fails to assume the defense of a claim meriting indemnification, the Indemnified Party may at the expense of the Indemnifying Party contest, settle, or pay such claim, provided that settlement or full payment of any such claim may be made only following consent of the Indemnifying Party or, absent such consent, written opinion of the Indemnified Party's counsel that such claim is meritorious or warrants settlement.

15.4 Except as otherwise provided in this Article, in the event that a Party is obligated to indemnify and hold the other Party and its successors and assigns harmless under this Article 15, the amount owing to the Indemnified Party will be the amount of the Indemnified Party's actual loss net of any insurance proceeds received by the Indemnified Party following an effort by the Indemnified Party to obtain such insurance proceeds.

15.5 Notwithstanding the foregoing, Seller's obligation to jointly and severally indemnify Company pursuant to this Article 15 with respect to claims arising solely in connection with Environmental Contamination shall be limited in the following manner.

(A) If Grand Valley ceases to be an operator of the Facility in any capacity and a party to the PPA for any reason, other than Company's termination of this PPA due to an Event of Default of Grand Valley, OMID shall have the sole obligation to indemnify Company pursuant to this Article 15 for claims arising from Environmental Contamination that occur on or after the date Grand Valley ceases to be a party to this PPA; provided, however, that in such event Grand Valley shall not be relieved of any obligations that survive the termination of this PPA pursuant to Section 18.8 herein.

(B) If OMID ceases to be an operator of the Facility in any capacity and a party to the PPA for any reason, other than Company's termination of this PPA due to an Event of Default of OMID, Grand Valley shall have the sole obligation to indemnify Company pursuant to this Article 15 for claims arising from Environmental Contamination that occur on or after the date OMID ceases to be a party to this PPA; provided, however, that in such event OMID shall not be relieved of any obligations that survive the termination of this PPA pursuant to Section 18.8 herein.

(C) For the avoidance of doubt, OMID and Grand Valley shall remain jointly and severally liable to Company pursuant to this PPA for (i) claims for indemnification including claims arising from Environmental Contamination if Grand Valley and OMID remain operators of the Facility as provided in Section 15.5 (A) and (B); and (ii) all damages and costs in connection with an Event of Default of either OMID or Grand Valley.

Article 16 - Legal and Regulatory Compliance

16.1 Compliance with Laws. Each Party shall at all times comply with all applicable laws, ordinances, rules, and regulations applicable to it, except for any non-compliance which, individually or in the aggregate, could not reasonably be expected to have a material effect on the business or financial condition of the Party or its ability to fulfill its commitments hereunder. As applicable, each Party shall give all required notices, shall procure and maintain all necessary governmental permits, licenses, and inspections necessary for performance of this PPA, and shall pay its respective charges and fees in connection therewith. Upon permanent cessation of generation of energy from the Facility, Seller shall decommission the Facility, remove the Facility and remediate the Site as, if and when required by law.

16.2 Regulatory Cooperation. Each Party shall deliver or cause to be delivered to the other Party certificates of its officers, accountants, engineers or agents as to matters as may be reasonably requested, and shall make available personnel and records relating to the Facility to the extent that the requesting Party requires the same in order to fulfill any regulatory reporting requirements, or to assist the requesting Party in litigation, including administrative proceedings before utility regulatory commissions.

Article 17 - Assignment and Other Transfer Restrictions

17.1 No Assignment Without Consent. Except as permitted in this Article 17, neither Party shall assign this PPA or any portion thereof, without the prior written consent of the other Party, which consent shall not be unreasonably withheld or delayed; provided (i) at least thirty (30) Days prior notice of any such assignment shall be given to the other Party; (ii) any assignee shall expressly assume the assignor's obligations hereunder, (iii) no assignment shall relieve the assignor of its obligations hereunder in the event the assignee fails to perform, except as otherwise provided in Section 17.1(B) below; (iii) no assignment shall impair any security given by Seller hereunder; and (iv) before the PPA is assigned by Seller, the assignee must first obtain such approvals as may be required by all applicable regulatory bodies.

(A) Seller's consent shall not be required for Company to assign this PPA to an Affiliate of Company.

(B) In the event that a permitted assignee of Company has or attains an investment grade unsecured bond rating, Seller shall release Company from its obligations under this PPA, if Company requests to be so released by notice to Seller.

(C) Company's consent shall not be required for Seller to assign this PPA for collateral purposes to a Facility Lender, if applicable. Seller shall notify Company of any such assignment to a Facility Lender no later than thirty (30) Days after the assignment.

EXECUTION VERSION

17.2 Accommodation of Facility Lender. To facilitate Seller's obtaining of financing to construct or operate the Facility, Company shall provide such consents to collateral assignment, certifications, representations, information or other documents as may be reasonably requested by Seller or the Facility Lender, as applicable, in connection with the financing of the Facility (generally, a "Lender Consent"). The Lender Consent shall include the provisions for terms as a Facility Lender may reasonably request that do not adversely affect any of Company's rights, benefits, risks and/or obligations under this PPA. Seller shall reimburse, or shall cause the Facility Lender, if any, to reimburse, Company for the incremental direct expenses (including the reasonable fees and expenses of counsel) incurred by Company in the preparation, negotiation, execution and/or delivery of any documents requested by Seller or a Facility Lender and provided by Company, pursuant to this Section 17.2.

17.3 Change of Control.

(A) Any direct or indirect change of control of Seller, whether voluntary or by operation of law, shall require the prior written consent of Company, which shall not be unreasonably withheld. No consent of Company shall be required, however, to any change of control resulting from (i) transactions among Affiliates of Seller, (ii) any exercise by the Facility Lender, as applicable, of its rights and remedies under the Financing Documents; or (iii) changes in control of Seller, or either of them, in ordinary course through election or appointment of their governing boards.

(B) (1) For purposes of this PPA, a "Pending Facility Transaction" means (i) any change of control of Seller for which Company consent is required under Section 17.3(A), (ii) the issuance by Seller or any of its Affiliates of a request for proposals or the response by Seller or any of its Affiliates to a request for proposal or similar process (e.g., auction) for the purchase or sale of the Facility or any group(s) of assets or equity interests which includes the Facility, (iii) the commencement by Seller or any of its Affiliates of substantive negotiations with any third party with respect to the sale of the Facility or any group(s) of assets or equity interests which includes the Facility, and/or (iv) the execution by Seller or any of its Affiliates of any letter of intent, memorandum of understanding or similar document, whether or not legally binding, which contemplates the sale of the Facility or any group(s) of assets or equity interests which includes the Facility. A "Pending Facility Transaction" does not include, however, (I) a change of control involving the Ultimate Parent Entity of Seller.

(2) Seller shall give to Company at least ninety (90) days' prior notice of any Pending Facility Transaction (a "PFT Notice") in order to provide Company (if Company so elects) with a reasonable opportunity to discuss and negotiate with Seller the possible sale of the Facility to Company. Any PFT Notice shall include a fair summary of Seller's plans with respect to the Facility in connection with the proposed Pending Facility Transaction, to the extent then known by Seller. Seller shall have no obligation to sell nor shall Company have any obligation to purchase the Facility, following any PFT Notice. If Seller and Company do not reach written agreement with respect to the sale and purchase of the Facility within 90 days following a PFT Notice, Seller and its Affiliates shall be free for a period of nine (9) months thereafter to sell the

EXECUTION VERSION

Facility and/or any group(s) of assets or equity interests which includes the Facility, to any third party on any terms and conditions selected by Seller or its Affiliates in its sole discretion. If Seller and its Affiliates have not closed the proposed Pending Facility Transaction within such nine-month period, this Section 17.3(B) shall again apply to any proposed Pending Facility Transaction.

(3) Seller acknowledges that the damages potentially sustainable by Company for any breach of this Section 17.3(B) would be substantial but difficult to calculate with certainty. Accordingly, in the event of any breach by Seller of this Section 17.3(B) and upon Company's notice to Seller stating that Company has incurred any damages hereunder, in lieu of actual damages, Seller shall pay to Company within thirty (30) days following invoice therefor liquidated damages in the amount of ten dollars (\$10.00) per kW of aggregate nameplate capacity of the Facility. OMID and Grand Valley shall be jointly and severally liable under this Section 17.3(B)(3).

17.4 Notice of Facility Lender Action. Within ten (10) Days following either OMID's or Grand Valley's receipt of a written notice of default from a Facility Lender, if any, or a Facility Lender's intent to exercise any remedies, under the Financing Documents, OMID or Grand Valley shall deliver a copy of such notice to Company.

17.5 Transfer Without Consent is Null and Void. Any change of control or sale, transfer, or assignment of any interest in the Facility or in this PPA made without fulfilling the requirements of this PPA shall be null and void and shall constitute an Event of Default pursuant to Article 10.

17.6 Subcontracting. Seller may subcontract its duties or obligations under this PPA without the prior written consent of Company, provided, that no such subcontract shall relieve Seller of any of its duties or obligations hereunder.

Article 18 - Miscellaneous

18.1 Waiver. Subject to the provisions of Section 11.10(B), the failure of either Party to enforce or insist upon compliance with or strict performance of any of the terms or conditions of this PPA, or to take advantage of any of its rights thereunder, shall not constitute a waiver or relinquishment of any such terms, conditions, or rights, but the same shall be and remain at all times in full force and effect.

18.2 Taxes.

(A) Seller shall be solely responsible for (i) any and all present or future taxes and other impositions of Governmental Authorities relating to the construction, ownership or leasing, operation or maintenance of the Facility, or any components or appurtenances thereof, including all taxes, fees, allowances, trading credits and other offsets and impositions for wastes and emissions produced by the Facility, and (ii) all *ad valorem* taxes relating to the Facility. Seller's prices under Article 7 are inclusive of such taxes, allowances and credits during the Term.

EXECUTION VERSION

(B) The Parties shall cooperate to minimize tax exposure; however, neither Party shall be obligated to incur any financial burden to reduce taxes for which the other Party is responsible hereunder. All electric energy delivered by Seller to Company hereunder shall be sales for resale, with Company reselling such electric energy. Company shall obtain and provide Seller with any certificates required by any Governmental Authority, or otherwise reasonably requested by Seller to evidence that the deliveries of electric energy hereunder are sales for resale.

18.3 Fines and Penalties.

(A) Seller shall pay when due all fees, fines, penalties or costs incurred by Seller or its agents, employees or contractors for noncompliance by Seller, its employees, or subcontractors with any provision of this PPA, or any contractual obligation, permit or requirements of law except for such fines, penalties and costs that are being actively contested in good faith and with due diligence by Seller and for which adequate financial reserves have been set aside to pay such fines, penalties or costs in the event of an adverse determination.

(B) If fees, fines, penalties, or costs are claimed or assessed against Company by any Governmental Authority due to noncompliance by Seller with this PPA, any requirements of law, any permit or contractual obligation, or, if the work of Seller or any of its contractors or subcontractors is delayed or stopped by order of any Governmental Authority due to Seller's noncompliance with any requirements of law, permit, or contractual obligation, OMID and Grand Valley shall jointly and severally indemnify and hold Company harmless against any and all losses, liabilities, damages, and claims suffered or incurred by Company, including claims for indemnity or contribution made by third parties against Company, except to the extent Company recovers any such losses, liabilities or damages through other provisions of this PPA. This indemnification obligation shall apply notwithstanding any negligent or intentional acts, errors or omissions of Company, but OMID's and Grand Valley's liability to pay damages to Company shall be reduced in proportion to the percentage by which the Company's negligent or intentional acts, errors or omissions caused such damages.

18.4 Rate Changes.

(A) The terms and conditions and the rates for service specified in this PPA shall remain in effect for the term of the transaction described herein. Absent the Parties' written agreement, this PPA shall not be subject to change by application of either Party pursuant to Section 205 or 206 of the Federal Power Act.

(B) Absent the agreement of all Parties to the proposed change, the standard of review for changes to this PPA whether proposed by a Party, a non-party, or the Federal Energy Regulatory Commission acting *sua sponte* shall be the "public interest" standard of review set forth in United Gas Pipe Line v. Mobile Gas Service Corp., 350 U.S. 332 (1956) and Federal Power Commission v. Sierra Pacific Power Co., 350 U.S. 348 (1956) (aka the "Mobile-Sierra doctrine").

EXECUTION VERSION

18.5 Disclaimer of Third Party Beneficiary Rights. In executing this PPA, Company does not, nor should it be construed to, extend its credit or financial support for the benefit of any third parties lending money to or having other transactions with Seller. Nothing in this PPA shall be construed to create any duty to, or standard of care with reference to, or any liability to, any person not a party to this PPA.

18.6 Relationship of the Parties.

(A) This PPA shall not be interpreted to create an association, joint venture, or partnership between the Parties nor to impose any partnership obligation or liability upon either Party. Except as specifically provided for in Section 10.7, neither Party shall have any right, power, or authority to enter into any agreement or undertaking for, or act on behalf of, or to act as an agent or representative of, the other Party.

(B) Seller shall be solely liable for the payment of all wages, taxes, and other costs related to the employment of persons to perform such services, including all federal, state, and local income, social security, payroll, and employment taxes and statutorily mandated workers' compensation coverage. None of the persons employed by Seller shall be considered employees of Company for any purpose; nor shall Seller represent to any person that he or she is or shall become a Company employee.

18.7 Equal Employment Opportunity Compliance Certification. Seller acknowledges that as a government contractor, Company is subject to various federal laws, executive orders, and regulations regarding equal employment opportunity and affirmative action. These laws may also be applicable to Seller as a subcontractor to Company. All applicable equal opportunity and affirmative action clauses shall be deemed to be incorporated herein as required by federal laws, executive orders, and regulations, including 41 C.F.R. §60-1.4(a)(1-7).

18.8 Survival of Obligations. Cancellation, expiration, or earlier termination of this PPA shall not relieve the Parties of obligations, including warranties, remedies, or indemnities, that by their nature should survive such cancellation, expiration, or termination, which obligations shall survive for the period of the applicable statute(s) of limitation.

18.9 Severability. In the event any of the terms, covenants, or conditions of this PPA, its Exhibits, or the application of any such terms, covenants, or conditions, shall be held invalid, illegal, or unenforceable by any court or administrative body having jurisdiction, all other terms, covenants, and conditions of the PPA and their application not adversely affected thereby shall remain in force and effect; provided, however, that Company and Seller shall negotiate in good faith to attempt to implement an equitable adjustment in the provisions of this PPA, with a view toward effecting the purposes of this PPA by replacing the provision that is held invalid, illegal, or unenforceable with a valid provision, the economic effect of which comes as close as possible to that of the provision that has been found to be invalid, illegal or unenforceable.

EXECUTION VERSION

18.10 Complete Agreement; Amendments. The terms and provisions contained in this PPA constitute the entire agreement between Company and Seller with respect to the Facility and shall supersede all previous communications, representations, or agreements, either verbal or written, between Company and Seller with respect to the sale of energy from the Facility. This PPA may be amended, changed, modified, or altered, provided that such amendment, change, modification, or alteration shall be in writing and signed by both Parties hereto, and provided further, that the Exhibits attached hereto may be changed according to the provisions of Section 11.9.

18.11 Binding Effect. This PPA, as it may be amended from time to time pursuant to this Article, shall be binding upon and inure to the benefit of the Parties hereto and their respective successors-in-interest, legal representatives, and assigns permitted hereunder.

18.12 Headings. Captions and headings used in this PPA are for ease of reference only and do not constitute a part of this PPA.

18.13 Counterparts. This PPA may be executed in any number of counterparts, and each executed counterpart shall have the same force and effect as an original instrument.

18.14 Governing Law. The interpretation and performance of this PPA and each of its provisions shall be governed and construed in accordance with the laws of the State of Colorado. The Parties hereby submit to the exclusive jurisdiction of the courts of the State of Colorado, and venue is hereby stipulated as Denver, Colorado.

18.15 Press Releases and Media Contact. Upon the request of either Party, the Parties shall develop a mutually agreed joint press release to be issued, describing the location, size, type and timing of the Facility, the long-term nature of this PPA, and other relevant factual information about the relationship. In the event during the Term, either Party is contacted by the media concerning this PPA or the Facility, the contacted Party shall inform the other Party of the existence of the inquiry, any questions asked, and the substance of any information provided to the media.

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EXECUTION VERSION

IN WITNESS WHEREOF, the Parties have executed this PPA.

Seller:

Grand Valley Water Users Association

By D. Kim Albertson 2/11/2011

D. Kim Albertson, President

and;

By Joe C. Bernal 2/11/11

Joe C. Bernal, Secretary

Orchard Mesa Irrigation District

By Larry Fuller 2/11/2011

Larry Fuller, President

Company:

**Public Service Company of Colorado, a Colorado
corporation**

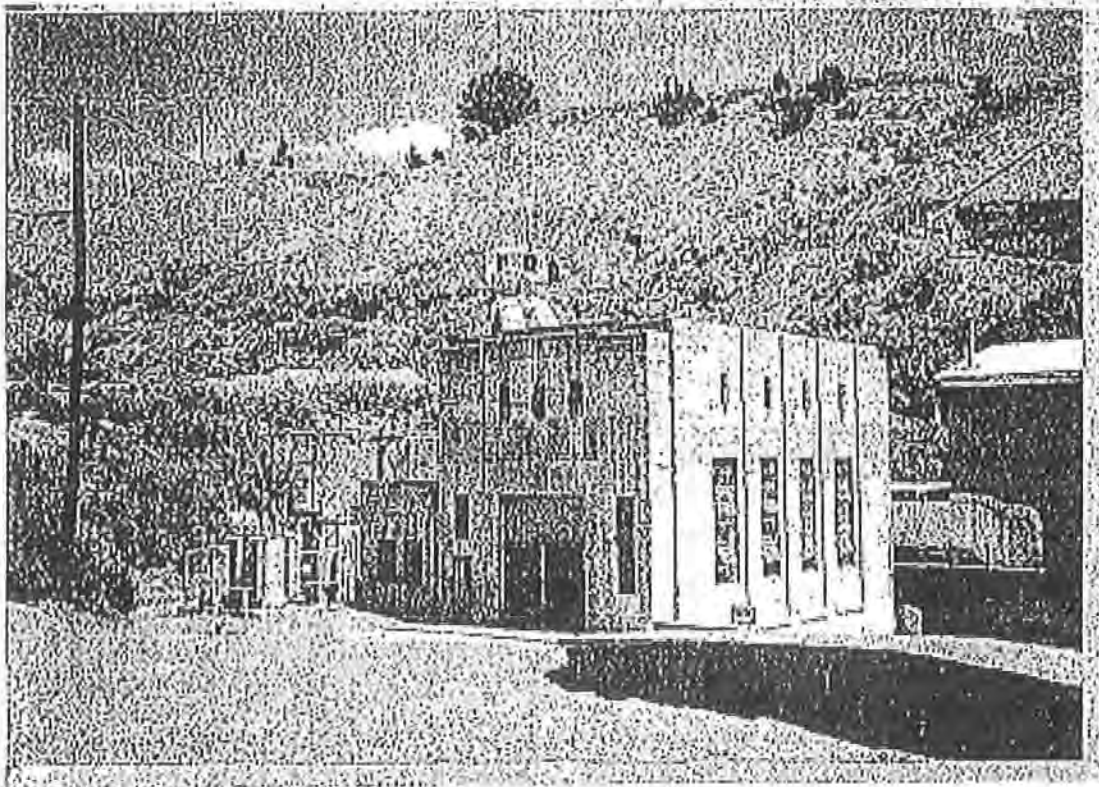
By: Tim Kawakami

Tim Kawakami
Director, Purchased Power
Xcel Energy Services Inc., as agent for
Public Service Company of Colorado

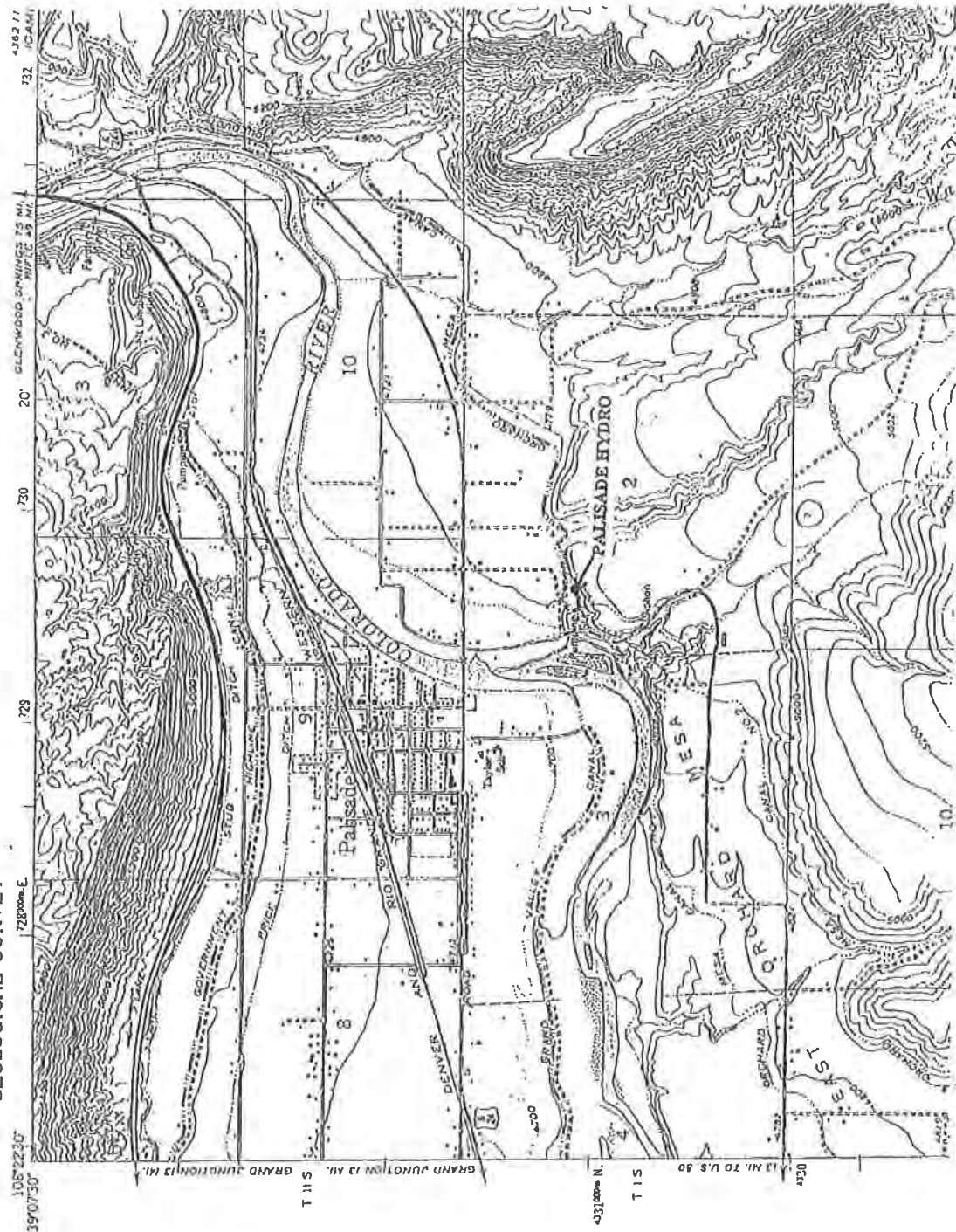
EXHIBIT A
(to PPA)

FACILITY DESCRIPTION AND SITE MAPS

The Facility consists of two Pelton Water Wheel Co. hydroelectric turbines (1.5 MW each), two Electric Machinery Mfg. Company generators and associated equipment.



