



Western
Area Power
Administration

Customer Meeting

Colorado River Storage Project Management Center

May 25, 2016





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**Welcome to the
CRSP Annual Customer Meeting
May 25, 2016
11:00 am – 3:00 pm**

The meeting will begin at **11:00 am MST**

We have logged on early for connectivity purposes

Please stand-by until the meeting begins.

Please remember to keep your **phone muted** unless you have a question or comment.

Handout Materials

<http://www.wapa.gov/crsp/ratescrsp/default.htm>



CRSP-MC Annual Customer Meeting
May 25, 2016
11:00 am – 3:00 pm

Welcome and Introductions



Agenda

- 11:00 – 11:05 am Welcome and Introductions
Lynn Jeka, Senior VP & CRSP Manager
- 11:05 – 12:35 am Enterprise Risk Overview - Risk, Security and Staff
Mark Gabriel, WAPA Administrator and CEO
Dawn Roth Lindell, WAPA CIO & Senior VP
- 12:35 – 12:45 am Break
- 12:45 – 1:15 pm Mountain West Transmission –
Rodney Bailey, Power Marketing Advisor
- 1:15 – 1:45 pm CRSP Power Billing Project –
Chrystal Dean and Amy Cutler
- 1:45 – 2:45 pm CRSP-MC Rates Presentation
Jacob Streeper, Tony Henriquez, and Thomas Hackett
- 2:45 pm Questions and Closing –
Adam Arellano





Western
Area Power
Administration

Enterprise Risk Overview

Risk, Security and Staff



May 25, 2016

CRSP All Customer Meeting

Salt Lake City, Utah

Understanding critical risks



- Today we will discuss
 - ✓ Cybersecurity
 - ✓ Physical security
 - ✓ Human capital
- Inter-related when it comes to cost and risk acceptance
- Develop context and common understanding for future discussions



Risk and costs

- Traditional definition is that:
 - Risk = Threats x Vulnerabilities x Impact

- An additional part of the equation:

$$\frac{\text{Risk} = \text{Threats} \times \text{Vulnerabilities} \times \text{Impact}}{\text{Cost}}$$



Cyber Security

Dawn Roth Lindell | CIO



Cyber attacks: Capability vs. Intent

- China
- The former USSR nations
- US environmental extremists & anti-government
- Friendly nations
- ISIL
- And then came the December 23,2015 Ukraine attack