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ON-ROAD & IN-BUILDING DETECT PROPERTY

CUTTER STREET: NEW TRAIL LANE

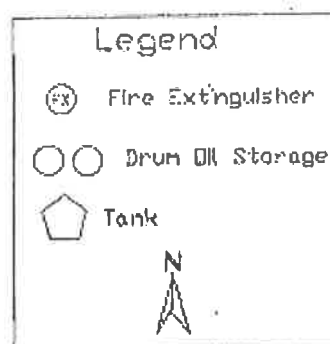
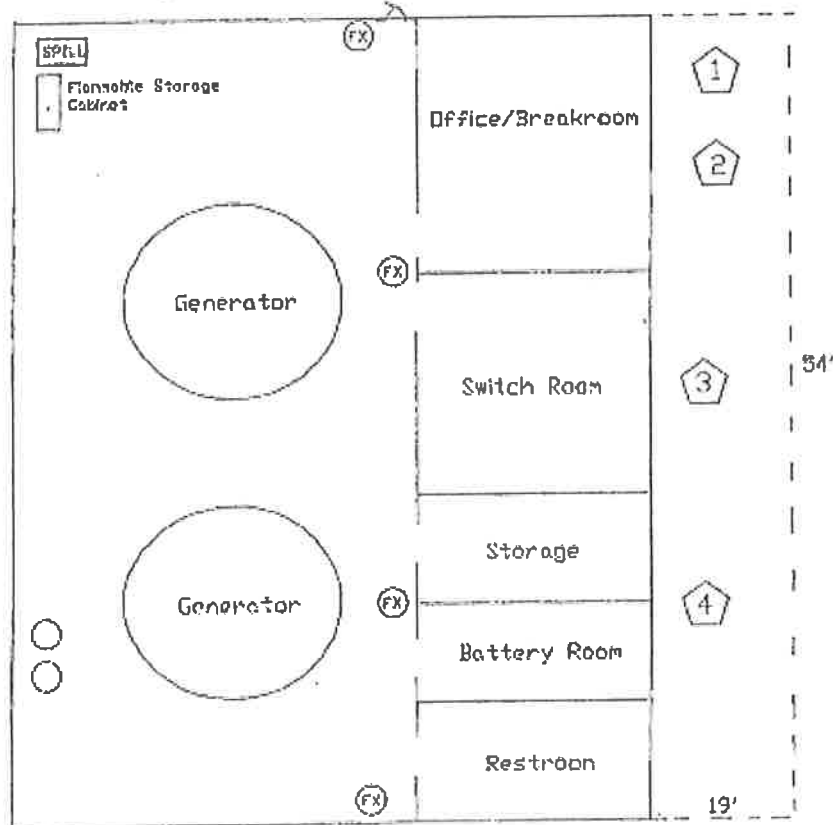
RED DASH: PROPERTY OWNERS LITIGATION #1, 1204



EXECUTION VERSION

PALISADE HYDRO

Public Service Company of Colorado
664 38 Road, Palisade, Colorado 81526



Tank #	Size (gal)	Material Stored
1. Transformer	760	Transformer oil
2. Transformer	730	Transformer oil
3. Transformer	3 @ 470 ea	Transformer oil
4. Transformer	3 @ 232 ea	Transformer oil

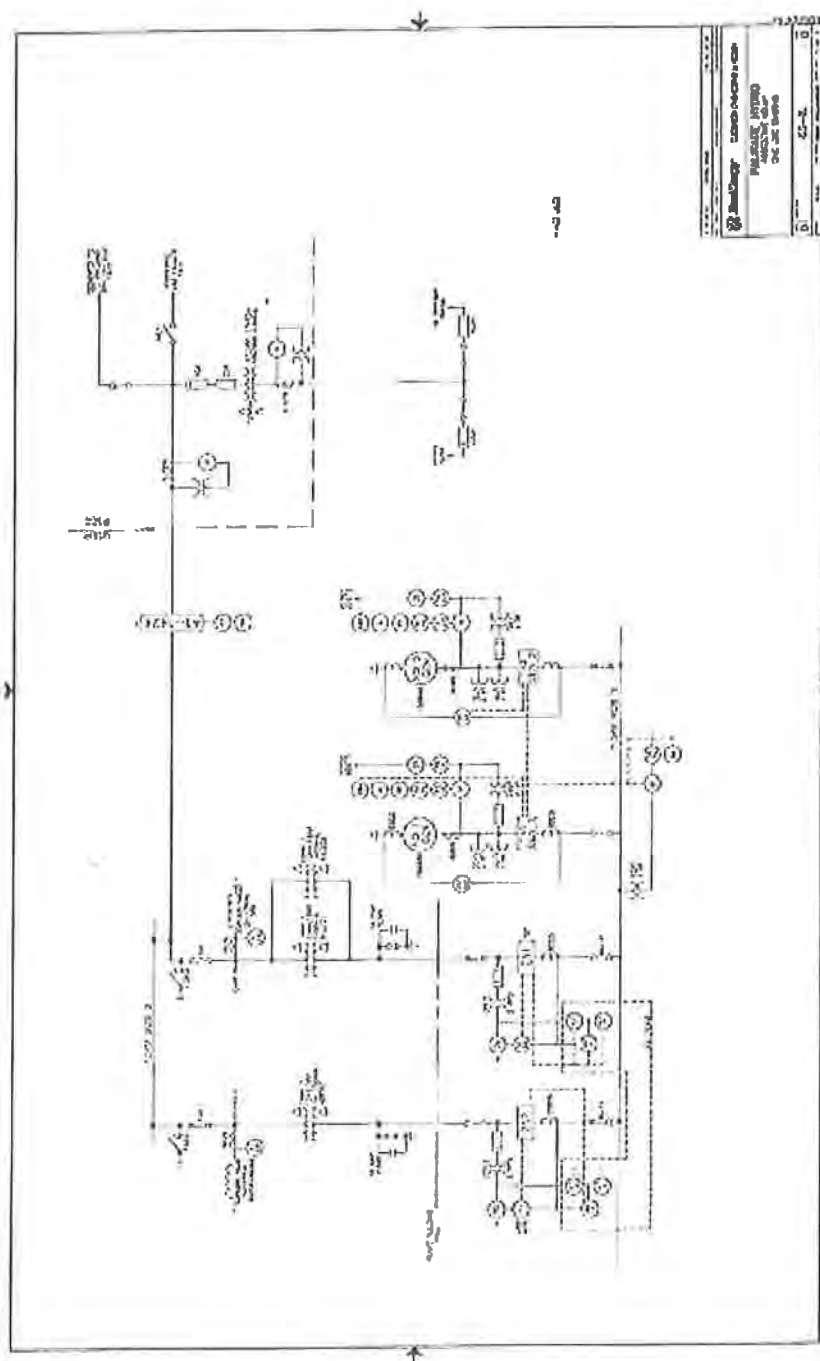


EXHIBIT B
(to PPA)

NOTICE ADDRESSES

Company	Seller
<p>Notices: Thomas Imbler, Vice President Commercial Operations Public Service Company of Colorado 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: (303) 571- 7414 Fax: (303) 571-6273</p> <p>Dana Echter Manager, Renewable Purchases Public Service Company of Colorado 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: (303) 571-7714 Fax: (303) 571-7002</p>	<p>Notices: Dick Proctor Manager Grand Valley Water Users Association 1147 24 Road Grand Junction, CO 81505-9639 Phone: (970) 242-5065 Fax: (970) 243-4871</p> <p>Max Schmidt Manager Orchard Mesa Irrigation District 668 38 Road Palisade, CO 81526 Phone: (970) 464-7885 Fax: (970) 464-5928</p> <p>Mark A. Hermundstad Williams, Turner & Holmes, P.C. 200 North 6th Street, Suite 103 Grand Junction, Colorado 81501 Phone: (970) 242-6262 Fax: (970) 241-3026</p> <p>Karl F. Kumli, III Dietze and Davis, P.C. 2060 Broadway, Suite 400 Boulder, CO 80302 Phone: (303) 447-1375 Fax: (303) 440-9036</p>
<p>Operating Committee Representative: Dana Echter Manager, Renewable Purchases Public Service Company of Colorado 1800 Larimer Street, Suite 1000 Denver, CO 80202 Phone: (303) 571-7714 Fax: (303) 571-7002</p>	

EXECUTION VERSION

Alternate:

Jeanette Schuck
Purchased Power Analyst
Public Service Company of Colorado
1800 Larimer Street, Suite 1000
Denver, CO 80202
Phone: (303) 571-7428
Fax: (303) 571-7002

EXECUTION VERSION

EXHIBIT C (to PPA) INSURANCE COVERAGE

Type of Insurance

Minimum Limits of Coverage

Commercial General Liability (CGL) \$11,000,000, combined single limit each occurrence and commercial umbrella aggregate, where applicable. If CGL insurance contains a general aggregate limit, it shall apply separately to the Facility. Insurance coverages required for Commercial General Liability Insurance may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section.

CGL insurance shall be written on ISO occurrence form CG 00 01 01 96 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products/completed operations, contracts, property damage, personal injury and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract), all with limits as specified above. CGL insurance shall include ISO endorsement CG 24 17 (or an equivalent endorsement) which modifies the definition of "Insured contract" to eliminate the exclusion of easement or license agreements in connection with construction or demolition operations on or within 50 feet of a railroad. There shall be no endorsement or modification of the CGL insurance limiting the scope of coverage for liability arising from explosion, collapse, or underground property damage.

Company shall be included as an insured under the CGL policy, using ISO additional insured endorsement CG 20 10 (or a substitute providing equivalent coverage), and under the commercial umbrella insurance. The commercial umbrella insurance shall provide coverage over the top of the CGL insurance, the Business Automobile Liability insurance, and the Employers Liability insurance.

The CGL and commercial umbrella insurance to be obtained by [or on behalf of] Seller shall be endorsed as follows:

Such insurance as afforded by this policy for the benefit of Company shall be primary as respects any claims, losses, damages, expenses, or liabilities arising out of this PPA, and insured hereunder, and any insurance carried by Company shall be excess of and noncontributing with insurance afforded by this policy.

Business Automobile Liability \$1,000,000 combined single limit (each accident), including all Owned, Non-Owned, Hired and Leased Autos

Business Automobile Liability insurance shall be written on ISO form CA 00 01, CA 00 05, CA 00 12, CA 00 20, or a substitute form providing equivalent liability coverage. If necessary, the policy shall be endorsed to provide contractual liability coverage equivalent to that provided in the 1990 and later editions of CA 00 01. Insurance coverages required as set forth for Business Automobile Liability may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section.

EXHIBIT C

(continued)

Workers Compensation

Statutory Requirements. Seller may comply with these requirements through the use of a qualified self-insurance plan.

Type of Insurance

Minimum Limits of Coverage

Employers Liability

\$1,000,000 each accident for bodily injury by accident,
or
\$1,000,000 each employee for bodily injury by disease.

Insurance coverages required as set forth for Employers Liability may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section.

Environmental Impairment Liability \$4,000,000 each occurrence.

Insurance coverages required as set forth for Employers Liability may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section. The parties agree that the policy or policies of General Commercial Liability Insurance which do not contain an environmental impairment exclusion and which meet the coverage limits set out in this section, shall be sufficient to meet the requirements of this section.

All-Risk Property insurance
covering physical loss or damage to
the Facility

Full replacement value of the Facility. A deductible may
be carried, which deductible shall be the absolute
responsibility of Seller.

All-Risk Property insurance shall include: (i) coverage for fire, flood, wind and storm, tornado and earthquake with respect to facilities similar in construction, location and occupancy to the Facility, with sublimits of no less than \$10,000,000 each for flood and earthquake; and (ii) Boiler and Machinery insurance covering all objects customarily subject to such insurance, including boilers and turbines, in an amount equal to their full replacement value. Insurance coverages required as set forth for All-Risk Property Insurance may be supplied by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section.

Business Interruption insurance

Amount required to cover Seller's continuing or
increased expenses, resulting from full interruption,
for a period of twelve (12) calendar months

Business Interruption insurance shall cover loss of revenues and/or the increased expense to resume operations attributable to the Facility by reason of total or partial suspension or delay of, or interruption in, the operation of the Facility as a result of an insured peril covered under Property insurance as set forth above, to the extent available on commercially reasonable terms as determined by Company, subject to a reasonable deductible which shall be the responsibility of Seller. Notwithstanding any other provision of this PPA, Seller shall not be required to have Business Interruption insurance until the effective date of this PPA. Insurance coverages required as set forth for Business Interruption Insurance may be supplied

EXECUTION VERSION

by either Orchard Mesa Irrigation District, or by Grand Valley Water Users Association, or by either or both of them in combination, so long as the insurance coverage obtained by both entities is sufficient, taken together, to meet the requirements of this section.

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EXHIBIT D
(to PPA)

**SELLER'S REQUIRED GOVERNMENTAL AUTHORITY PERMITS, CONSENTS,
APPROVALS, LICENSES AND AUTHORIZATIONS TO BE OBTAINED**

United States Bureau of Reclamation Approval of the Assignment Agreement for Contract for Lease of Power Privilege among the United States of America, the Grand Valley Water Users Association, the Orchard Mesa Irrigation District, and Public Service Company of Colorado:
Contract No. 0-07-40-P0180

Contract No. 0-07-40-P0180
Amendment No. 1

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION
GRAND VALLEY PROJECT

AMENDMENT
TO CONTRACT NO. 0-07-40-P0180
LEASE OF POWER PRIVILEGE
AMONG
THE UNITED STATE OF AMERICA,
GRAND VALLEY WATER USERS ASSOCIATION
AND
ORCHARD MESA IRRIGATION DISTRICT
FOR
THE OPERATION AND MAINTENANCE
OF THE
GRAND VALLEY POWERPLANT

PREAMBLE	1
CONTRACT SUPERSEDED	2
DEFINITIONS	3
LEASE OF POWER PRIVILEGE	5
TERM OF CONTRACT	5
UNITED STATES EXPENSES	5
LEASE PAYMENTS TO THE UNITED STATES	7
OPERATIONS AND MAINTENANCE PLAN	7
ENVIRONMENTAL COMPLIANCE	8
POWERPLANT OPERATION, MAINTENANCE AND REPLACEMENT	9
REPORTS AND INSPECTIONS	9
PRIVATE EQUIPMENT	10
DELIVERY OF WATER FOR POWER	10
ADMINISTRATION OF PROJECT WATER RIGHTS	10
INTERRUPTIONS IN DELIVERY OF WATER	12
MEASUREMENT OF ENERGY	12
FAILURE TO MAKE PAYMENTS	12
DEFAULT; REMEDIES; CANCELLATION	12
INSURANCE	14
INDEMNITY	15
TERMINATION	15
DUTY TO SURRENDER	16
DISTRIBUTION OF REVENUES	16
POWERPLANT RESERVE AND REHABILITATION AND REPLACEMENT ACCOUNTS	17
STATEMENT OF COSTS	19
AUDIT	19
NOTICES	20
RULES, REGULATIONS AND DETERMINATIONS	20
ENTIRETY CLAUSE	20
OFFICIALS NOT TO BENEFIT	21
AMENDMENT	21
SEVERABILITY	21
ASSIGNMENT LIMITED—SUCCESSORS AND ASSIGNS OBLIGATED	21
LIMITATION OF LIABILITY	21

AMENDMENT
TO CONTRACT NO. 0-07-40-P0180
LEASE OF POWER PRIVILEGE
AMONG
BUREAU OF RECLAMATION,
GRAND VALLEY WATER USERS ASSOCIATION
AND
ORCHARD MESA IRRIGATION DISTRICT FOR
THE OPERATION AND MAINTENANCE OF THE
GRAND VALLEY POWERPLANT

THIS Amendment to Contract No. 0-07-40-P0180 is made this _____ day of _____, 2011 (the "Effective Date"), pursuant to the Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto, and particularly the Act of August 4, 1939 (53 Stat. 1189) as amended, among the BUREAU OF RECLAMATION, DEPARTMENT OF THE INTERIOR, hereinafter referred to as the "United States"; the GRAND VALLEY WATER USERS ASSOCIATION, a corporation organized and existing under laws of the State of Colorado, having its principal place of business at Grand Junction, Colorado, hereinafter referred to as the "Association"; and ORCHARD MESA IRRIGATION DISTRICT, an irrigation district organized and existing under the laws of the State of Colorado, having its principal place of business at Palisade, Colorado, hereinafter referred to as the "District."

PREAMBLE

1. The United States has constructed the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, hereinafter called the Project.
2. The United States, the Association and Public Service Company of Colorado (Company or Xcel Energy) entered into a contract dated June 19, 1931, providing, among other things, for the construction, operation and maintenance, without expenditure of funds by the United States, of a powerplant known as the Grand Valley Powerplant (as defined herein), and appurtenant facilities upon the Project, and which contract, as extended by the interim contract of July 2, 1959, expired on December 30, 1960. Subsequently, the United States, the Association and the Company entered into a similar contract dated December 30, 1960, and said contract was twice extended and modified by including the District as a participant. Said contract expired on December 31, 1990.
3. The United States entered into a Contract for the Lease of Power Privilege with the Company, the Association and the District on December 12, 1990 (Contract), pursuant to the

Act of June 17, 1902 (32 Stat. 388) and acts amendatory thereof or supplementary thereto; and particularly the Act of August 4, 1939 (53 Stat. 1189).

4. On September 4, 1996, a Stipulation and Agreement in Case No. 91CW247, District Court, Water Division No. 5 (State of Colorado), incorporated into the Orchard Mesa Check Case Decree (as defined herein), was entered into between the United States, the Association, the District, and various other entities relating to the operation of the Orchard Mesa Check (as defined herein).

5. Due to the impending closure of the Cameo Generating Station on December 31, 2010, pursuant to Article 38 of the Contract, the Company assigned its rights and responsibilities under the Lease of Power Privilege Contract No. 0-07-40-P0180 to the Association and the District on December 30, 2010, and the United States approved such assignment.

6. The interests of the parties to this Amendment will be best served by the Association and the District providing for the operation and maintenance, including replacements, of the Grand Valley Powerplant and Private Equipment (as defined herein) in accordance with the terms and conditions hereof, without expenditure of funds by the United States.

7. The Association and the District have contracted to operate and maintain and to carry water in Project facilities to the Grand Valley Powerplant for the purposes of generating hydroelectric power at no expense to the United States in accordance with provisions of Contract No. 14-06-400-326, as amended.

8. The Grand Valley Powerplant is a part of the works of the Project and title to all the Project works, including the Grand Valley Powerplant, stands in the name of the United States, except the Private Equipment.

9. The Association and the District have purchased the Private Equipment at the Grand Valley Powerplant from the Company.

10. The Contract must be amended to define the responsibilities of the United States, the Association, and the District, following the Company's assignment of its responsibilities under the Contract.

NOW, THEREFORE, in consideration of the mutual and dependent stipulations and covenants herein contained, the parties to this Amendment agree as follows:

CONTRACT SUPERSEDED

1. This Amendment shall amend and supersede the Contract in its entirety.

DEFINITIONS

2. For the purpose of this Amendment, the following definitions shall apply:

(a) "Association's Irrigation Right" means the water right described in Article 2.(l)2. herein.

(b) "District's Irrigation Right" means the water rights described in Article 2.(l)1. herein.

(c) "Grand Valley Powerplant" means the Grand Valley Powerplant and the appurtenant facilities and land on which they sit, which shall include the powerhouse, machinery, equipment, penstocks, intake structure, trash racks, ice sluiceway, headgates, draft tubes and discharge apron, and all other structures and other property useful in the full and efficient operation of said Powerplant, including the land containing the Private Equipment described hereunder adjacent to said Powerplant; but shall not include the Related Facilities, as defined in Article 2.(n) herein, or the Private Equipment, as defined in Article 2.(k) herein. The Grand Valley Powerplant shares an afterbay with the Pumping Plant.

(d) "Grand Valley Project" or "Project" shall mean the Grand Valley Irrigation Project, a Federal Reclamation Project, in Mesa County, Colorado, consisting of the Garfield Gravity Division and the Orchard Mesa Division. Both the Garfield Gravity Division and the Orchard Mesa Division divert water from the Colorado River at the Project's diversion dam on the Colorado River. The irrigation water for the Garfield Gravity Division is then conveyed through the Government Highline Canal and delivered by gravity to other laterals within the Grand Valley Project pursuant to contract with the Association. The irrigation water for the Orchard Mesa Division is conveyed through the Government Highline Canal and the Orchard Mesa Power Canal to the Pumping Plant, where it is pumped for distribution to the lands of the District (see Exhibit A).

(e) "Interconnection Agreement" means the Small Generator Interconnection Agreement between Public Service Company of Colorado, d/b/a Xcel Energy, and the Association and the District dated February 15, 2011, relating to the Grand Valley Powerplant, and any future amendments and extensions thereto or replacements thereof.

(f) "Orchard Mesa Check" or "Check" means the Orchard Mesa Check, consisting of three water level control gates and the bypass channel by which the water level in the common afterbay of the Grand Valley Powerplant and the District's pumping plant, known as the Pumping Plant (as defined herein), can be raised to a level which causes water to flow through the bypass channel and return to the Colorado River immediately upstream of the Grand Valley

Irrigation Company (GVIC) diversion dam, and shall include any replacement structure in the same location which performs the same function.

(g) "Orchard Mesa Check Case Decree" means the Findings of Fact, Conclusions of Law, Judgment and Decree entered on October 1, 1996, in Case No. 91CW247, District Court, Water Division 5, State of Colorado, including without limitation the Stipulation and Agreement attached thereto as Attachment 1 and incorporated therein by reference.

(h) "Ordinary Operation and Maintenance" means the ongoing actions, work and other activities necessary to operate the Grand Valley Powerplant and the Related Facilities to produce hydroelectric power and to maintain them in good and efficient operating condition. Ordinary Operation and Maintenance includes all maintenance other than Replacement Maintenance, as defined in Article 2.(o) herein.

(i) "Power Purchase Agreement" means the Energy Purchase Agreement between Public Service Company of Colorado and the Association and the District dated February 11, 2011, relating to the Grand Valley Powerplant and any future amendments and extensions thereto or replacements thereof.

(j) "Power Right" means the water right described in Article 2.(l)3. herein.

(k) "Private Equipment" means all equipment provided by the Association and the District for the control, transformation, distribution and metering of power from the Grand Valley Powerplant. A list of the Private Equipment that exists as of the Effective Date is attached hereto as Exhibit B.

(l) "Project Water Rights" means:

(1) The right of the District to divert up to 460.2 cubic feet per second (cfs) of water through the headgate of the Government Highline Canal under priority dates of October 1, 1900, and October 25, 1907, for irrigation purposes and for operation of the Pumping Plant;

(2) The right of the Association to divert up to 730 cfs of water through the headgate of the Government Highline Canal under priority date of February 27, 1908, for irrigation purposes; and

(3) The right of the United States to divert up to 400 cfs of water through the headgate of the Government Highline Canal under the originally-decreed priority date of February 27, 1908, for power generating purposes during the irrigation season and up to 800 cfs of water during the non-irrigation season. The priority date for this water right will be as stipulated in the Orchard Mesa Check Case Decree.

(4) Any water from other sources that may from time to time be available for power generation.

(m) "Pumping Plant" means the hydro pumping facility of the District used to lift water to the canals serving the lands within the District, which Pumping Plant shares an afterbay with the Grand Valley Powerplant.

(n) "Related Facilities" means the facilities used to divert and transport water to the Grand Valley Powerplant and to return such water to the Colorado River after power has been produced. Related Facilities include, without limitation, the Grand Valley Project Diversion Dam and appurtenant works, the Government Highline Canal from the Diversion Dam to a point near Tunnel No. 3, the Colorado River Siphon, the District's Power Canal, the forebay to the Grand Valley Powerplant and the common afterbay of the Grand Valley Powerplant and the Pumping Plant.

(o) "Replacement Maintenance" means replacement of major Grand Valley Powerplant components, including, but not limited to, turbines, generators, penstocks and governors, and replacement of or major improvements to the Related Facilities, because of an exhausted physical condition or obsolescence which requires the purchase of new major components or improvements to existing components.

LEASE OF POWER PRIVILEGE

3. Subject to the conditions and terms herein, the United States leases to the Association and the District, with the right of ingress and egress, the exclusive right to utilize the Grand Valley Powerplant to produce and sell hydroelectric power and for the purposes of performing the provisions of this Amendment.

TERM OF CONTRACT

4. This Amendment shall become effective on the Effective Date and shall remain in force until January 1, 2031, unless terminated by mutual consent among the parties to this Amendment or by default or cancellation under provisions of this Amendment.

UNITED STATES EXPENSES

5. (a) When required by the United States, the Association and the District shall advance funds in minimum increments of \$10,000 (Incremental Advance) to the United States to pay major future expenses which may be incurred by the United States under this Amendment. Funds advanced will be paid by the Association and the District in the same proportion as outlined in Article 6 herein. Expenses shall include an hourly rate, travel, materials, mailing, copying costs, and administration overhead costs at the then current rate, as incurred by the United States personnel, contractors or consultants; provided, however, that no charge shall be assessed for information,

services, or relationships that would normally be provided by the United States to the public at no charge. United States expenses under this Amendment may include, but are not limited to, the following:

- (1) Environmental compliance.
- (2) Inspections of the Grand Valley Powerplant called for by the United States, either routine or based upon a unique problem, major rehabilitation, or a reasonable concern for the integrity of a Federal structure or operation of other Grand Valley Powerplant features.
- (3) Preparation or review of technical studies.
- (4) Review of designs, specifications, legal and other documents.
- (5) Site visits and participation in meetings.
- (6) Copies of reports, drawings, and similar data.
- (7) Consultation, observation, review, and comment on tests of piping, valving, automated equipment, supervisory control systems, and any and all other aspects of construction, operation, maintenance and replacement that might impact the integrity of a Federal structure or environmental commitments.
- (8) Work necessitated by non-performance of the Association and the District.
- (9) The expenses incurred in the event of failure of Federal structures resulting from operations and/or maintenance of the Grand Valley Powerplant.
- (10) All administrative costs incurred in the execution of the above-listed activities.

(b) The United States will establish a non-interest bearing account for the funds advanced by the Association and the District; an initial advance of \$10,000 will be required upon execution of this Amendment. At such time when funds in the account are anticipated to be reduced to or below \$5,000, the United States will request an Incremental Advance of funds as provided in Article 5.(a) herein. The United States will not pay or credit the Association and the District for any interest. When performing work identified in Article 5.(a) herein, the United States will furnish the Association and the District, not less than on a quarterly basis prior to completion of the activity, an accounting of activity, an itemization of all expenses incurred under Article 5 herein, and a reconciliation of such expenses billed with the amounts requested under Article 5 herein. After completion of the activity an accounting of expenses will be furnished to the Association and the District on an annual basis or upon request of further Incremental Advances.

(c) Each request for an Incremental Advance of funds under Article 5 herein shall be in writing and shall include a statement describing the anticipated use of the requested funds. The United States will discuss with the Association and the District in advance of requesting funds to identify anticipated activities related to the Grand Valley Powerplant. The Association and the District shall advance the requested funds within 30 days after receiving the request.

(d) Following the expiration, cancellation or termination of this Amendment, the United States will determine its expenses associated with the Grand Valley Powerplant and submit a final accounting report to the Association and the District

within sixty days after the date of expiration, cancellation or termination. The United States will refund to the Association and the District any surplus in the account within 60 days after submitting the final accounting report. The Association and the District shall pay any deficit in the account within 60 days after receipt of the final accounting report.

LEASE PAYMENTS TO THE UNITED STATES

6. (a) Annual lease payments shall be made to the United States for the use of the Grand Valley Powerplant. Annual lease payments shall be determined by multiplying the total number of kilowatt hours of generation in a calendar year by the mill levy assessment. Total kilowatt hours of generation shall be based upon the meter reading as referenced in Article 15 herein. The initial mill levy assessment shall be 3 mills. Annually, the mill levy assessment shall be increased by 3 percent. The Association and the District shall each pay their proportional share of the total annual lease payment to the United States as follows:

Association: Fifty Percent (50%)

District: Fifty Percent (50%)

(b) Each payment shall be made on or before April 1 in each year for the total generation during the prior calendar year as reported in Article 10 herein. The United States will send an invoice for lease payments to the Association and the District at least 30 days prior to their due date. Invoices will be mailed to the Association and the District as specified in Article 26 herein.

(c) Lease Payments to the United States shall reference this Amendment by title and number. The Bureau of Reclamation will provide a billing document to the Association and to the District. Payment will be made payable to the "Bureau of Reclamation," and payment instructions will be followed as stated in the billing document, unless directed otherwise by the United States.

(d) The obligation for payments by the Association and the District in Article 6.(a) herein is separate and default in payment by one entity shall not be deemed a default by the other entity nor shall the other entity be obligated to assume the burden of the defaulting entity.

OPERATIONS AND MAINTENANCE PLAN

7. (a) On or before June 1, 2011, the Association and the District shall prepare and submit to the United States for its review and concurrence an operations and maintenance plan (Operations and Maintenance Plan) for the Grand Valley Powerplant. The Operations and Maintenance Plan will contain as a minimum the following:

(1) Operating procedures for major equipment.

- (2) Procedures for meeting emergencies.
- (3) Description and schedule for all anticipated Replacement Maintenance of items greater than \$50,000.
- (4) Description and schedule for all anticipated improvements to the Grand Valley Powerplant and to the Related Facilities.

(b) Annually, by June 1 of each year, the Association and the District shall review and, if necessary, update the Operations and Maintenance Plan to reflect changes to operating procedures, changed emergency procedures, new Replacement Maintenance schedules and new schedules for improvements to the Grand Valley Powerplant and the Related Facilities and shall submit the updated Operations and Maintenance Plan to the United States for review and concurrence.

(c) The United States shall concur with the Operations and Maintenance Plan and any updates thereto so long as:

- (1) The concurrence and the performance or effectuation of such submission will not have a material adverse impact on the Project; and
- (2) Required NEPA (National Environmental Policy Act) compliance for implementation of the proposed activity and associated concurrence has been completed; and
- (3) Such proposed activity otherwise complies with Federal law, applicable standards, contracts, and this Amendment.

In the event the United States determines that any submission or any portion thereof does not satisfy the foregoing criteria, the United States shall provide the Association and the District with a written notice describing such defect in reasonable detail. The United States may concur with any submission in whole or in part and may reject any portion of a submission without rejecting the whole.

(d) The United States' reviews and concurrences are to ensure, to the extent that the Grand Valley Powerplant is an integral part of the Project, that its operation, maintenance and replacement will not adversely affect the structural or operational soundness, or jeopardize the safety or operational requirements of the Project, and that those properties to which the United States retains title are adequately maintained and protected.

ENVIRONMENTAL COMPLIANCE

- 8. (a) National Environmental Policy Act (NEPA) compliance has been completed by the United States for this Amendment.
- (b) The Association and the District, in their Ordinary Operation and Maintenance and Replacement Maintenance of the Grand Valley Powerplant, shall comply with Federal and State environmental laws and regulations including, but not limited to, the storage and disposal of hazardous waste.

POWERPLANT OPERATION, MAINTENANCE AND REPLACEMENT

9. (a) The Association and the District, on the Effective Date of this Amendment, shall assume the operation and maintenance of the Grand Valley Powerplant and will operate and maintain said Powerplant for the term of this Amendment, performing all Ordinary Operation and Maintenance and Replacement Maintenance at their own expense, in accordance with accepted operation practices, procedures and standards of the industry, and in such a manner that the Grand Valley Powerplant will be returned at the expiration, cancellation or termination of this Amendment in as good a condition as when the Association and the District assumed operation and maintenance under this Amendment, reasonable wear excepted.
- (b) The Association and the District shall not operate or make any modifications to the Grand Valley Powerplant which could adversely affect the structural or operational soundness, jeopardize the safety, or adversely affect the operation of the Project.
- (c) Representatives of the parties to this Amendment shall make a scheduled inspection of the Grand Valley Powerplant and Private Equipment at least once a year, and shall confer at least once each calendar year to review the Association and the District's past operation and maintenance of the Grand Valley Powerplant and Private Equipment and establish maintenance and replacement schedules for the ensuing calendar year.
- (d) The United States acknowledges that the Association and the District have entered into the Power Purchase Agreement, relating to the sale of energy produced by the Grand Valley Powerplant, and the Interconnection Agreement, relating to the interconnection of the Grand Valley Powerplant to the electric system of Public Service Company of Colorado, d/b/a Xcel Energy, and that the Association and the District have obligations to operate and maintain the Grand Valley Powerplant in accordance with the provisions of those agreements. All costs incurred by the Association and the District to comply with the provisions of this Amendment, the Power Purchase Agreement and the Interconnection Agreement shall be considered, for purposes of this Amendment, to be part of the costs of Ordinary Operation and Maintenance of the Grand Valley Powerplant.

REPORTS AND INSPECTIONS

10. (a) The Association and the District shall keep records, on a monthly basis, of the power generation in kilowatt hours at the Grand Valley Powerplant. On or before February 1 in each year beginning in 2012, the Association and the District shall furnish to the United States a report showing the monthly power generation in kilowatt hours at the Grand Valley Powerplant for the prior calendar year.

(b) The Association and the District agree that authorized agents of the United States shall have access to the Grand Valley Powerplant and Private Equipment at all reasonable times for the purpose of inspection, and further agree to permit such agents access to the operation, maintenance and replacement records of said Powerplant and Private Equipment.

PRIVATE EQUIPMENT

11. (a) The Association and the District shall provide, at their own expense, the Private Equipment needed for the control, distribution and sale of power from the Grand Valley Powerplant.

(b) The Association and the District, at their own expense, shall operate, maintain and replace the Private Equipment, keeping it in operable condition during times that the Grand Valley Powerplant is in operation.

DELIVERY OF WATER FOR POWER

12. Subject to the provisions of Article 13 herein, all water available to the Association and District in excess of that decreed for Project irrigation and pumping purposes, the Power Right and any other water that may be available to the Association and the District for power purposes, within the restrictions of the carrying capacity of the Project canals, shall be delivered by the Association and the District to the Grand Valley Powerplant. The Association and the District shall utilize such water up to the full capacity of the Grand Valley Powerplant, subject to the provisions of this Amendment. Nothing in this Amendment shall obligate the Association or the District to make water diverted or available under the Association's Irrigation Right or the District's Irrigation Right available for the production of power, and in times of shortage, the Association's Irrigation Right and the District's Irrigation Right shall always have priority for diversion and use over the Power Right or any other water available for production of power.

ADMINISTRATION OF PROJECT WATER RIGHTS

13. The Project Water Rights shall be administered in accordance with the following:

(a) The parties to this Amendment acknowledge that the GVIC has the right to divert 520.81 cfs of water for irrigation purposes under priority date of August 22, 1882, through the headgate of the GVIC Canal, which water right is senior to all of the Project Water Rights. The parties to this Amendment further acknowledge that GVIC has the right to divert 119.47 cfs of water for irrigation purposes under adjudication date of July 25, 1941, and appropriation date of April 26, 1914, through the headgate of the GVIC Canal. By use of the Check, some or all of the water needed to satisfy GVIC's water rights described above can be diverted by exchange through the Orchard Mesa power canal and utilized for power generation or pumping purposes and returned to the Colorado River upstream of the GVIC Diversion Dam for use by

GVIC, subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree.

(b) The parties to this Amendment acknowledge that the Association has certain contractual obligations to transport 23.5 cfs of irrigation water for the Palisade Irrigation District, which obligations are subject to that amount of water being available in priority from water flowing in the Colorado River and space being available for transportation of that water right in the Government Highline Canal, the most limiting structure in said canal being Tunnel No. 3.

(c) The obligation to carry more than 400 cfs of the District's Irrigation Right is subordinate to the obligation to carry the 23.5 cfs of irrigation water for the Palisade Irrigation District.

(d) The parties to this Amendment also acknowledge that the United States and Association are obligated by contract to transport 80 cfs of irrigation water for the Palisade Irrigation District and 40 cfs of irrigation water for the Mesa County Irrigation District and that the obligation to transport such water takes precedence over transportation of the Project Water Rights in the Government Highline Canal.

(e) Pursuant to and subject to the provisions, terms and conditions of the Orchard Mesa Check Case Decree, water can be diverted by exchange at the diversion dam of the Project, transported through the Government Highline Canal and returned to the Colorado River by the operation of the Check. Such water can be utilized to furnish water for generation of power at the Grand Valley Powerplant and for operation of the District's Pumping Plant. The parties to this Amendment agree to operate the Check in a manner consistent with the Orchard Mesa Check Case Decree.

(f) At such times as the supply of water in the Colorado River is insufficient to fill the Project Water Rights, or at such time as the capacity of the Government Highline Canal is insufficient to carry the 80 cfs of irrigation water for the Palisade Irrigation District and the 40 cfs for the Mesa County Irrigation District and all of the Project Water Rights, the Power Right will be first reduced before any reduction is made to the Association's Irrigation Right and to the District's Irrigation Right.

(g) The District agrees that it will make no claim against the Association or the United States for the expenses incurred by the District resulting from implementation of the Check for the purposes specified in Article 13.(e) herein. Notwithstanding the provisions of Article 13.(e), this Amendment shall never be construed to obligate the District to utilize the Check to satisfy the priorities of any third party which are junior to and subordinate to the Project Water Rights.

(h) Nothing in this Amendment is meant to conflict with the Orchard Mesa Check Case Decree and, if inconsistencies exist, the provisions of the Orchard Mesa Check Case Decree shall prevail.

INTERRUPTIONS IN DELIVERY OF WATER

14. (a) The water to be made available to the Grand Valley Powerplant shall be continuous as far as due diligence will permit, with no liability for damages incurred when by reason of uncontrollable forces, suspension of the diversion of water to the canal system or any part thereof interferes with delivery of water at the Grand Valley Powerplant. The term "uncontrollable forces," for purposes of this Amendment, means any cause beyond the control of the parties to this Amendment affected, including, but not limited to failure of facilities, flood, earthquake, storm, lightning, inclemencies of the season, fire, epidemic, war, riot, civil disturbance, labor disturbance, sabotage, and restraint by court or public authority which, by exercise of due diligence and foresight, such parties to this Amendment could not reasonably be expected to avoid. Inability to fulfill any obligation of this Amendment caused by uncontrollable forces shall be removed with all reasonable dispatch.

(b) The Association, the District and the United States, whichever is operating the Project, shall have the right to cease delivery of water to the Grand Valley Powerplant temporarily whenever it shall become necessary to make repairs, replacements or additions to the Related Facilities with no liability for damages and shall give reasonable notice to each party to this Amendment of such temporary suspension of service. All such repairs, replacements and additions will be made with best efforts and diligence so that water will be available at the Grand Valley Powerplant without undue delay.