Ukraine Attack: An Analysis

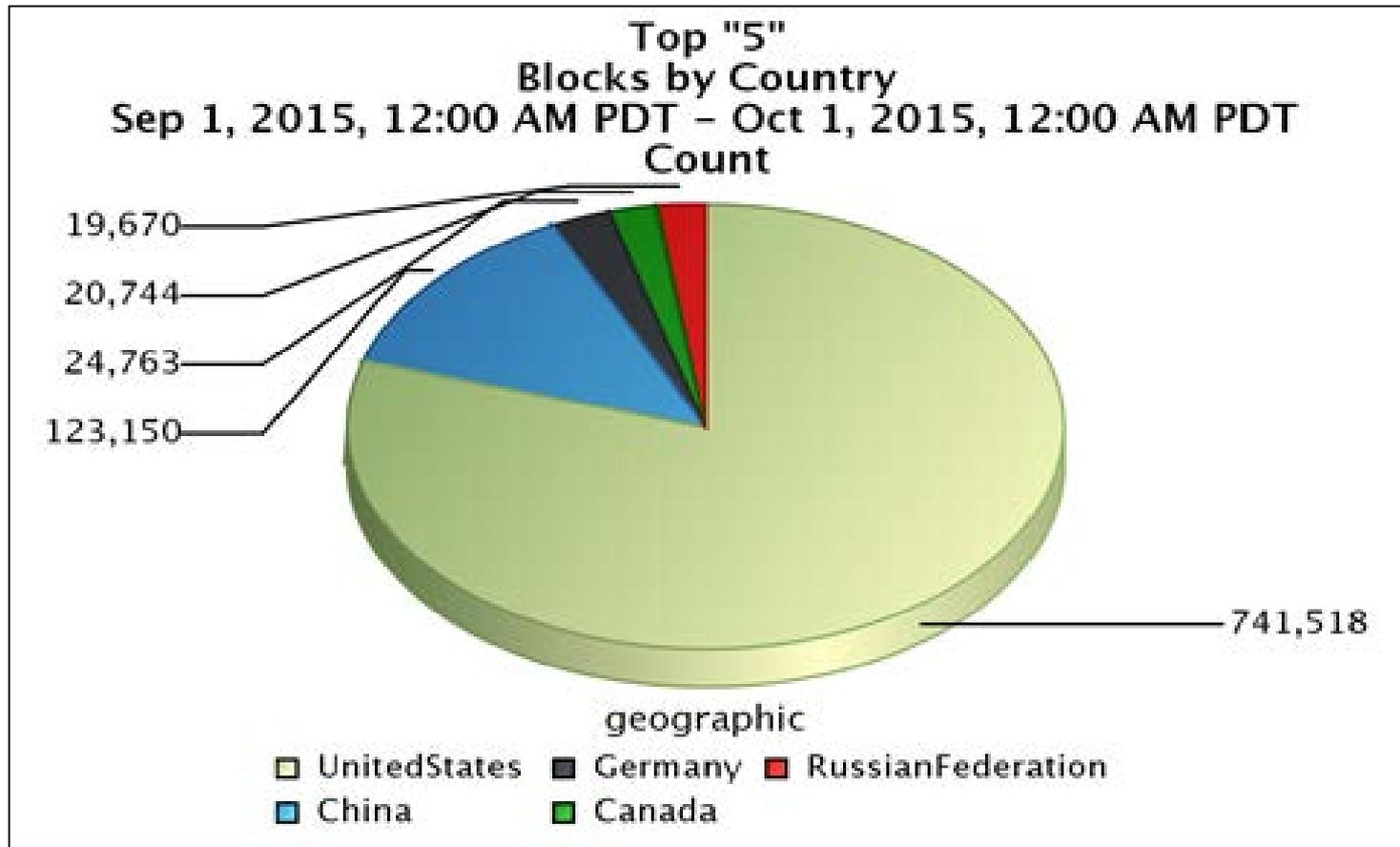
December 23, 2015

By Michael Assante – SANS ICS Director

- Planning
 - Malware installed – blinded dispatchers
 - Denial of service to phone system – blocked customer calls
 - VPN in – undesirable state changes to distribution
 - Wiped SCADA servers – to delay restoration
- Coordination – multiple utilities attacked
- Malware used – definite cyber attack
- Direct remote access



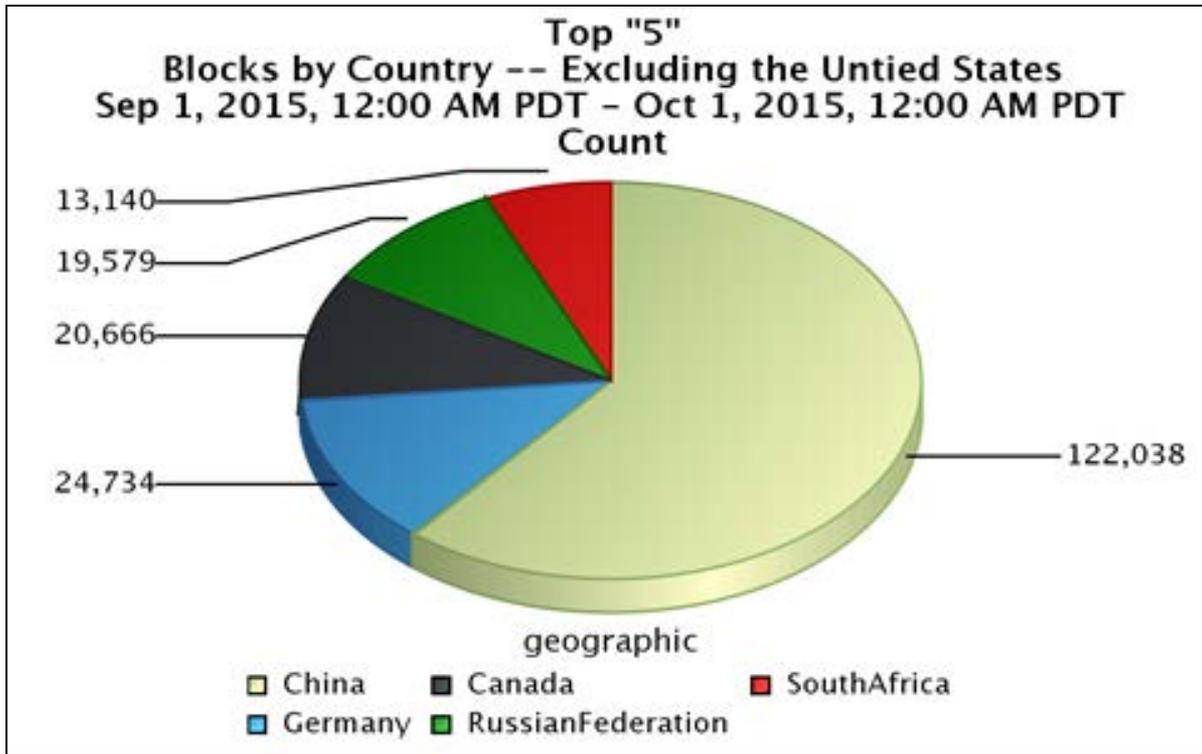
What Western sees monthly: Including hits from within US