MEASUREMENT OF ENERGY

15. As part of the Company's assignment of interests and responsibilities to the Association and the District, new meters to measure energy production have been installed. These meters are the property of Xcel Energy and will be operated and maintained by Xcel Energy, as provided for in the Interconnection Agreement.

FAILURE TO MAKE PAYMENTS

16. Upon failure of the Association and the District to pay any sum of money when due, as provided in this Amendment, that amount due shall bear interest at a rate which is four percent (4%) per annum over the Federal Reserve Bank discount rate in effect on the due date until paid in full.

DEFAULT; REMEDIES; CANCELLATION

17. (a) Each or any of the following events shall constitute default under this Amendment.

- (1) Failure of any party to this Amendment to comply with each and every material condition of this Amendment;
- (2) Abandonment of the Grand Valley Powerplant by the Association and the District;

- (3) Abandonment of all or part of that portion of the Grand Valley Irrigation Project essential to the operation of the Grand Valley Powerplant, by the United States and/or the Association and the District; or
- (4) Failure or refusal to pay when due any sum required by this Amendment.

(b) Any party to this Amendment not in default may give written notice to the defaulting party, as defined Article 17.(a)(1) through (4) herein, and the defaulting party shall then be entitled to correct the default condition specified in the notice as follows: If the default is for failure to pay money, the money plus interest must be paid within 60 days to correct the default. If the money plus interest is not paid within 60 days, then the defaulting party shall be subject to the provisions of Article 17.(f) herein. If the default is for something other than for failure to pay money, the defaulting party shall have a reasonable time to correct the default if the action necessary to correct the default is commenced within thirty (30) days after the notice and if full correction of the default is diligently pursued to conclusion. If the action is not commenced within the 30 days, or if the action is timely commenced but not diligently pursued to full correction of the default, then the defaulting party shall be subject to the provisions of Article 17.(f) herein.

(c) Failure on the part of the part of the Association and the District to operate the Grand Valley Powerplant without just cause or to maintain the Grand Valley Powerplant in good condition and repair shall be considered to be abandonment of the Grand Valley Powerplant.

(d) The United States reserves the right to cancel all or any part of this Amendment in the event of failure by the Association and the District to comply with any written directive or instruction of the United States pertaining to any requirement under this Amendment, actual or threatened material impairment of the Project caused by the operation of the Grand Valley Powerplant, failure to maintain insurance, failure to make payments to the United States, or any other default by the Association and the District, after notice and failure to timely correct the condition as provided in Article 17.(b) herein.

(e) Any prevention, delay, nonperformance, or stoppage due to an act of nature or inability to obtain labor or materials or reasonable substitutes for either shall excuse nonperformance for a period equal to any such prevention, delay, nonperformance, or stoppage, except obligations for the payment of monies due under this Amendment.

(f) Each party to this Amendment may use any remedy available either at law or in equity against a party in default hereof. The waiver of a default or a provision of this Amendment shall not be deemed to be a waiver of any other provision or of a subsequent default of the same provision.

(g) If by reason of an act of default on the part of either the Association or the District, the United States has the right to and elects to cancel this Amendment with respect to the defaulting party pursuant to the provisions of Article 17 herein, then the

non-defaulting party shall have the right and option to assume without charge the obligations and rights of the defaulting party under this Amendment. If the non-defaulting party elects to assume the position of the defaulting party to operate the Grand Valley Powerplant, then effective the date this Amendment is cancelled and terminated with respect to the defaulting party the other party shall assume and agree to perform all of the provisions of this Amendment which accrue or are to be performed subsequent to the date of cancellation and, at that time, it shall assume and agree to perform all provisions of this Amendment otherwise required to be performed by both the Association and the District, including, but not limited to, the obligation to pay the United States all payments which subsequently accrue pursuant to Articles 5 and 6 herein.

INSURANCE

18. (a) The Association and the District shall maintain workmen's compensation insurance on their own employees as may be necessary to comply with current applicable law.
- (b) The Association and the District shall, at their sole cost and expense, keep or cause the Grand Valley Powerplant to be kept insured for the mutual benefit of the United States, the Association and the District, against loss or damage by fire, flood, and such other risks as are now or hereafter included in an extended coverage endorsement in common use for hydroelectric powerplants. Insurance proceeds shall be used by the Association and the District to replace or repair the compensated loss, subject to review and concurrence by the United States.
- (c) Throughout the term of this Amendment, the Association and the District shall, at their sole cost and expense, keep or cause to be kept in force, for the benefit of the United States, the Association and the District, comprehensive broad form general public liability insurance in the amount of at least \$2,000,000 against claims and liability for personal injury, death, or property damage arising from the use, occupancy, disuse, or conditions of the Grand Valley Powerplant and, adjoining areas or ways, providing coverage for bodily injury or death to any person or persons for each accident or occurrence; and for property damage for each accident or occurrence.
- (d) The amount of insurance coverage shall be adjusted annually by the insurance company based upon accepted standard adjustment practices.
- (e) For each policy or certificate evidencing insurance, the Association and the District shall instruct the insurance company to notify the United States not less than 30 days prior to the effective date of any cancellation, termination, or assignment of the policy or certificate or any modification of the policy or certificate. The notice shall be sent to the United States and shall identify the Amendment, the policy and the insured.

(f) The Association and the District agree to maintain insurance coverage as stated in Article 18 herein throughout the term of this Amendment in substantially the same form and amounts as are provided for in the attached certificates of insurance identified as and made a part thereof.

(g) Any insurance proceeds remaining after complying with the provisions of this Amendment shall be the Association and the District's sole property.

INDEMNITY

19. (a) The Association agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the Association to properly operate and maintain the Association's facilities associated with delivery of water to the Grand Valley Powerplant.

(b) The District agrees to indemnify the United States for any injury, loss or damage incurred by the United States resulting from the failure of the District to properly operate and maintain the District's facilities associated with delivery of water to the Grand Valley Powerplant.

(c) Notwithstanding Articles 19.(a) and (b) herein, no party to this Amendment shall be liable to any other party for any injury, loss or damage to the extent that such is caused by the negligence of another party or parties other than the Association, the District or the United States, including their officers, agents, contractors or employees.

(d) The United States shall in no way be liable for the operations of the Association or the District under this Amendment.

(e) The United States shall not be liable for any review, inspection, or concurrence which it may perform or fail to perform under the terms of this Amendment.

(f) Each party to this Amendment will be responsible for acts or omissions of its contractors.

(g) Nothing in this Amendment shall be construed as releasing the United States from liability for its own negligence; *Provided*, That nothing herein shall be deemed to increase the liability of the United States beyond the provisions of the Federal Tort Claims Act, Act of June 25, 1948, 62 Stat. 982 (28 U.S.C. § 1346(b), 2671 et seq.) or other applicable law.

TERMINATION

20. This Amendment may be terminated 1) by mutual consent of the parties to the Amendment; or 2) in the event that the amount of Power Revenues (as defined in Article 22 herein) is insufficient for the Association and the District to satisfy their respective obligations under this Amendment. Prior to terminating this Amendment

because of insufficient Power Revenues, the parties shall meet and discuss, in good faith, mutually acceptable alternatives to address the insufficient revenues and maintain this Amendment in full force and effect. If the parties are not able to mutually agree on such alternatives, either the United States or the Association and the District may then terminate this Amendment on ninety (90) days' notice to the other party or parties. Upon termination of this Amendment under this Article, operation of the Grand Valley Powerplant shall revert to the title holder, the United States. The United States will assume operation and maintenance of the Grand Valley Powerplant, initiate the lease of power privilege process, or cease operations of the Grand Valley Powerplant.

DUTY TO SURRENDER

21. (a) If, after expiration of the term of this Amendment, cancellation of this Amendment due to default by the Association and the District or other termination of this Amendment the United States elects to retain the Grand Valley Powerplant for its own use or lease to someone or some entity other than the Association and the District, the Private Equipment may be purchased by the United States for book value of the Private Equipment which is defined as original cost less accumulated depreciation. Said option shall be exercised by payment of the book value by the United States to the Association and the District on or before the date of expiration, cancellation or termination. The book value of the Private Equipment shall be quoted by the Association and the District upon demand.
- (b) In the event, during the term, or upon expiration of this Amendment, it is no longer feasible to operate the Grand Valley Powerplant as determined by the parties to this Amendment or upon cancellation or termination of this Amendment, and the option to purchase in Article 21.(a) herein is not exercised, the Private Equipment will be removed from Federal lands at the option of the United States. Such removal shall be at the sole expense of the Association and the District within a reasonable period of time and as approved by the United States.
- (c) Upon cancellation or termination, any remaining lease payments shall be determined as of the date of cancellation or termination in the same manner as set forth in Article 6 herein, and payment shall be made within 60 days of the date of cancellation or termination. Any other remaining debts shall be the responsibility of the incurring party unless otherwise provided for in this Amendment.

DISTRIBUTION OF REVENUES

22. (a) All power revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations ("Power Revenues") shall be applied in the following order of priority:

- (1) To make lease payments to the United States under Article 6 herein and payments for Incremental Advances to the United States under Article 5 herein.
- (2) To pay the annual Ordinary Operation and Maintenance costs of the Grand Valley Powerplant, and the annual Ordinary Operation and Maintenance costs of the Related Facilities to the extent the Related Facilities are used to transport water to the Grand Valley Powerplant and to return that water to the Colorado River.
- (3) To create and maintain the Powerplant Reserve Account (see Article 23 herein).
- (4) To create and maintain the Powerplant Rehabilitation and Replacement Account (see Article 23 herein).
- (5) To be retained by the Association and the District and used in the manner and for the purposes specified in Article 22.(b) herein.

(b) All Power Revenues received by the Association and the District from the Grand Valley Powerplant hydroelectric operations that are not used for the purposes specified in Articles 22.(a)(1) through (4) herein ("Excess Power Revenues") shall be retained by the Association and the District and used as follows:

- (1) One-half of the Excess Power Revenues shall be retained by the Association and shall be used by the Association to operate, maintain, repair, make replacements to and improve the Garfield Gravity Division of the Project.
- (2) One-half of the Excess Power Revenues shall be retained by the District and shall be used by the District to operate, maintain, repair, make replacements to and improve the Orchard Mesa Division of the Project.

POWERPLANT RESERVE AND REHABILITATION AND REPLACEMENT ACCOUNTS

23. (a) The Association and the District shall create and maintain a Powerplant Reserve Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Reserve Account."
- (2) On or before February 28, 2013, the Association and the District shall deposit into the Powerplant Reserve Account from the Power Revenues an amount equal to the sum of the Ordinary Operation and Maintenance expenses (but not including Replacement Maintenance expenses) for the Powerplant for the calendar year 2012 and the annual lease payment due to the United States for the calendar year 2012. This amount shall be referred to in Article 23.(a) herein as the "Annual O&M Base Amount."
- (3) Subject to the provisions of Article 23.(a)(4) through (7) herein, the Association and the District shall maintain in the Powerplant Reserve Account an amount at least equal to the Annual O&M Base Amount, increased or decreased annually by the change in the Consumer Price Index for All Urban Consumers (CPI-U) for the Denver-Boulder-Greeley, Colo., metropolitan

area. If in the future such index no longer exists, the parties to this Amendment shall choose a similar index to replace it.

- (4) The Association and the District shall be entitled to use the funds in the Powerplant Reserve Account for Replacement Maintenance expenses, improvements to the Grand Valley Powerplant and the Related Facilities, and for emergency or other unexpected costs related to the operation, maintenance and improvement of the Grand Valley Powerplant and the Related Facilities; *Provided*, That the funds in the Powerplant Reserve Account are used for these general purposes in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein. The specific projects or uses of the funds in the Powerplant Reserve Account shall be determined at the discretion of the Association and the District, also in a manner consistent with the Operations and Maintenance Plan described in Article 7 herein.
- (5) If the Association and the District use funds from the Powerplant Reserve Account during a calendar year, they shall replenish the Powerplant Reserve Account no later than February 28 of the following calendar year.
- (6) The Association and the District shall be entitled to use the Power Revenues to fund, replenish and otherwise maintain the Powerplant Reserve Account.
- (7) The Association and the District shall be entitled to let the interest earned on the funds in the Powerplant Reserve Account accrue to the Powerplant Reserve Account or to transfer any or all of such interest to the Powerplant Rehabilitation and Replacement Account, described in Article 23.(b) herein, at their discretion.

(b) The Association and the District shall create and maintain a Powerplant Rehabilitation and Replacement Account, which will be funded and used as follows:

- (1) The Association and the District shall create a single account that shall be known as the "Powerplant Rehabilitation and Replacement Account."
- (2) The Powerplant Rehabilitation and Replacement Account shall be funded from the Power Revenues, from interest earned on funds in the Powerplant Reserve Account, from interest earned on the funds in the Powerplant Rehabilitation and Replacement Account, and from funds from any other sources that the Association and the District determine at their discretion to deposit into the Powerplant Rehabilitation and Replacement Account. The amount of Power Revenues and other funds to be deposited into the Powerplant Rehabilitation and Replacement Account each year shall be determined by the Association and the District based on funding needs for anticipated Replacement Maintenance consistent with the Operations and Maintenance Plan developed in accordance with Article 7 herein, and for anticipated improvements to the Grand Valley Powerplant and the Related Facilities.
- (3) Subject to the provisions of Article 23.(b)(4) herein, the Association and the District shall use the funds in the Powerplant Rehabilitation and Replacement Account to improve the Powerplant and the Related Facilities and for Replacement Maintenance on the Grand Valley Powerplant; *Provided*, That

the funds in the Powerplant Rehabilitation and Replacement Account are used for these general purposes, the specific projects or uses of the funds in the Powerplant Rehabilitation and Replacement Account shall be determined at the discretion of the Association and the District.

- (4) If the Association and the District determine, in the exercise of their reasonable discretion, that some or all of the funds in the Powerplant Rehabilitation and Replacement Account are no longer needed to improve the Grand Valley Powerplant or the Related Facilities or for Replacement Maintenance, they shall be entitled to transfer the excess funds in the Powerplant Rehabilitation and Replacement Account to each of them, one-half to the Association and one-half to the District. Such excess funds that are transferred to the Association and the District shall be used for the purposes specified in Article 22.(b) herein.

(c) If the Association and the District fail to maintain either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund in accordance with the provisions of Article 23 herein, this shall be construed as default under this Amendment as specified in Article 17.(a)1. herein.

(d) Upon expiration of the term of this Amendment or upon any cancellation or termination of this Amendment, any amounts then remaining in either the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund, after fulfillment of obligations under this Amendment, shall be disbursed one-half to the Association and one-half to the District.

(e) The amounts required to be maintained in the Powerplant Reserve Fund or the Powerplant Rehabilitation and Replacement Fund may be adjusted from time to time as mutually agreed to by the United States, the Association and the District.

STATEMENT OF COSTS

24. The Association and the District shall submit annually to the United States, on or before June 30 of each year that this Amendment is in effect, an accounting showing Power Revenues received during the preceding calendar year and how such Power Revenues were applied during the preceding calendar year.

AUDIT

25. (a) The parties to this Amendment shall maintain accurate records and books of account in accordance with generally accepted accounting principles and consistent with this Amendment. Said books and records shall present fairly all costs and expenses utilized either directly or indirectly in computing any charges or payments to the other parties to this Amendment.

(b) Upon 30 days written notice each party to this Amendment shall afford the other party or its independent auditors reasonable access to the relevant records and books

of account during the term of the Amendment, and for a period of twenty-four months thereafter.

(c) The party to this Amendment that requests the audit under Article 25.(b) herein will be solely responsible for its own costs incurred to perform the audit.

NOTICES

26. (a) Any notice authorized or required to be given to the Association shall be delivered to or mailed postage prepaid to the Manager, Grand Valley Water Users Association, 1147 24 Road, Grand Junction, Colorado 81505. Any notice authorized or required to be given to the District shall be delivered to or mailed postage prepaid to the Manager, Orchard Mesa Irrigation District, 668 38 Road, Palisade, Colorado 81526. Any notice authorized or required to be given to the United States shall be delivered to or mailed postage prepaid to the Area Manager, Bureau of Reclamation, 2764 Compass Drive Suite 106, Grand Junction, Colorado 81506. Notice shall be effective on the date of delivery or mailing.

(b) The designation of the addresses or the addresses given above may be changed by notice given in the same manner as provided in Article 26 herein for other notices.

RULES, REGULATIONS AND DETERMINATIONS

27. (a) The parties to this Amendment agree that the delivery of water or the use of Federal facilities pursuant to this Amendment is subject to Reclamation law, as presently amended and supplemented, and the rules and regulations promulgated by the Secretary of the Interior under Reclamation law.

(b) The United States shall have the right to make determinations necessary to administer this Amendment that are consistent with the laws of the United States of America and the State of Colorado, and the express and implied provisions of this Amendment, and the rules and regulations promulgated by the Secretary of the Interior. Such determinations shall be made in consultation with the parties to this Amendment.

ENTIRETY CLAUSE

28. This Amendment constitutes the entire agreement between and among the parties to this Amendment with respect to the subject matter hereof and after the Effective Date hereof, shall supersede all prior agreements, contracts and understandings, written or oral, with respect to such subject matter. The parties to this Amendment acknowledge that the Association and the District intend to enter into a separate Operating Agreement between those two entities to set forth agreed procedures for their joint operation of the Grand Valley Powerplant. The Association and the District will provide a copy of the Operating Agreement to the United States after it is

executed by them. If there are any conflicts between the provisions in the Operating Agreement and this Amendment, this Amendment shall control.

OFFICIALS NOT TO BENEFIT

29. No member of or delegate to Congress or Resident Commissioner or officer of the Association or the District shall be admitted to any share or part of this Amendment or to any benefit that may arise herefrom, other than as a water user or landowner in the same manner as other water users or landowners or as a shareholder in the company.

AMENDMENT

30. This Amendment may not be amended, altered, or modified except in writing and must be signed by all of the parties to this Amendment.

SEVERABILITY

31. If any provisions of this Amendment or the application thereof to any person or circumstances shall be invalid or unenforceable to any extent, the remainder of this Amendment and the application of such provisions to other persons or circumstances shall not be affected thereby and may be enforced to the greatest extent permitted by law.

ASSIGNMENT LIMITED—SUCCESSORS AND ASSIGNS OBLIGATED

32. The provisions of this Amendment shall apply to and bind the successors and assigns of the parties to this Amendment, but no assignment or transfer of this Amendment or any right or interest therein shall be valid until approved in writing by the United States.

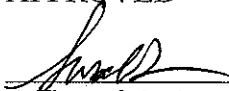
LIMITATION OF LIABILITY

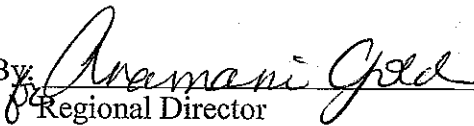
33. Subject to Article 19 herein, the liability of the Association and the District for their obligations under this Amendment, including without limitation, their obligations to operate and maintain the Grand Valley Powerplant, to perform Replacement Maintenance, to return the Grand Valley Powerplant in as good condition as when received, reasonable wear and tear excepted, and to provide the Private Equipment shall be limited to the total amount of Power Revenues actually received by the Association and the District during the term of this Amendment.

IN WITNESS WHEREOF, the parties to this Amendment have caused this Amendment to be duly executed as the day and year first written above.

DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

APPROVED


Office of the Regional Solicitor
Intermountain Region

By: 
Regional Director

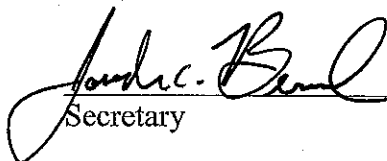
ATTEST:


Secretary

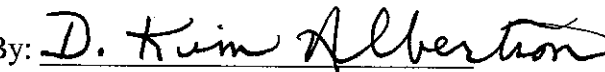
ORCHARD MESA IRRIGATION DISTRICT

By:  2/16/2011
President

ATTEST:

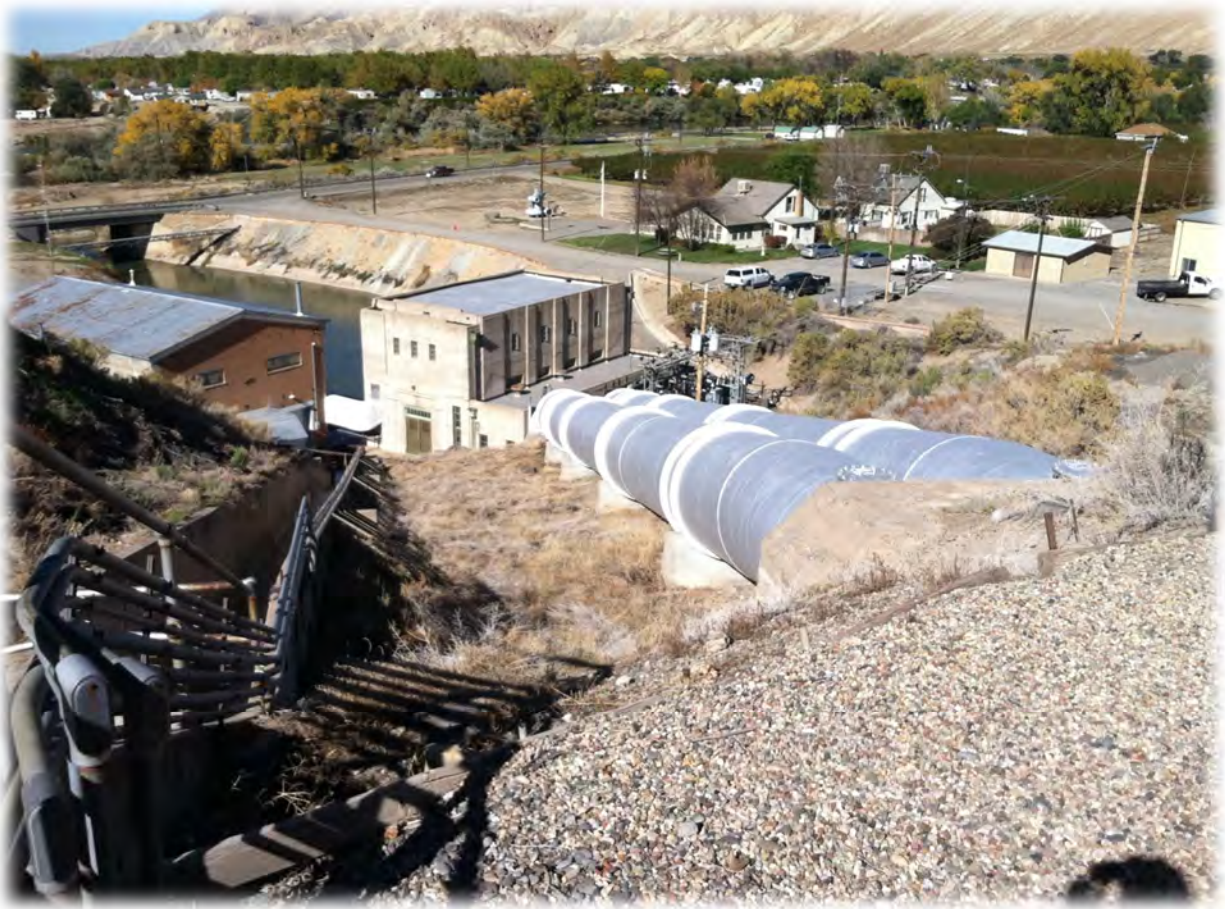

Secretary

GRAND VALLEY WATER USERS ASSOCIATION

By: 
President

GRAND VALLEY POWER PLANT

FEASIBILITY STUDY



September 22nd, 2015



1032 Grandview Drive
Ivins, Utah 84738, USA

Executive Summary

The Grand Valley Hydroelectric Power Plant is owned by the Orchard Mesa Irrigation District and the Grand Valley Water Users Association. The plant was built in 1933 and is currently operating in an inefficient and deteriorating state. The purpose of this feasibility report is to assess rebuild and upgrade options. The objective of the districts is to restore the facility to an economically and operationally sustainable condition.

The rebuild/upgrade recommendation is to increase the maximum generation output from 2.75 MW to 4.1 MW. This will not require additional flows. The increased generation is due to increased turbine and generator efficiencies, as well as increased head on the power plant due to lowering tailrace elevation an additional foot. Due to the current interconnect and power sales agreements, the maximum production is limited to 3.5 MW. This can be increased in the future as explained in the feasibility study.

Under existing conditions, the average annual production and revenue are 11,000 MWHrs and \$450,000. After the plant rebuild, the average annual production and revenue will be approximately 17,000 MWHrs and \$675,000 with potential for additional revenue as explained in the feasibility study.

The plant rebuild is estimated at \$5,200,000. A hydropower loan from the Colorado Water Conservation Board (CWCB) is available. The loan parameters are 90% principal at 2% interest for 20 years (10% equity). The annual loan payment is estimated at \$286,000. In the spring of this year, Sorenson Engineering assisted the Uncompahgre Water Users Association secure \$7,000,000 from CWCB for their Drop 5 hydroelectric site.

The current power purchase agreement is for \$40 per MWHr. This contract expires on December 31st 2020. The current avoided cost rate for XCEL Energy is \$30 per MWHr. This rate is assumed for year 2021 onward. The Economic Pro Forma is shown below.

Economic Pro Forma, Grand Valley Hydro									
Year	Price per MWHr	Annual Generation (MWHr)	Average Annual Gross Revenue	Annual Loan Payment	Annual Operations & Maintenance	Average Year BOR Lease Payment	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	Average Return on 10% Equity
2017	\$40.00	16,832	\$673,297	\$286,354	\$73,000	\$60,296	\$253,646	-\$23,012	49%
2018	\$40.00	16,832	\$673,297	\$286,354	\$74,460	\$62,105	\$250,377	-\$25,464	48%
2019	\$40.00	16,832	\$673,297	\$286,354	\$75,949	\$63,968	\$247,025	-\$27,976	47%
2020	\$40.00	16,832	\$673,297	\$286,354	\$77,468	\$65,887	\$243,587	-\$30,548	47%
2021	\$30.00	16,832	\$504,972	\$286,354	\$79,018	\$67,864	\$71,737	-\$125,538	14%
2022	\$30.00	16,832	\$504,972	\$286,354	\$80,598	\$69,900	\$68,120	-\$128,236	13%
2023	\$30.00	16,832	\$504,972	\$286,354	\$82,210	\$71,997	\$64,411	-\$130,998	12%
2024	\$30.00	16,832	\$504,972	\$286,354	\$83,854	\$74,157	\$60,607	-\$133,827	12%
2025	\$30.00	16,832	\$504,972	\$286,354	\$85,531	\$76,382	\$56,705	-\$136,725	11%
2026	\$30.00	16,832	\$504,972	\$286,354	\$87,242	\$78,673	\$52,703	-\$139,693	10%
2027	\$30.00	16,832	\$504,972	\$286,354	\$88,987	\$81,033	\$48,598	-\$142,733	9%
2028	\$30.00	16,832	\$504,972	\$286,354	\$90,766	\$83,464	\$44,388	-\$145,846	9%
2029	\$30.00	16,832	\$504,972	\$286,354	\$92,582	\$85,968	\$40,068	-\$149,036	8%
2030	\$30.00	16,832	\$504,972	\$286,354	\$94,433	\$88,547	\$35,638	-\$152,302	7%
2031	\$30.00	16,832	\$504,972	\$286,354	\$96,322	\$91,204	\$31,093	-\$155,649	6%
2032	\$30.00	16,832	\$504,972	\$286,354	\$98,248	\$93,940	\$26,430	-\$159,076	5%
2033	\$30.00	16,832	\$504,972	\$286,354	\$100,213	\$96,758	\$21,647	-\$162,587	4%
2034	\$30.00	16,832	\$504,972	\$286,354	\$102,218	\$99,661	\$16,740	-\$166,184	3%
2035	\$30.00	16,832	\$504,972	\$286,354	\$104,262	\$102,651	\$11,706	-\$169,869	2%
2036	\$30.00	16,832	\$504,972	\$286,354	\$106,347	\$105,730	\$6,541	-\$173,644	1%

Table of Contents

INTRODUCTION.....	1
HISTORY	1
UPGRADE RECOMMENDATIONS.....	1
Canal/Flume	1
Intake/Bypass.....	1
Penstock.....	1
Turbines	2
Generators	2
Power House Electrical	3
Controls.....	3
Switchgear.....	4
Substation	4
Tailrace.....	5
ICE PROBLEMS	5
INTERCONNECT, POWER SALES, & RECS	6
HYDROLOGY.....	6
CURRENT PRODUCTION	7
UPGRADED PRODUCTION	8
ADDITIONAL UPGRADE POTENTIAL.....	9
ECONOMICS.....	10
Capital Cost Estimate	10
Annual Costs	11
Economic Pro Forma	12
BUREAU OF RECLAMATION LEASE PAYMENTS.....	12
EXTERNAL FACTORS	12
“DESIGN-BID-BUILD” VS “DESIGN-BUILD”	13
ENVIRONMENTAL BENEFITS	14
CONCLUSION	14

List of Tables

TABLE 1: NEW TURBINE EFFICIENCIES	2
TABLE 2: EXISTING CONDITIONS PRODUCTION MODEL.....	7
TABLE 3: 3.5 MW MAXIMUM PRODUCTION MODEL	8
TABLE 4: 4.1 MW MAXIMUM PRODUCTION MODEL	9
TABLE 5: REBUILD CAPITAL COST	10
TABLE 6: LOAN COST	11
TABLE 7: ANNUAL COST	11
TABLE 8: ECONOMIC PRO FORMA	12

List of Appendices

APPENDIX A – Preliminary Turbine Layout
APPENDIX B – Detailed Economic Pro Forma
APPENDIX C – One-Line Diagram
APPENDIX D – Turbine Specifications & Far East Engineering Quote
APPENDIX E – Generator Specifications & Riverside Inc Quote
APPENDIX F – Electrical/Substation Specifications & Caribou Construction Quote
APPENDIX G – Controls/Switchgear Specifications & Bat Electric Quote
APPENDIX H – Preliminary Power Sales Exploration Summary
APPENDIX I – Proposed Rebuild Schedule
APPENDIX J – Present Turbine & Generator Efficiencies & Present Penstock Head Losses

INTRODUCTION

The Orchard Mesa Irrigation District and the Grand Valley Water Users Association are assessing the rebuild/upgrade options for the Grand Valley Power Plant (GVPP). The objective of the districts is to restore the facility to an economically and operationally sustainable condition.

HISTORY

The GVPP was constructed in 1933 by Xcel Energy, formerly known as the Public Service Company. Orchard Mesa Irrigation District and Grand Valley Water Users Association recently acquired the GVPP from Xcel Energy. The facility has been operated under cautious supervision since.

In the fall of 2014, a power outage caused the DC battery system to be drawn down below its normal operating voltage. This under-voltage condition caused several components to fail in the plant's control system. Caribou Construction isolated all of the components involved in the failure and the plant was put back online. Caribou construction installed vibration switches in July of 2015 to automatically shut down the facility in the case of high vibration.

UPGRADE RECOMMENDATIONS

Canal/Flume

Raising the intake water level is possible. This would require raising flume sideboards and banks of the existing canals. Increasing the head on the plant would exceed the interconnect contract's maximum generation of 3.5 MW, thus the additional expense is not recommended.

Intake/Bypass

Water level transducers upstream and downstream of the trash racks are recommended. A differential between the two will indicate plugging of the trash rack and automatically send out an alarm phone call via the new automatic telephone dialer discussed in the control section. Installation of conduit and control wire from the powerhouse to the intake structure will be required. Automatic control of the bypass gates are required in order to bypass excess flow. An automatic overflow siphon is already in place.

Penstock

The penstock consists of two 78" diameter steel penstocks that are 120' long each. These penstocks were installed in 1993. The exterior is in great condition; however the inside needs to be recoated. This will increase the Hazen Williams friction factor from an estimated 70 to 130. This will extend the life of the penstocks as well. The scroll case and draft tube is will also need to be recoated.

Turbines

All existing turbine components need to be replaced with new parts except the draft tube and spiral case. This includes the runners, turbine shafts, shaft seals, guide bearings, coupling bolts, wicket gates, bottom rings, head covers, shift rings, and wicket gate bushings. The new components will interface with the original generator coupling and turbine stay ring. A preliminary turbine layout is attached in Appendix A.

The recommended turbine manufacturer is represented by Far East Engineering of Boise, Idaho. The turbine would be of American/European design built in China. Similar vertical Francis units were installed in the Ridgway Hydro Project near Montrose, Colorado. The new turbine performance is shown in Table 1. The runner design was checked in order to ensure that no cavitation occurs due to the current tail water elevation.

Flow (cfs)	150	200	250	300	325	350	375	400
Efficiency (%)	52	72	80.8	84	86	87.8	87.6	84.6

TABLE 1: NEW TURBINE EFFICIENCIES

The new generator efficiency is estimated at 94%. Therefore, the new "water to wire" peak efficiency is approximately 82.5%. The existing "water-to-wire" efficiency is estimated at 54% (see Appendix J).

The runners are capable of approximately a 4% increased efficiency if the scroll case and draft tube were replaced with a more flow conducive geometry. This is not recommended due to the intensive cost of this work (concrete demo, etc.).

Generators

The generation units will need to be disassembled and rewound. The new generator efficiency is estimated to be 94%. Specific recommendations for the generators and other miscellaneous components are listed below.

1. Rewind stator from 2300 volt to 4160 volt (higher voltage for economic reasons), 1750kw with .90 power factor.
2. Rewind rotor class f/h.
3. Add new temperature sensors to stator, oil, bearings.
4. New wear rings.
5. Couple/align/dowel new turbine shaft to existing shaft.
6. New wicket servos.
7. New servo control assembly.
8. New HPU to control both units (208 volt, 3 phase).
9. Rewind/rebuild existing vertical DC exciters.
10. Turn slip rings & commutators and install new brushes.
11. Rebuild/replace all generator bearings.
12. Rebuild generator braking cylinders.

13. Repaint units.
14. Install two new sump pumps with piping.
15. Install new cooling water filter with piping.
16. Install new air compressor & controls for braking (208 volt, 3-phase).

Riverside Inc is recommended for the generator work. Additional specifications and quote are attached in Appendix E. Please note that the name plate of the generators will show 1,750 KW with a 0.9 power factor.

Power House Electrical

Specific recommendations for the power house's electrical components are listed below.

1. Disconnect existing control panel. The plan is to relocate existing control to another location in power house for display.
2. Remove the open bus switchgear behind the existing control panel.
3. Remove the existing 2300V cable & control wiring.
4. Saw cut the existing concrete for new power and control conduits.
5. Install new conduits & cable trenches and replace concrete.
6. Install new line neutral cabinets adjacent to the generators to facilitate connection to the generator leads.
7. Install 5kV circuits from the outdoor switch gear to the generators.
8. Install control circuits from the control panels to both generators, substation, HPU skid, and the intake structure.
9. Install a DC distribution panel.

Caribou Construction is recommended to complete this work. Additional specifications and quote are attached in Appendix F.

Controls

The existing controls are recommended to be replaced with utility grade manual hard-wired controls. They would be PLC based automatic control for reliable unmanned operation. They would be backed-up by the existing 125 volt DC service battery system for operation of essential features during power outages, specifically closing the wicket gates and turbine shutdown. The control panel would be fitted with an automatic telephone dialer to alert of alarm conditions. A dial in function will allow remote monitoring of the plant, including critical variables from any telephone.

The controls would consist of auto start and plant head level flow control. Level/output graphs, event logging, and status display will be available through a touch screen operator interface unit. The operator interface unit will have the ability to allow remote access. High speed

communication is advisable for remote communication. The operator interface unit display can be seen from smart phones via the high speed communication.

Voltage regulator control equipment for excitation will be installed. The voltage regulator will have power factor control mode.

Penstock, turbine, turbine discharge, and cooling water pressure transducers would be installed. Vibration switches, speed relay, sync check relay, under/over voltage relays, over/under frequency relay, ground fault relay, generator multi-function relay, transformer multi-function relay, etc. would also be installed. For appropriate alarms, the controls will automatically shut the plant down. Bat Electric is recommended for this work. Additional specifications and quote are attached in Appendix E.

Switchgear

The existing 2300 volt switchgear will need to be replaced. The voltage of the generator, controls, and switchgear would be increased to 4160 volt for economic reasons. Due to space constraints in the existing power house, the new switchgear will be installed outside in the existing substation area in weatherproof cabinets. Bat Electric is recommended for this work. Additional specifications and quote are attached in Appendix E. The facility one-line diagram is attached in Appendix C.

Substation

The new structure is to be designed with appropriate NESC clearances. Xcel will inspect the grounding plan. Specific recommendations for the substation are listed below.

1. Remove all existing substation equipment, structures, & concrete.
2. Remove existing pole mounted breaker from the pole north of the plant & inspect it.
3. Remove existing overhead power lines.
4. Install concrete foundations with oil spill containment for the new transformer & switchgear.
5. Install new 5MVA, 12.47kV to 4160V step-up transformer.
6. Install new wood structure in place of the existing breaker pole.
7. Install new group operated switch on the new wood structure.
8. Reinstall the breaker on the new structure.
9. Install new station class lightening arresters on the new structure.
10. Install underground 12.47kV circuit from the new breaker pole to the transformer.
11. Install new ground grid & fence on a foot print about half the size of the existing yard.
12. Install new 5kV circuit from the new transformer to the new switchgear.
13. Install new SEL relaying in the control panels.

A refurbished step-up transformer is recommended. This will save the project \$55,000. Sorenson Engineering always buys refurbished transformers for its projects from T & R Electric located in South Dakota.

Tailrace

The current tailrace elevation was measured at 4691.1 ft. The minimum tailrace elevation from the 1933 plans (see Figure 1) is 4688.3 ft. The recommended turbine manufacture guaranteed no cavitation issues at this elevation. Lowering of the tailrace to this elevation is recommended. For the future production model, a conservation elevation of 4690.1 ft was applied. Orchard Mesa Irrigation district is recommended to complete this work.

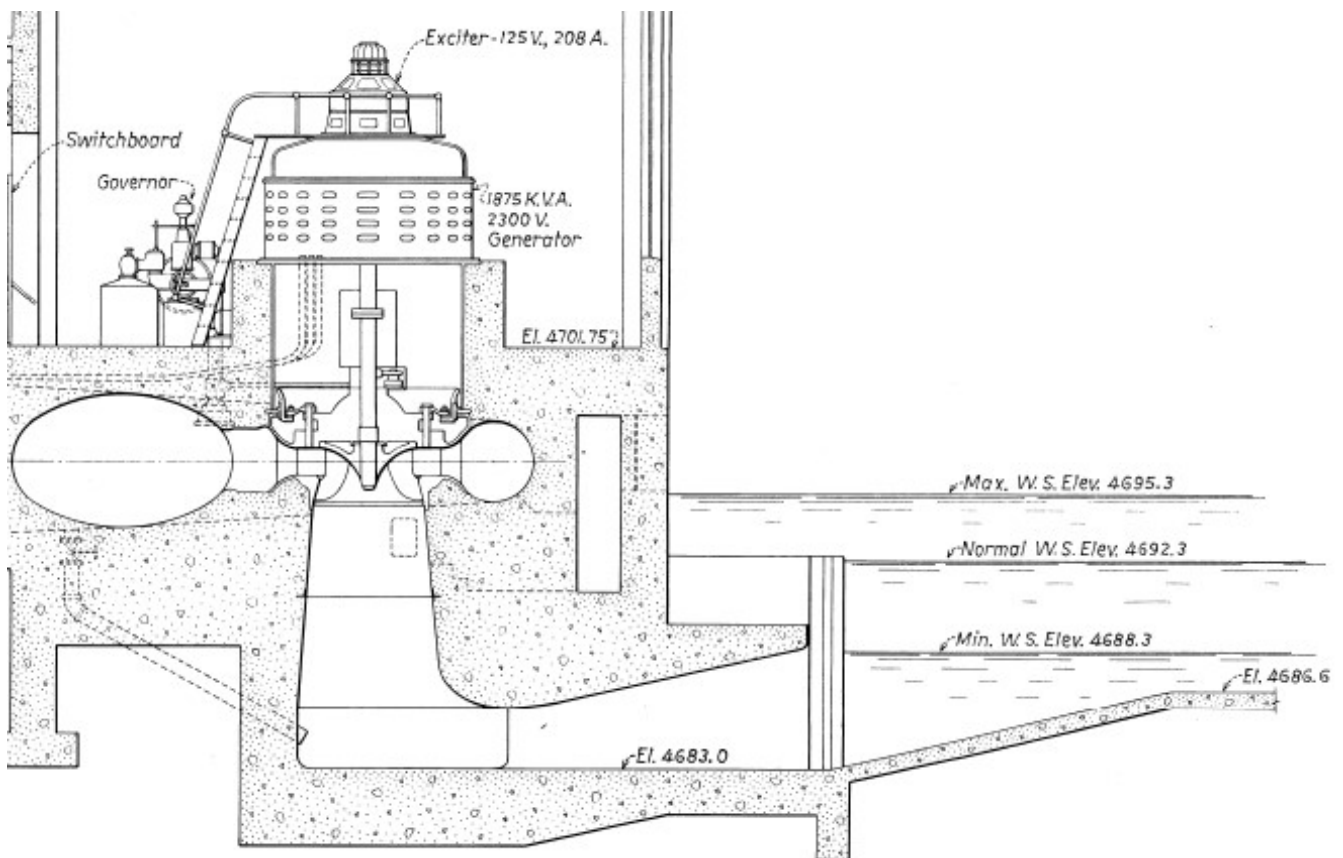


FIGURE 1: TAILRACE ELEVATIONS

ICE PROBLEMS

The facility currently battles ice problems in the winter. This “frazil ice” is soft/amorphous ice formed by the accumulation of ice crystals in water that is too turbulent to freeze solid. This

problem can be reduced by managing water at velocities less than 2.5 ft/s until an ice cap forms over the canal. This ice cap will act as an insulator and flows can then be increased.

INTERCONNECT, POWER SALES, & RECS

GVPP interconnects with XCEL Energy. The current interconnect contract allows for 3.5 MW. This will allow the project to increase max output from 2.75 MW to 3.5 MW. The current Power Purchase Agreement (PPA) is with XCEL energy. The power purchase price is \$40 per MWhr. The power sales contract allows sales up to 3.5 MW. The contract expires December 31st 2020. A new contract is preferred to be negotiated as soon as possible.

Kent Scholl (303-571-7009, kent.scholl@xcelenergy.com) is the contact with XCEL Energy for GVPP. He understands that a contract extension with XCEL is needed in order to amortize a bank loan to refurbish the plant. The current avoided cost rate for XCEL Energy is \$30 per MWhr. Sorenson Engineering requested a higher price for the power (\$60 to \$70 per MWhr). An update should be available soon. Sorenson Engineering is also exploring an amendment to the PPA and Interconnection Agreement to increase the maximum output to 4.1 MW. Preliminary power sales exploration was completed. A summary is attached in Appendix H.

A renewable energy credit (REC) is an environmental commodity that represents the added value of the generation source being clean renewable energy. Renewable Energy Credits (RECs) are being produced by the Grand Valley Power Plant. One REC is produced for every MWhr produced. The current market fluctuates between \$0.50 and \$1.00 per REC. With an average annual future production of nearly 17,000 MWhrs, an additional revenue of \$10,000-\$15,000 is potentially available. Under the current power sales agreement, XCEL Energy keeps the RECs. When negotiations for the next power sales agreement occur in 5 years, it is recommended to push to keep these RECs.

HYDROLOGY

Water is diverted from the Colorado River at the Grand Valley Diversion Dam into the Government High Line Canal approximately 23 miles Northeast of Grand Junction, Colorado. Approximately 4.6 miles below the diversion dam at the inlet of Tunnel #3, water for the Orchard Mesa Diversion is diverted from the GHC. This water passes through the Orchard Mesa Siphon under the Colorado River and then through the Orchard Mesa Power Canal.

19 years of daily flow data for the Orchard Mesa Power Canal was obtained from the Colorado Division of Water Resources (station ORCHIDCO). The flow in this canal is split between the power plant and the Orchard Mesa Pumping Plant. There is not a flow gage on either of these structures. Therefore, flow data was split with conservative guidance from Max Schmidt, manager of Orchard Mesa (see below).

- Start of irrigation season to April 30th, subtract 350 cfs from gage

- May 1st to May 30th, subtract 420 cfs from gage
- June 1st to August 30th, subtract 460 cfs from gage
- September 1st to September 30th, subtract 420 cfs from gage
- October 1st to end of irrigation season, subtract 350 cfs from gage

CURRENT PRODUCTION

In November of 2014, a site visit was made with a deadweight pressure tester to measure the actual net head on the unit at various flows. The tester was also used to estimate existing generation unit efficiencies at various flows. The existing penstock Hazen Williams's friction factor is estimated at 70. The turbine X generator efficiency is estimated at 54%. Results are attached in Appendix J.

The flow data, net head, and generation unit efficiencies were used to produce the current production model. The production model summary is shown in Table 2.

Existing Conditions Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
1997	1,975	1,789	864	1,113	913	837	734	928	875	1,145	662	1,801	13,636
1998	1,914	1,730	895	998	877	793	726	871	921	1,102	906	1,914	13,647
1999	1,962	1,774	885	906	912	883	792	853	911	1,063	631	1,915	13,487
2000	1,862	1,722	803	747	818	657	435	172	148	1,074	695	1,960	11,095
2001	1,953	1,772	618	806	941	622	361	844	829	759	808	1,893	12,205
2002	1,908	1,723	1,559	934	830	644	446	384	545	690	756	1,831	12,248
2003	1,814	1,611	822	763	955	822	767	374	843	1,115	612	393	10,890
2004	0	0	83	909	896	720	762	647	736	944	214	0	5,911
2005	0	0	114	958	944	809	861	831	898	1,012	305	1,823	8,556
2006	1,734	1,458	901	1,002	934	762	865	821	920	950	477	1,738	12,562
2007	1,761	1,568	891	1,021	1,029	848	904	942	1,110	968	0	0	11,044
2008	0	0	216	921	968	873	950	940	905	1,143	451	1,979	9,346
2009	1,973	926	700	1,080	926	900	927	895	896	1,051	637	1,820	12,730
2010	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
2011	848	306	1,099	934	967	838	915	887	918	1,120	0	1,211	10,043
2012	1,432	1,694	1,524	993	478	0	822	697	888	701	519	1,970	11,719
2013	372	600	819	329	820	835	740	859	931	1,153	36	1,203	8,697
2014	1,797	1,622	785	880	898	896	899	1,066	1,045	1,110	1,201	1,919	14,118
Average	1,377	1,247	875	909	845	671	766	758	847	974	524	1,543	11,336

TABLE 2: EXISTING CONDITIONS PRODUCTION MODEL

UPGRADED PRODUCTION

The upgraded recommendations allow for the new units to produce a maximum of 4.1 MW. Due to the current interconnect and power sales contracts, the maximum production is limited to 3.5 MW. The capital cost for the extra 600 KW capacity is a very low cost and provides additional generation potential if the current power sales and interconnection are amended. It also provides increased generation potential in 5 years after the current power sales agreement expires.

The new "water-to-wire" peak efficiency is approximately 82.5%. If the recommended upgrades were installed, the total output on the day of the test would have been 4.1 MW instead of 2.7MW (800 cfs).

An upgraded production model was created using the following upgraded parameters.

1. New turbine efficiencies
2. New generator efficiencies
3. Increased generator capacities, 2.05 MW each. The combined total production is limited to a total output of 3.5 MW due to the Interconnect and Power Sales Agreements.
4. Increased head from digging out tailrace (1').

The upgraded 3.5 MW production model summary is shown in Table 3.

3.5 MW Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
1997	2,604	2,352	1,255	1,738	1,421	1,322	1,145	1,463	1,339	1,787	1,032	2,384	19,842
1998	2,604	2,352	1,333	1,555	1,405	1,264	1,136	1,393	1,436	1,722	1,260	2,604	20,064
1999	2,604	2,352	1,319	1,411	1,401	1,397	1,252	1,362	1,405	1,659	874	2,520	19,557
2000	2,520	2,436	1,227	1,165	1,263	1,037	678	269	230	1,675	959	2,604	16,064
2001	2,604	2,352	930	1,258	1,467	986	572	1,334	1,298	1,202	1,143	2,604	17,750
2002	2,604	2,352	2,390	1,463	1,322	1,007	680	559	842	1,082	1,098	2,604	18,003
2003	2,604	2,352	1,238	1,198	1,498	1,312	1,208	589	1,289	1,742	954	613	16,597
2004	0	0	130	1,400	1,432	1,127	1,198	1,012	1,163	1,457	317	0	9,236
2005	0	0	182	1,501	1,479	1,291	1,378	1,325	1,427	1,577	453	2,604	13,218
2006	2,604	2,309	1,414	1,562	1,480	1,203	1,382	1,305	1,443	1,482	726	2,602	19,513
2007	2,602	2,352	1,400	1,593	1,605	1,353	1,429	1,466	1,734	1,512	0	0	17,047
2008	0	0	334	1,437	1,496	1,355	1,494	1,486	1,395	1,785	642	2,604	14,028
2009	2,604	1,260	1,077	1,687	1,435	1,429	1,473	1,431	1,378	1,641	887	2,588	18,891
2010	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
2011	1,315	420	1,540	1,456	1,505	1,316	1,455	1,420	1,417	1,747	0	1,596	15,187
2012	2,219	2,240	2,022	1,419	745	0	1,307	1,090	1,366	1,094	753	2,604	16,860
2013	563	937	1,296	505	1,270	1,336	1,162	1,341	1,439	1,800	56	1,680	13,384
2014	2,518	2,322	1,074	1,393	1,374	1,421	1,438	1,671	1,629	1,729	1,686	2,604	20,858
Average	1,948	1,730	1,274	1,399	1,320	1,061	1,211	1,194	1,314	1,520	755	2,107	16,832

TABLE 3: 3.5 MW MAXIMUM PRODUCTION MODEL

ADDITIONAL UPGRADE POTENTIAL

The main obstacle of additional upgrades is the interconnection agreement XCEL Energy. The current agreement allows for a maximum production of 3.5 MW. An amendment to the interconnection agreement is needed to increase the maximum production. An amendment would require an interconnection study and an interconnection rebuild. The estimated cost of the interconnect study \$20,000. The cost of the interconnect rebuild is highly variable. This cost is estimated between \$150,000 and \$600,000.

In addition to an Interconnection Agreement Amendment, the power sales contract needs to be amended as well. There are five years remaining on the current power sales contract. This contract allows for the sale of 3.5 MW. An amendment would need to be negotiated to sell the increased 600 KW during the next 5 years. It is recommended to negotiate sales for 4.1 MW under the next power sales agreement. The 4.1 MW potential production model is shown below in Table 4.

4.1 MW Grand Valley Production in Megawatt Hours													
Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Annual Total
1996	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
1997	3,025	2,734	1,337	1,738	1,421	1,322	1,145	1,463	1,339	1,787	1,032	2,762	21,104
1998	2,996	2,709	1,396	1,555	1,405	1,264	1,136	1,393	1,436	1,722	1,397	2,987	21,395
1999	3,019	2,729	1,373	1,411	1,401	1,397	1,252	1,362	1,405	1,659	969	2,928	20,907
2000	2,897	2,743	1,257	1,165	1,263	1,037	678	269	230	1,675	1,068	3,018	17,302
2001	3,013	2,729	955	1,258	1,467	986	572	1,334	1,298	1,202	1,267	2,979	19,060
2002	2,990	2,687	2,474	1,463	1,322	1,007	680	559	842	1,082	1,203	2,920	19,228
2003	2,898	2,580	1,292	1,198	1,498	1,312	1,208	589	1,289	1,742	954	613	17,173
2004	0	0	130	1,400	1,432	1,127	1,198	1,012	1,163	1,457	330	0	9,249
2005	0	0	182	1,501	1,479	1,291	1,378	1,325	1,427	1,577	480	2,893	13,533
2006	2,773	2,312	1,417	1,562	1,480	1,203	1,382	1,305	1,443	1,482	756	2,772	19,889
2007	2,809	2,504	1,400	1,593	1,605	1,353	1,429	1,466	1,734	1,512	0	0	17,406
2008	0	0	334	1,437	1,496	1,355	1,494	1,486	1,395	1,785	697	3,026	14,504
2009	3,024	1,447	1,097	1,687	1,435	1,429	1,473	1,431	1,378	1,641	982	2,869	19,893
2010	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
2011	1,330	482	1,739	1,456	1,505	1,316	1,455	1,420	1,417	1,747	0	1,854	15,721
2012	2,230	2,593	2,335	1,538	745	0	1,307	1,090	1,366	1,094	807	3,023	18,127
2013	582	944	1,302	505	1,270	1,336	1,162	1,341	1,439	1,800	56	1,904	13,641
2014	2,816	2,529	1,209	1,393	1,374	1,421	1,438	1,671	1,629	1,729	1,849	2,986	22,043
Average	2,151	1,943	1,363	1,418	1,320	1,061	1,211	1,194	1,314	1,520	814	2,399	17,707

TABLE 4: 4.1 MW MAXIMUM PRODUCTION MODEL

The production increase is estimated at 875 MWHrs annually. Assuming the additional 600 KW of increased production would be sold at the current avoided cost of \$30 per MWHr, the increased revenue is approximately \$26,000 annually.

There is potential to raise the water level of the upstream canals and flumes in order to increase head on the power plant. Every 1' of head level increase will add approximately 230 MWHr in production annually. At \$40 per MWHr, this will increase annual revenue by approximated

\$9,000. In order to utilize the increased potential head, the interconnect agreement needs to be modified for a larger facility.

ECONOMICS

Capital Cost Estimate

The capital cost estimate for the recommended plant upgrade is approximately \$5,200,000 (see Table 5). Quotes from Far East Power Equipment, Riverside Inc, Caribou Construction, and Bat Electric, and Sorenson Engineering are included in the capital cost. A high contingency of 20% is used due to the nature of a plant rebuild (increased scope of work possible). Additional contingency items could include interconnect study, interconnect. Additionally, if Davis Bacon wages or a bid bond is required, the capital cost will increase. \$50,000 is budgeted for XCEL Energy to inspect grounding and possible other unknowns.

Capital Cost, Grand Valley Hydro Rebuild					
Item #	Description	Units	#Units	Unit Price	Total
1	New HDPE Plastic Trash Rack (installation included)	Square Ft	450	\$90	\$40,500
2	Tailrace Dig Down	Lump Sum	1	\$30,000	\$30,000
3	Generator Rewind & Misc Mechanical Supply/Install Riverside Inc	Lump Sum	1	\$1,166,714	\$1,166,714
4	Penstock, Scroll Case, and Draft Tube sandblast and repaint	Lump Sum	1	\$106,640	\$106,640
5	Automatic Trash Chute Gates	Lump Sum	1	\$30,000	\$30,000
6	Turbine Supply Far East Power Equipment	Lump Sum	1	\$816,000	\$816,000
7	Plant Electrical & Substation Caribou Construction (w/ refurbished transformer)	Lump Sum	1	\$1,129,000	\$1,129,000
8	Control/Switchgear Supply & Onsite Start-up Service Bat Electric	Lump Sum	1	\$515,000	\$515,000
9	Civil, Mechanical, and Electrical Engineering Project Management, Surveying, Loan, and PPA assistance Sorenson Engineering	Lump Sum	1	\$350,000	\$350,000
10	XCEL Energy Costs??	Lump Sum	1	\$50,000	\$50,000
11	Colorado Water Conservation Board Loan Service Fee	%	2%	\$101,612	\$101,612
12	Contingency	%	20%	\$867,093	\$867,093
13	Estimated Cost				\$4,335,466
14	Total Estimated Cost (w/ Contingency)				\$5,202,559

TABLE 5: REBUILD CAPITAL COST

The Far East Engineering quote is attached is Appendix D. The Riverside Inc quote is attached is Appendix E. The Caribou Construction quote is attached is Appendix F. The Bat Electric quote is attached is Appendix G.

The capital cost estimate is based on quotes from companies that Sorenson Engineering has hired several times. Ted Sorenson, owner of Sorenson Engineering, owns 14 small hydro plants and these are the companies that he uses when building a new project. Please note this capital cost is based using the design build team that was used for the Ridgway Dam, Arrowrock, and South Canal Hydro projects. In these past projects, the next highest bidders were nearly double

the cost of this design build team. If the project is put out to bid, please consider these capital cost estimates confidential.

Annual Costs

A Colorado Water Conservation Board loan is recommended. There is a specific loan program for hydroelectric. The loan parameters are 90% principal at 2% interest for 20 years (10% equity). The annual loan payment is estimated at \$286,000 (see Table 6).

Grand Valley Rebuild Loan	
Capital Cost	\$5,202,559
Loan Principal (90%)	\$4,682,303
Equity (10%)	\$ 520,256
Loan Term (years)	20
Interest Rate	2.00%
Annual Loan Payment	\$286,354

TABLE 6: LOAN COST

The annual operation & maintenance cost is estimated at \$53,000. This includes boiler/machinery and business interruption insurance. The total estimated year one cost is estimated at \$420,000 (see Table 7).

Grand Valley Rebuild Annual Cost	
Labor	\$40,000
Insurance	\$15,000
Scheduled Maintenance	\$10,000
Unscheduled Maintenance	\$8,000
Subtotal (O&M)	\$73,000
Annual Cost of Financing	\$286,354
Average BOR Lease Payment	\$60,296
First Year Total Annual Cost	\$ 419,651

TABLE 7: ANNUAL COST

The project sponsor must show that the project is technically, economically, and institutionally feasible. In the spring of this year, Sorenson Engineering assisted the Uncompahgre Water Users Association secure \$7,000,000 for their Drop 5 hydroelectric site.

Economic Pro Forma

The Economic Pro Forma is shown in Table 8. The current contract PPA rates from XCEL are used until December 31st 2020 (\$40 per MWhr). The current avoided cost rate for XCEL Energy is \$30 per MWhr. This rate is assumed for year 2021 onward. A more detailed Economic Pro Forma is attached in Appendix B. An electronic copy of the economic excel spread will be provided so numbers can be updated as negotiations with XCEL progress.

Economic Pro Forma, Grand Valley Hydro									
Year	Price per MWhr	Annual Generation (MWhr)	Average Annual Gross Revenue	Annual Loan Payment	Annual Operations & Maintenance	Average Year BOR Lease Payment	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	Average Return on 10% Equity
2017	\$40.00	16,832	\$673,297	\$286,354	\$73,000	\$60,296	\$253,646	-\$23,012	49%
2018	\$40.00	16,832	\$673,297	\$286,354	\$74,460	\$62,105	\$250,377	-\$25,464	48%
2019	\$40.00	16,832	\$673,297	\$286,354	\$75,949	\$63,968	\$247,025	-\$27,976	47%
2020	\$40.00	16,832	\$673,297	\$286,354	\$77,468	\$65,887	\$243,587	-\$30,548	47%
2021	\$30.00	16,832	\$504,972	\$286,354	\$79,018	\$67,864	\$71,737	-\$125,538	14%
2022	\$30.00	16,832	\$504,972	\$286,354	\$80,598	\$69,900	\$68,120	-\$128,236	13%
2023	\$30.00	16,832	\$504,972	\$286,354	\$82,210	\$71,997	\$64,411	-\$130,998	12%
2024	\$30.00	16,832	\$504,972	\$286,354	\$83,854	\$74,157	\$60,607	-\$133,827	12%
2025	\$30.00	16,832	\$504,972	\$286,354	\$85,531	\$76,382	\$56,705	-\$136,725	11%
2026	\$30.00	16,832	\$504,972	\$286,354	\$87,242	\$78,673	\$52,703	-\$139,693	10%
2027	\$30.00	16,832	\$504,972	\$286,354	\$88,987	\$81,033	\$48,598	-\$142,733	9%
2028	\$30.00	16,832	\$504,972	\$286,354	\$90,766	\$83,464	\$44,388	-\$145,846	9%
2029	\$30.00	16,832	\$504,972	\$286,354	\$92,582	\$85,968	\$40,068	-\$149,036	8%
2030	\$30.00	16,832	\$504,972	\$286,354	\$94,433	\$88,547	\$35,638	-\$152,302	7%
2031	\$30.00	16,832	\$504,972	\$286,354	\$96,322	\$91,204	\$31,093	-\$155,649	6%
2032	\$30.00	16,832	\$504,972	\$286,354	\$98,248	\$93,940	\$26,430	-\$159,076	5%
2033	\$30.00	16,832	\$504,972	\$286,354	\$100,213	\$96,758	\$21,647	-\$162,587	4%
2034	\$30.00	16,832	\$504,972	\$286,354	\$102,218	\$99,661	\$16,740	-\$166,184	3%
2035	\$30.00	16,832	\$504,972	\$286,354	\$104,262	\$102,651	\$11,706	-\$169,869	2%
2036	\$30.00	16,832	\$504,972	\$286,354	\$106,347	\$105,730	\$6,541	-\$173,644	1%

TABLE 8: ECONOMIC PRO FORMA

BUREAU OF RECLAMATION LEASE PAYMENTS

The project is permitted with the Bureau of Reclamation through a Lease of Power Privilege (LOPP). The annual lease payments started at \$0.03 per KWh in 2011 with a 3% escalator. Detailed lease payment scenarios for future years are shown in the Detailed Economic Pro Forma in Appendix B.

Sorenson Engineering assisted the Uncompahgre Water Users Association secure multiple LOPP's last year with a lease payment of \$0.02/KWh with no escalator. It is recommended to amend the Grand Valley LOPP with the same lease payments.

EXTERNAL FACTORS

Due to the high priority water right of the Orchard Mesa Irrigation District, low water availability is unlikely. The major external factor that can affect the GVPP is a prolonged periods of no flow due to work on the canals, the Orchard Mesa Pumping Plant, the Grand Valley Diversion Dam, or

the power plant. The past effect of this is seen in the low generation years of the production models. The chance of this happening in the future is reduced by the rebuilding of the power plant.

It is recommended to complete future work that affects canal flow as fast as possible during the fall and spring no flow periods. One day of lost revenue (3.5 MW at \$40 per MWhr) is approximately \$3,300.

Large amounts of “frazil” can also cause decreased production. The new trash racks will help decrease problems. Sorenson will work with Orchard Mesa on reducing frazil ice in the canal as explained in the Ice Problems section.

The current production models are built on historical flow data and then factor in these external factors. In order to cover other externalities, Business Interruption, Boiler/Machinery, and General Liability insurance are recommended. This cost is included in the annual costs.

“DESIGN-BID-BUILD” VS “DESIGN-BUILD”

Design-Bid-Build

Design–bid–build is a traditional project delivery method in which the owner directly contracts with each individual separate entity involved with the design and construction of a project.

- There is a greater risk to the owner of lack of proper coordination, cost over-runs and delays as a result of misunderstandings between professionals who have not worked together before on the specific type of project involved. In a project as technical as a hydroelectric power facility, this can present major hurdles to the success of the project and the satisfaction of the owner.
- The project cost has the potential to increase dramatically from the initial bids received, due to change orders and delays. This particularly applies to a rebuild project because there are more uncertainties and less options in dealing with the constraints of an existing structure than when building a new plant from scratch.
- There is a high potential for lack of proper understanding and communication among various sub-contractors and suppliers that can lead to duplications and cost overruns. This can also result in gaps and mistiming between the sub-contractors and suppliers.

Design-Build

Design–build is a project delivery method in which the design and construction services are contracted by a single entity known as the design–build contractor.

- A quality design-build contractor should consist of an integrated team in which members fully understand the all the various aspects and challenges of hydropower

construction, and have regularly worked with each other, the agreed upon scope of work is fully understood by all members of the team.

- There should be fewer change orders, if any, for additional scope of work added. This is due to a better understanding of the scope of the project by all members of the team. Contingency is built into the capital cost for change orders resulting from an increased scope of work.
- This results in a smoother, more well-timed project, with each member coordinating in a synchronized manner with the other members.
- Although initial bids from a Design-build team might appear to be higher than that of a design-bid-build, the final project cost is generally lower, and the quality and timing of the project is considerably better.
- The Design-build form of construction generally results in a lower cost, better quality, and more timely project with less risk placed on the owner and the financing bank.

It is recommended that a Design-build be used for this project. The capital cost estimate set forth in this feasibility study is based on the same design build team members that built the Ridgway Dam, Arrowrock, and the South Canal Hydro Projects. This team has the expertise and past work experience that will accommodate the most economical rebuild.

ENVIRONMENTAL BENEFITS

The clean renewable energy of this hydro power plant will likely offset production in a coal-fired power plant. The production of approximately 16,800,000 KWHrs annually will eliminate approximately 36,000,000 pounds of CO₂, 30,000 pounds of NO_x, and 65,000 pounds of SO₂ emissions into the environment every year.

CONCLUSION

The GVPP rebuild is found to be feasible with the current rates available from XCEL energy. The main obstacle is the securement of a long term power sales contract from XCEL Energy. We recommend a design build. An ambitious rebuild schedule is attached in Appendix I.

APPENDIX A – Preliminary Turbine Layout

APPENDIX B – Detailed Economic Pro Forma

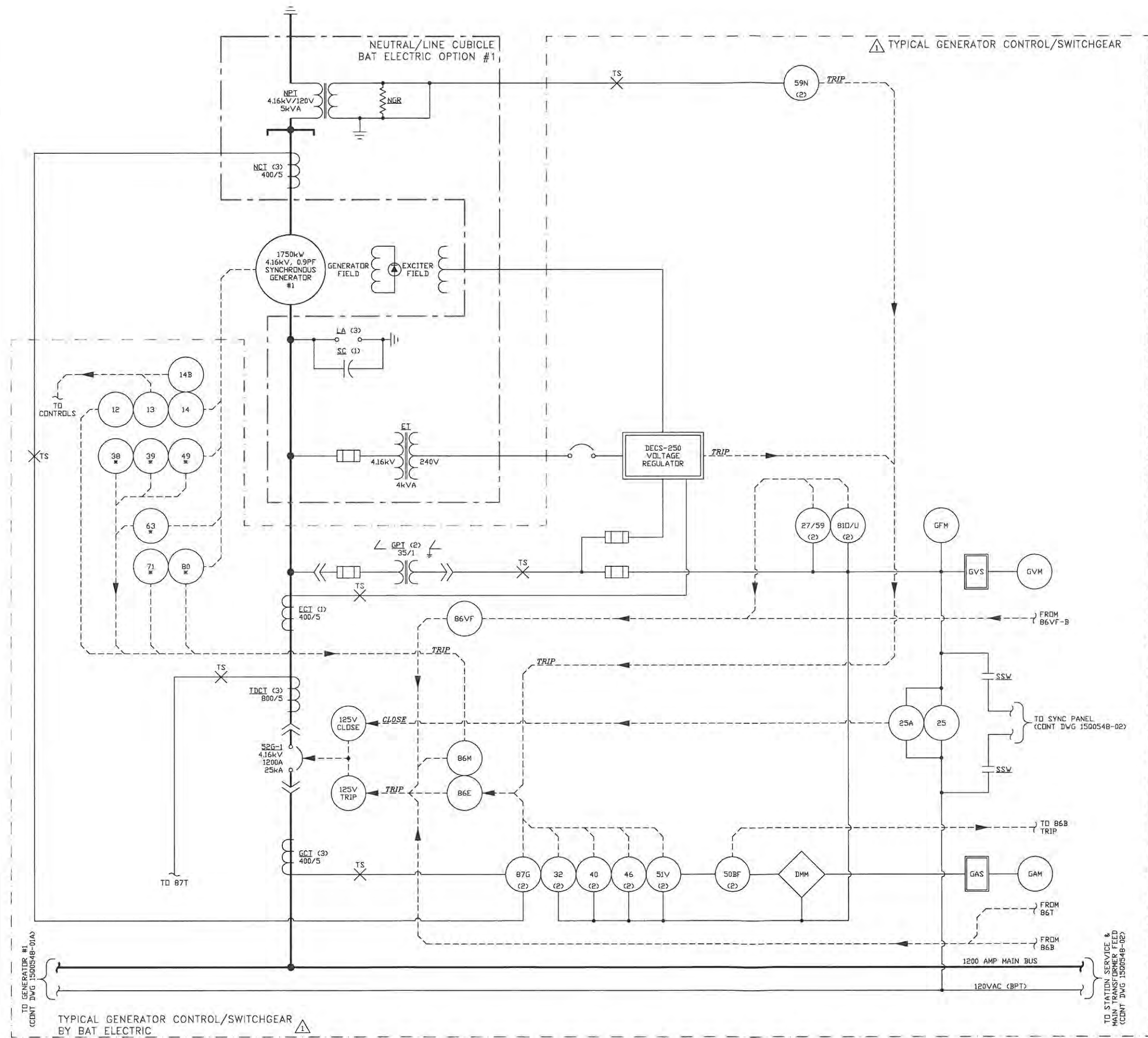
Economic Pro Forma, Grand Valley Hydro																		
Year	Price per MWhr	Annual Generation (MWhr)	Low Year Generation (2004)	High Year Generation (2014)	Average Annual Gross Revenue	Low Year Gross Revenue (2004)	High Year Gross Revenue (2014)	Annual Loan Payment	Annual Operations & Maintenance	BOR Levy (\$/KWhr)	Average Year BOR Lease Payment	Low Year BOR Lease Payment	High Year BOR Lease Payment	Average Annual Net Revenue	Low Year Annual Net Revenue (2004)	High Year Annual Net Revenue (2014)	Average Return on 10% Equity	Debt Service
2017	\$40.00	16,832	9,236	20,858	\$673,297	\$369,426	\$834,309	\$286,354	\$73,000	\$0.036	\$60,296	\$33,084	\$74,716	\$253,646	-\$23,012	\$400,239	49%	2.10
2018	\$40.00	16,832	9,236	20,858	\$673,297	\$369,426	\$834,309	\$286,354	\$74,460	\$0.037	\$62,105	\$34,076	\$76,957	\$250,377	-\$25,464	\$396,537	48%	2.09
2019	\$40.00	16,832	9,236	20,858	\$673,297	\$369,426	\$834,309	\$286,354	\$75,949	\$0.038	\$63,968	\$35,098	\$79,266	\$247,025	-\$27,976	\$392,739	47%	2.09
2020	\$40.00	16,832	9,236	20,858	\$673,297	\$369,426	\$834,309	\$286,354	\$77,468	\$0.039	\$65,887	\$36,151	\$81,644	\$243,587	-\$30,548	\$388,842	47%	2.08
2021	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$79,018	\$0.040	\$67,864	\$37,236	\$84,093	\$71,737	-\$125,538	\$176,267	14%	1.49
2022	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$80,598	\$0.042	\$69,900	\$38,353	\$86,616	\$68,120	-\$128,236	\$172,163	13%	1.48
2023	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$82,210	\$0.043	\$71,997	\$39,503	\$89,214	\$64,411	-\$130,998	\$167,953	12%	1.48
2024	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$83,854	\$0.044	\$74,157	\$40,689	\$91,891	\$60,607	-\$133,827	\$163,632	12%	1.47
2025	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$85,531	\$0.045	\$76,382	\$41,909	\$94,647	\$56,705	-\$136,725	\$159,199	11%	1.46
2026	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$87,242	\$0.047	\$78,673	\$43,167	\$97,487	\$52,703	-\$139,693	\$154,648	10%	1.46
2027	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$88,987	\$0.048	\$81,033	\$44,462	\$100,412	\$48,598	-\$142,733	\$149,979	9%	1.45
2028	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$90,766	\$0.050	\$83,464	\$45,795	\$103,424	\$44,388	-\$145,846	\$145,187	9%	1.45
2029	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$92,582	\$0.051	\$85,968	\$47,169	\$106,527	\$40,068	-\$149,036	\$140,269	8%	1.44
2030	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$94,433	\$0.053	\$88,547	\$48,584	\$109,722	\$35,638	-\$152,302	\$135,221	7%	1.43
2031	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$96,322	\$0.054	\$91,204	\$50,042	\$113,014	\$31,093	-\$155,649	\$130,041	6%	1.43
2032	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$98,248	\$0.056	\$93,940	\$51,543	\$116,404	\$26,430	-\$159,076	\$124,724	5%	1.42
2033	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$100,213	\$0.057	\$96,758	\$53,089	\$119,897	\$21,647	-\$162,587	\$119,267	4%	1.41
2034	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$102,218	\$0.059	\$99,661	\$54,682	\$123,494	\$16,740	-\$166,184	\$113,666	3%	1.41
2035	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$104,262	\$0.061	\$102,651	\$56,323	\$127,198	\$11,706	-\$169,869	\$107,917	2%	1.40
2036	\$30.00	16,832	9,236	20,858	\$504,972	\$277,070	\$625,731	\$286,354	\$106,347	\$0.063	\$105,730	\$58,012	\$131,014	\$6,541	-\$173,644	\$102,016	1%	1.39

*Existing XCEL Energy Contract valid until December 31st, 2020

*Rates from 2021 onward are assumed

*O&M escalation of 2% applied

APPENDIX C – One-Line Diagram



LINE LEGEND	
---	CONTROL/SWGR CUBICLES
---	NEUTRAL/LINE CUBICLE
---	HIGH VOLTAGE
---	CONTROL WIRING
---	TRIP LINE

NOTES	
(1)	PART OF UNIT #1 GENERATOR MULTI FUNCTION RELAY
Δ	SWITCHGEAR CONTROLS & VOLTAGE REGULATOR WIRED FOR A-B-C PHASE ROTATION.
*	SENSORS AND SWITCHES PART OF TURBINE/GENERATOR, CONTROLS TO HAVE SHUTDOWN CIRCUITS ONLY.
X	REPRESENTS PT/CT TEST SWITCH

DEVICE LEGEND	
12	- OVER SPEED RELAY
13	- SYNC SPEED RELAY
14	- UNDER SPEED RELAY
14B	- SECONDARY UNDER SPEED RELAY
25	- SYNC CHECK RELAY
25A	- AUTO SYNCHRONIZER
27/59	- UNDER/OVER VOLTAGE
32	- REVERSE POWER
38	- BEARING OVER TEMPERATURE RELAY
39	- OVER VIBRATION RELAY
40	- LOSS OF FIELD
46	- PHASE BALANCE
49	- OVER TEMPERATURE RELAY
50BF	- BREAKER FAIL
51V	- OVERCURRENT W/VOLT RESTRAINT
52G	- GENERATOR CIRCUIT BREAKER
59N	- NEUTRAL OVER VOLTAGE
63	- AIR PRESSURE RELAY
71	- BEARING OIL LEVEL RELAY
80	- BEARING OIL LOW FLOW RELAY
810/U	- OVER/UNDER FREQUENCY
86B	- BUS LOCKOUT RELAY
86E	- ELECTRICAL LOCKOUT RELAY
86M	- MECHANICAL LOCKOUT RELAY
86T	- TRANSFORMER LOCKOUT RELAY
86VF	- VOLT/FREQ LOCKOUT RELAY
86VF-B	- BUS VOLT/FREQ LOCKOUT RELAY
87G	- GENERATOR DIFFERENTIAL
87T	- TRANSFORMER DIFFERENTIAL
BPT	- BUS POTENTIAL TRANSFORMER
DMM	- DIGITAL MULTI METER
ECT	- EXCITATION CURRENT TRANSFORMER
ET	- EXCITATION TRANSFORMER
GAM	- GENERATOR AMMETER
GAS	- GENERATOR AMMETER SWITCH
GCT	- GENERATOR CURRENT TRANSFORMER
GFM	- GENERATOR FREQUENCY METER
GPT	- GENERATOR POTENTIAL TRANSFORMER
GVM	- GENERATOR VOLTMETER
GVS	- GENERATOR VOLTMETER SWITCH
LA	- LIGHTNING ARRESTOR
NCT	- NEUTRAL CURRENT TRANSFORMER
NGR	- NEUTRAL GROUND RESISTOR
NPT	- NEUTRAL POTENTIAL TRANSFORMER
SC	- SURGE CAPACITOR
SSW	- SYNC SWITCH
TDCT	- TRANSFORMER DIFFERENTIAL CURRENT TRANSFORMER
TS	- TEST SWITCH



SORENSEN ENGINEERING
GRAND VALLEY DUAL UNIT HYDRO
UNIT #2 ONE LINE DIAGRAM

DWG No.: 15Q0548-01B

REV	BY	DATE

ENGR: D.BATDORF DRFT: JB DATE: 7-10-15

APPENDIX D – Turbine Specifications & Far East Engineering Quote

Far East Power Equipment, LLC

2792 E Hard Rock Dr., Boise, Idaho 83712
Phone: 208-387-2665, Mobile: 208-870-6868, Email: Liu@FEPE.NET

July 9, 2015

Ted Sorenson
Sorenson Engineering
5203 South 11th East
Idaho Falls, ID 83404

Subject: Proposal for Turbine Supply for Grand Valley Hydro Rehab Project

Dear Ted

We like to suggest to replace the all existing turbine components with new except the draft tube and spiral case. The only interface will be with generator Coupling and Turbine Stay Ring. That could make the installation easier.

1. Performance Table at 73 ft head/400 CFS (max)

Net Head (ft)	73	73	73	73	73	73	73	73	
Flow (cfs)	150	200	250	300	325	350	375	400	
Efficiency (%)	56	76	84.8	88	90	92	92.2	90	*
Output (kW)	519	938	1309	1630	1806	1988	2135	2223	*
Efficiency (%)	52	72	80.8	84	86	87.8	87.6	84.6	**
Output (kW)	482	889	1247	1556	1726	1897	2028	2089	**

* from Model for brand new design/condition draft tube and spiral cases

** with correction for using existing draft tube and spiral cases

2. Materials for major components

Item No	Component	Material	ASTM Equivalent	Remarks
1	Runner	Stainless Steel	ASTM A743 CA-6NM	
2	Turbine Shaft	Forged Steel	ASTM A668 Class D	
3	Shaft Seal	Teflon Packing		
4	Guide Bearing	Babbitt		Self Lubricated
5	Coupling Bolts	Forged Steel	ASTM A668 Class J	
6	Wicket Gates	Stainless Steel	ASTM A743 CA-6NM	
7	Bottom Ring	Carbon Steel	ASTM A283 GrC	with Stainless Steel Layer
8	Head Cover	Carbon Steel	ASTM A283 GrC	with Stainless Steel Layer
9	Shift Ring	Carbon Steel	ASTM A283 GrC	
10	Wicket Gate Bushings	Self Lubricated		

3. Scope of Supply

- Turbine Shaft 1 set
- Turbine Runner 1 set
- Turbine Shaft Seal 1 set
- Turbine Guide Bearing 1 set
- Turbine Distributor Assembly (head cover/wicket gates/bottom ring) 1 set
- Turbine Wicket Gates Operating Mechanism 1 set
- Coupling Bolts with Generator Shaft 1 set
- RTD's for Bearing 1 set
- Shear Pin Signal Device 1 set
- Special Tools 1 set

4. Budgetary Price (FOB Site)

\$816,000 for two units.

5. Delivery

Within 12 months

6. Terms

- Price does not include any local taxes
- Price is good for 60 days.

If you have any comments, please let me know.

Best Regards



Lianggao Liu, P.E.
Principal

Attachment

- Turbine Assembly Layout - Preliminary

APPENDIX E – Generator Specifications & Riverside Inc Quote



P.O. Box 720 Parma, Idaho 83660
Office 208.722.6731 Fax 208.722.6736
Email riverside@rsicorp.net

GRAND VALLEY HYDRO –COLORADO

7/13/2015

Cost estimate

1. Disassembly, transport Turbine/Generator/components to Parma
2. Rewind Stator 4160volt/1944kw with nameplate 1750kw with .90 power factor
3. Rewind Rotor class F/H
4. Add new RTD's to stator, oil, bearings
5. Install New Stainless Runner (install only)
6. Install New Stainless Wear Rings (install only)
7. Install New Head Cover and turbine bearings (install only)
8. Couple/align/dowel new turbine shaft to existing shaft
9. Supply/Install New Wicket Servo
10. Supply/Install new servo control assy.
11. Supply/install single HPU that will control both units
12. Rewind/Rebuild existing vertical DC exciters
13. Turn slip rings and commutators and install new brushes
14. Rebuild/Replace all generator bearings
15. Supply/install 2 new sump pumps and piping
16. Supply/install New cooling water filter and piping
17. Rebuild generator braking cylinders
18. Supply/install New air compressor and controls for braking
19. Crane for outside powerhouse included
20. Transport, Re-install, paint
21. Test/commission

Note: Price includes Crane time for outside of power house loading/unloading

Price per unit-----\$583,357.00

Total for both Units-----\$1,166,714.00

Note; This price is based on 160 day schedule

APPENDIX F – Electrical/Substation Specifications & Caribou
Construction Quote



Grand Valley Hydropower Plant Electrical Scope and Cost Estimate July 2015

We have broken the electrical into two items: the Substation and the Plant Electrical.

Substation:

- 1. Remove all of the equipment, structures, and concrete from the existing substation.**
- 2. Remove the existing pole mounted breaker from the pole north of the plant and inspect it.**
- 3. Remove the overhead power lines.**
- 4. Install concrete foundations with oil spill containment for the new transformer and switchgear.**
- 5. Supply and install a new 5MVA 12.47kV to 4160V generator step-up transformer.**
- 6. Install Bat Electric supplied outdoor 5kV switchgear**
- 7. Supply and install a new wood structure in place of the existing breaker pole.**
- 8. Install a new group operated switch on the new wood structure.**
- 9. Reinstall the breaker on the new structure.**
- 10. Install new station class lightening arresters on the new structure.**
- 11. Install an underground 12.47kV circuit from the new breaker pole to the transformer.**
- 12. Install a new ground grid and fence on a foot print about half the size of the existing yard.**
- 13. Install a new 5kV circuit from the new transformer to the new switchgear.**
- 14. Supply the SEL relaying to be installed in the Bat Electric control panels.**
- 15. Provide engineering for the substation installation.**
- 16. Provide testing and programing of the SEL relays.**

Plant Electrical

- 1. Move the existing control panel.**
- 2. Remove the open bus switchgear behind the existing control panel.**
- 3. Remove the existing 2300V cable and control wiring.**

4. Saw cut the existing concrete for new power and control conduits.
5. Supply and install new conduits and cable trenches and replace concrete
6. Install the Bat Electric supplied control panels.
7. Install two Bat Electric supplied line neutral cabinets adjacent to the generators to facilitate connection to the generator leads.
8. Supply and install 5kV circuits from the outdoor switch gear to the generators.
9. Supply and install all control circuits from the control panels to both generators, the substation, one HPU skid and the intake structure.
10. Supply and install two 2" conduit up the penstock to the head gate.
11. Supply and install a DC distribution panel.

Items not included:

1. Electrical engineering for the plant.
2. Disposal cost for any PCBs or asbestos.
3. Any major upgrades to the station service or plant electrical.
4. Any Xcel Energy costs.
5. Any permitting costs.
6. The position transducers for the gates. (usually Riverside supplied)
7. Any level or pressure transducers. (usually Riverside supplied)

Electrical Installation Cost:	\$1,184,000
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Deduct for Refurbished Power Transformer:	\$55,000
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APPENDIX G – Controls/Switchgear Specifications & Bat Electric Quote



**CUSTOM
CONTROLS
AND
SWITCHGEAR**

BAT ELECTRIC, Inc.
20400 Martinez Lane
Redding, CA 96002
Phone 530-221-1336
Fax 530-221-3496
BATELECINC@aol.com

July 14, 2015

Sorenson Engineering
5203 S 11th E
Idaho Falls, ID 83404

Attn: Ted Sorenson
Subj: Grand Valley Hydro Project
Re: BAT-15Q0548

Dear Ted,

I am pleased to offer the following preliminary quotation for the Dual 1750kW Grand Valley Hydro Project's electrical controls, switchgear, and miscellaneous equipment. Since there are presently no specifications, this quotation is offered based on standard requirements for a project of this size. Project requirements may cause revisions to this proposed list of materials and thus alter final prices.

PROJECT GENERAL INFORMATION

The power plant will consist of two Francis turbine-driven generator sets. The Francis turbines are to have hydraulically operated wicket gates and inlet gate. The generators will be of the synchronous type, rated 1750kW, 4.16kV, 3Ø, and 60Hz. The controls will consist of manual hard-wired control and PLC based automatic control. Automatic control will consist of auto start, and plant flow control. The generators will be placed on-line when the unit is at rated speed, rated voltage, and in sync with the utility by a dedicated vacuum circuit breaker.

SWITCHGEAR EQUIPMENT FOR DUAL 1750kW GENERATORS

- | | | |
|-----|----|--|
| Qty | 3- | Pad Mounted Outdoor Switchgear Cubicle rated 4.16kV, 1200A |
| | 2- | 3 Pole, 4.16kV, Draw out Vacuum Main Circuit Breaker (1200A, 25kA), with 125VDC open/close coils and 120VAC charge motor |
| | 3- | (BCT) Main Feeder Bus Current Transformers, 800/5 |
| | 2- | (BPT) Bus Potential Transformers, 35/1, Mounted in Draw out Drawers |
| | 2- | (CCT) Excitation Cross Current Transformers (400/5) |
| | 4- | (GPT) Generator Potential Transformers, 35/1, Mounted in Draw out Drawers |
| | 6- | (GCT) Generator Current Transformers (400/5) |
| | 4- | Generator Main Breaker Open/Close Indicating Lights |
| | 1- | Lot Fuse Blocks, Terminal Blocks, and Nameplates as required |

GENERATOR CONTROL PANEL EQUIPMENT LIST (TYPICAL OF 2)

Qty	1-	NEMA 12 Floor Mount Enclosure, ASA61 gray enamel
	1-	(12/13/14) Speed Relay
	1-	(25) Sync Check Relay (utility grade)
	1-	(25A) Auto Synchronizer/Speed Control
	1-	(39) Over Vibration Trip Circuit
	1-	(GMFR) Generator Multi-Function Protective Relay: (27/59 Under/Over Voltage (32R) Reverse Power, (40) Loss of Excitation, (46) Current Balance, (47) Phase Sequence, (49) Temperature, (51V) Volt Restrained Overcurrent, (59G) Ground Fault, and (81O/U) Over/Under Frequency and Metering (V, A, kW, PF, kVAR, HZ, kWh)
	1-	(86E) Electrical Lockout Relay
	1-	(86M) Mechanical Lockout Relay
	1-	(86V/F) Volt/Frequency Lockout Relay
	1-	(DMM) Digital Multi Meter
	1-	(GAM) Generator Ammeter, (0-400A)
	1-	(GFM) Generator Frequency Meter, (55-65Hz)
	1-	(GVM) Generator Voltmeter, (0-5250V)
	1-	(HM) Hour Meter
	1-	(TACH) Tachometer, (0-? RPM)
	1-	(WPM) Wicket Gate Position Meter, (0-100%)
	1-	(1CS) Start/Stop Switch (Start-Stop)
	1-	(52CS) Breaker Control Switch (Trip-Close)
	1-	(GAS) Generator Ammeter Switch, 3-position with off
	1-	(GVS) Generator Voltmeter Switch, 3 position with off
	1-	(IGCS) Inlet Gate Control Switch (Close-Open)
	1-	(MS) Mode Switch (Off-Man-Auto)
	1-	(SMS) Start Mode Switch
	1-	(SSW) Sync Switch with removable handle (On-Off)
	1-	(VAS) Volt Adjust Switch (Lower-Raise)
	1-	(WCS) Wicket Gate Control Switch
	2-	On Line/Off Line Indicating Lights
	2-	Wicket Gate Open/Close Indicating Lights
	2-	Inlet Gate Open/Close Indicating Lights
	2-	Start/Stop Indicating Lights
	1-	(PLC) Programmable Logic Controller Expansion Rack with digital and analog I/O
	1-	Fault Annunciator, 28-Point
	1-	Lot Auxiliary Relays, Timers, and Power Supplies
	1-	Lot Field Interconnect Terminal Blocks
	1-	Lot Controls Fuses
	1-	Lot Engraved Nameplates
	1-	Lot Test Switches
	1-	Lot Interface Excitation Controls (Excitation System optional)
	1-	Lot Interface to Hydraulic Control System (HPU by others)
	1-	Lot Interface to Cooling Water System
	1-	Lot Interface to Turbine/Generator Alarm Panel

PLANT CONTROL PANEL EQUIPMENT LIST

Qty	1-	NEMA 12 Floor Mount Enclosure, ASA61 Gray Enamel
	1-	(TMFR) Transformer Multi-function Relay (50/51T), (51TG), (87T)
	1-	(86P) Plant Lockout Relay
	1-	(BMFR) Bus Multi Function Protective Relay (27/59), (46), (47), (51), (81 O/U)
	1-	(BAM) Bus Ammeter, (0-2000A)
	1-	(BDMM) Bus Digital Multi Meter
	1-	(BFM) Bus Frequency Meter, (55-65Hz)
	1-	(BGM) Bypass Gate Position Meters, (0-100%)
	1-	(BVM) Bus Voltmeter, (0-5250kV)
	1-	(BAS) Bus Ammeter Switch
	1-	(BGCS) Bypass Gate Control Switch (Close-Open)
	1-	(BVS) Bus Voltmeter Switch
	1-	(ES) Emergency Stop
	1-	(MS) Mode Switch (Man-Auto)
	1-	(PLC) Programmable Logic Controller Main Rack with digital and analog I/O
	1-	(PID) Flow Control
	1-	(OIU) Operator Interface Unit, 10" Color Touch Screen
	1-	Fault Annunciator, 28-Point
	1-	Lot Auxiliary Relay, Timer, and Power Supplies
	1-	Lot Field Interconnect Terminal Blocks
	1-	Lot Control Fuses
	1-	Lot Engraved Nameplates
	1-	Lot Test Switches
	2-	Bypass Gate Open/Close Indicating Lights
	1-	Lot Interface Sump Pump Control
	1-	Lot Interface to Bypass Gates Control System

SYNC METER PANEL EQUIPMENT LIST

Qty	1-	NEMA 12 Enclosure, ASA61 Gray Enamel
	1-	(IFM) Incoming Frequency Meter (55-65Hz)
	1-	(IVM) Incoming Voltmeter (0-5250kV)
	1-	(RFM) Running Frequency Meter (55-65Hz)
	1-	(RVM) Running Voltmeter (0-5250kV)
	1-	(SSC) Syncscope (Slow-Fast)
	1-	(SL) Sync Lights

SHIP LOOSE ITEMS

Qty	1-	Breaker Lift Truck
	2-	Magnetic Speed Pickups

EQUIPMENT MANUFACTURES

The following equipment manufactures are proposed. BAT ELECTRIC reserves the right to substitute equipment of equal quality at time of manufacture:

Main Circuit Breakers, 4.16kV, 1200A	General Electric
Protective Relays, Utility Grade	Beckwith/GE Multilin/SEL
Meters, 4 1/2", 1%	Crompton
Switches, Series 26	Shallco
Transformers	GE-ITI
PLC	GE RX3i
Indicating Lights	General Electric
Auxiliary Relays	General Electric/Idec

The control panel and switchgear will include three (3) sets of as-built drawings and manuals. The manuals will include manufacturers published instructions, operation sequence, standard maintenance guidelines, material list, suggested spare parts list, and terminal block interconnect diagrams.

Total Net Price	\$ 384,700.00
Delivery	30-36 Weeks ARO
FOB	Redding, California
Terms	To Be Determined

EQUIPMENT DIMENSIONS

The proposed dimensions for the switchgear and control panel are as follows:

3 Switchgear High Voltage Cubicles	To Be Determined
3 Control Panel Cubicles	108"(W) x 36"(D) x 90"(H)
1 Sync Meter Panel Attached to Controls	20"(W) x 10"(D) x 24"(H)

OPTIONAL EQUIPMENT

1. Provide Indoor Generator Line/Neutral Cubicle. Cubicle to contain:

1 Lot Mount (ET) Excitation Transformer (ET part of Option #2)
3ea (DCT) Differential Current Transformer (400/5)
1ea (GPT) Ground Potential Transformer (5kVA, 4.16kV/120V)
1ea (LR) GPT Load Resistor (13 Ohm)
3ea (LA) Lightning Arrestors (6kV)
1ea (SC) Surge Capacitor (4.16kV)

Net Adder for 2ea\$ 35,000.00

2. Provide Voltage Regulator Control Equipment for Brushless Excitation. Provide Basler DECS 200 and 4000VA, 4.16kV/240V Control Power Transformer.

Net Adder for 2ea..... \$ 20,000.00

OPTIONAL EQUIPMENT – CONT.

3. Upgrade OIU to 15” Touch Screen. OIU to have Level/Output Graphs, Event Logging and Status display.

Net Adder\$ 17,500.00

4. Add Additional Ethernet Port to 10” or 15” OIU for High Speed Communication Link.

Net Adder\$ 3,000.00

5. Provide HPU Skid Control Panel.

Net Adder for\$ 5,000.00

6. Add Turbine/Generator Accessories:

Turbine/Generator Alarm Panel (2)	\$ 3-5,000.00ea.
Electronic Vibration Switches (4)	\$ 1,350.00ea.
Wicket Gate Position Transducer (2)	\$ 750.00ea.
Wicket Gate Limit Switches (6)	\$ 250.00ea.
Turbine Shutoff Valve Limit Switches (?)	\$ 250.00ea.
Bypass Gate Position Transducer (?)	\$ 1,050.00ea.
Penstock Pressure Transducers (2)	\$ 425.00ea.
Turbine Pressure Transducers (?)	\$ 425.00ea.
Turbine Discharge Pressure Transducers (?)	\$ 475.00ea.
Cooling Water Pressure Transducers (2)	\$ 425.00ea.
Seal Water Pressure Switch (?)	\$ 200.00ea.
Cooling Water Pressure Switch (?)	\$ 200.00ea.
Submersible Pressure/Level Transducers (2)	\$ 900.00ea.

Total Net Adder \$To be Determined

7. 16 channel dialer w/rechargeable battery and 4 ea. signal isolators.

Net Adder \$ 5,000.00

The prices listed in this quotation are effective for six (6) months from the date of this letter. This quote has not allowed any provisions for taxes or duties required in shipping into or out of the state of California, or into or out of the United States and other countries. Any extra charges incurred by BAT ELECTRIC for shipping or taxes will be billed on a cost basis.

The switchgear and controls will be completely shop tested before shipment. On site relay calibration and high potential testing is not included in this quotation. BAT ELECTRIC is an equipment supplier and will not perform installation of electrical equipment or field terminations.

Startup service is available at the rate of \$1,000.00 per day plus expenses. For a project of this size, you should allow approximately 4-6 weeks and three trips to verify installation, startup the units and parallel to utility, tune auto restart, and adjust flow controls. Note: If 12” OIU touch screen Option #5 is selected, will need to allow 5-10 days for on-site OIU operation verification by software programmer. Programmer daily rate is \$850.00 per day plus expenses.

We appreciate the opportunity to quote and supply your electrical switchgear and control equipment requirements. BAT ELECTRIC can also provide price quotations on station service and substation protective relaying. Please contact me directly if you have any questions and/or comments on this proposal you would like to discuss.

Sincerely,

Dan Batdorf

MAJOR COMPONENTS

ITEM	DESCRIPTION	TYPE	MANUFACTURER
12/13/14	Speed Relay	SST2400A	Dynalco
25	Sync Check	BE1-25	Basler
25A	Auto Synchronizer	BE3-25A	Basler
BMFR	Bus Multi Function Relay	M3410A	Beckwith
47-27/59	Phase Sequence – U/O Voltage		
51	Over Current		
81O/U	Over/Under Current Frequency		
52G	Generator Breaker	50-VCP-W25	Cutler Hammer
GMFR	Generator Multi Function Relay	SR489	GE Multilin
32R	Reverse Power Relay		
46	Current Balance Relay		
47-27/59	Phase Sequence-U/O Voltage		
49	Temperature Relay		
51V	Voltage Restrained Over Current		
59N	Neutral Overvoltage Relay		
81 O/U	Over/Under Frequency Relay		
87	Differential Relay		
TMFR	Transformer	SEL-787	Schweitzer Engineering Laboratories
50/51T	Transformer Over Current		
51GT	Transformer Ground Over Current		
87T	Transformer Differential		
86E, 86M	Lockout Relays	Series 76	Shallco
86VF	Volt/Freq Lockout	700DC-P800	Allen Bradley
CT	Current Transformer	780	ITI
PT	Potential Transformer	PTG-3-2-60-123FF	ITI
PLC	Programmable Logic Controller	RX3i	GE Fanuc
	Meters	4 1/2" Switchboard	Crompton
	Switchboard Switches	Series26	Shallco
	Surge Capacitors	18L0015WH	General Electric *
	Lightning Arrestors	9L11XPB06S	General Electric *

* - Denotes Optional Equipment

APPENDIX H – Preliminary Power Sales Exploration Summary

Grand Valley Hydro Power Sales

Platte River Power Authority –

Paying \$45-50/MWh for power right now. They may be able to help with wheeling. Contact: Debbie Seidman, seidmand@prpa.org. (970) 962-3000.

Poudre Valley Rural Electric –

Interested. They said they will get back to us and haven't yet. Contact: David White, (970) 282-6414

Yampa Valley Electric Association –

Can only purchase 1.25 MW and they think this is a deal breaker. Need to follow up. Contacts: Diane Johnson, (970) 871-2220, DJohnson@yvea.com. The assistant may be easier to get ahold of: Larissa Wilson, LWilson@yvea.com.

Grand Valley Power –

Very interested. They say they can only purchase 1.0 MW. Contact: Steve Don, (970) 623-8572, sdon@gvp.org

Holy Cross Energy –

Interested. Chris, (970) 945-5491, childred@holycross.com.

Glenwood Springs –

Interested. May not be able to buy power until 2023. Contact: Robin Millyard, robin.millyard@cogs.us, 970-384-6409

San Luis Valley –

Preliminary contact made. They may be interested. Contact: Lauren Howard, 719-852-3538

APPENDIX I – Proposed Rebuild Schedule

Proposed Grand Valley Hydro Rebuild Schedule

<u>Item</u>	<u>Description</u>	<u>Timeline</u>
1	Apply for CWCB Loan	Oct 2015
2	Loan Approved	Nov 2015
3	Obtain Funds	Dec 2015
4	Order Turbines	Dec 2015
5	Order Controls & Switchgear	Dec 2015
6	Order Substation Equipment	Dec 2015
7	Order Trash Racks	Dec 2015
8	Pull Unit #1 and Begin Rewind (obtain final measurements for Turbine and send to Liu)	Jan 2016
9	Pull Unit #2 and Begin Rewind	Mar 2016
10	Recoat Penstocks	Feb-Mar 2016
11	Install New Trash Rack	Feb-Mar 2016
12	Substation and Electrical Work by Caribou	Mar-Nov 2016
13	Controls and Switchgear arrive from Batdorf	June 2016
14	Turbines arrive at RSI	July 2016
15	New HPU, Air Compressor, Sump Pumps, etc. installed by RSI	July-Sept 2016
16	Unit # 1 Installed by RSI	July-Aug 2016
17	Unit #2 Installed by RSI	Aug-Sept 2016
18	Batdorf Arrives to Claim all the Credit	Nov 2016
19	Online	Nov 2016

APPENDIX J – Present Turbine & Generator Efficiencies

Present Penstock Head Losses

Grand Valley Hydro

Existing Turbine X Generator Efficiencies

Unit 1

Run #	Estimated Flow CFS	Head Turbine Inlet PSI	Head Turbine Inlet ft	Velocity Head Turbine Inlet (78") ft	Net Head Turbine ft	Actual Measured MW	Theoretical MW	Measured Turbine X Generator Efficiency %
2	340	31.7	73.23	1.6	74.85	1.15	2.15	53.4%
3	250	32.2	74.38	0.9	75.26	0.80	1.59	50.2%
4	150	32.7	75.54	0.3	75.85	0.38	0.96	39.5%

Unit 2

Run #	Estimated Flow CFS	Head Turbine Inlet PSI	Head Turbine Inlet ft	Velocity Head Turbine Inlet (78") ft	Net Head Turbine Feet	Actual Measured MW	Theoretical MW	Measured Turbine X Generator Efficiency %
6	400	30.8	71.15	2.2	73.39	1.36	2.48	54.7%
7	250	32.2	74.38	0.9	75.26	0.80	1.59	50.2%
8	160	32.5	75.08	0.4	75.43	0.41	1.02	40.1%

* Test conducted November 2014

Grand Valley Existing Penstock Head Losses Measured vs Calculated

Unit 1

Run #	Flow cfs	Pipe Diam inches	Head Level ft	Velocity ft/sec	Velocity Head ft	Pressure Head PSI	Pressure Head ft	Total Head ft	Measured Penstock Headloss ft	Calculated Headloss C=70	Generation KW
1	0	78	8.90	0.00	0.00	33.0	76.23	76.2	-		0
2	340	78	7.52	10.22	1.62	31.7	73.23	73.5	2.8	2.6	1150
3	250	78	8.30	7.52	0.88	32.2	74.38	74.7	1.6	1.5	800
4	150	78	8.80	4.51	0.32	32.7	75.54	75.8	0.5	0.6	380

Unit 2

Run #	Flow cfs	Pipe Diam inches	Head Level ft	Velocity ft/sec	Velocity Head ft	Pressure Head PSI	Pressure Head ft	Total Head ft	Measured Penstock Headloss ft	Calculated Headloss C=70	Generation KW
5	0	78	8.60	0.00	0.00	32.9	76.00	76.0	-		0
6	400	78	7.49	12.03	2.25	30.8	71.15	72.3	3.7	3.5	1360
7	250	78	8.30	7.52	0.88	32.2	74.38	75.0	1.0	1.5	800
8	160	78	8.60	4.81	0.36	32.5	75.08	75.4	0.6	0.6	410

* Test conducted November 2014



COLORADO WATER RESOURCES & POWER DEVELOPMENT AUTHORITY

Logan Tower Bldg - Suite 620, 1580 Logan Street, Denver, Colorado 80203-1942
303/830-1550 • Fax 303/832-8205 • info@cwrpda.com

November 14, 2016

Ms. Anna Mauss
Finance and Administration Section
Colorado Water Conservation Board
1313 Sherman St., Room 718
Denver, CO 80203

**Re: Letter of Support
Orchard Mesa Irrigation District and Grand Valley Water User's
Association
Grand Valley Power Plant Hydroelectric Project**

Dear Ms. Mauss:

We understand the CWCB is considering a loan application from Orchard Mesa Irrigation District (a governmental entity) and Grand Valley Water User's Association (an Association) for the Grand Valley Power Plant Hydroelectric Project in the approximate combined amount of \$5.2 million.

The Authority's small hydropower loan program currently provides loans of up to \$2 million for up to 20 years. Because this Project requires more than \$2 million, a 30-year payback period, and one of the participants is not a governmental entity the Authority's small hydropower program would not be a feasible alternative financing source. Therefore, the Authority is in full support of the project and of the District/Association's funding request to the CWCB.

If you have any questions or we can be of further assistance, please let me know.

Sincerely,

A handwritten signature in black ink, appearing to read "Michael Brod", with a long, sweeping horizontal line extending to the right.

Michael Brod
Executive Director