Removing the US hits

Other Hits

South-Korea	10,708
United Kingdom	10,522
Japan	10,486
Vietnam	8,197
Netherlands	7,013
Ireland	6,371
France	5,370
India	5,014
Poland	4,275
Kuwait	3,897
Ecuador	3,733
Mexico	3,553
Brazil	3,363
Italy	2,866
Ukraine	2,803



Physical and Cyber Attacks

- “With the increased convergence of cyber and physical worlds, attacks are no longer limited to office computers and networks. They can now have physical impact in the real world.”

--Steve Durbin, Managing Director, Information Security Forum

- Western Area Power Administration
 - 37 physical attacks in 2014
 - Thefts
 - Reconnaissance
 - 650% increase in cyber incidents 2012-2014



Insider Threat



- Angry, frustrated, resentful employees
- Overly helpful office person
- Not the sharpest crayon in the box.....
- IT Staff that is too busy



Cyber Attacks

Power Grid USA Today article: *March 2015*

- Physical and cyber attacks occur 1 in 4 days.
- 362+ attacks since 2011
- Small and large utilities attacked
- Cited only 14 cyber attacks



A year of key Cyber Attacks: 2014

January: A public utility control system hacked

- Internet facing
- Weak password/brute force susceptible



April: Heartbleed

- Half a million (17%) of Internet's secure web servers believed attack vulnerable
- Allow theft
 - Servers' private keys
 - User session cookies and passwords
- **Western:**
 - 67 vulnerabilities identified and corrected



2014 Cyber Attacks, Vulnerabilities

- **May:** Five Chinese nationals indicted
 - Computer hacking and economic espionage
 - Targets included Westinghouse Electric
- **June:** HAVEX Trojan–
 - ICS focused
 - Multi vector
 - Phishing e-mails
 - Redirects to compromised web sites
 - Watering hole through Trojanized update installers – 3 vendors
 - Allowed access to networks, maps servers



Sun
Kailiang



Huang
Zhenyu



Wen
Xinyu



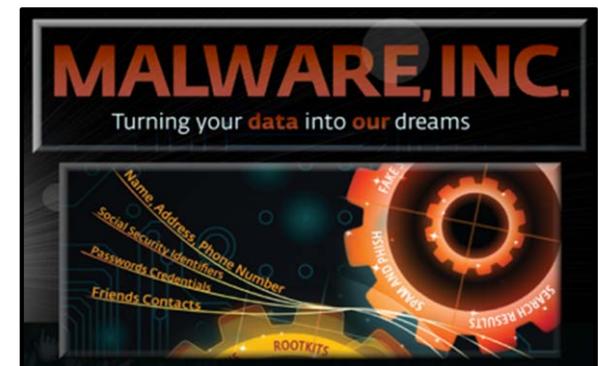
2014 Cyber Attacks/Vulnerabilities

June: Ugly Gorilla hack of Northeastern U.S. Utility

- Exposes cyberwar threat by China
- Stole schematics of pipelines
- Copied security-guard patrol memos
- Cruised channels, keystrokes
 - Potential to cut off a city's heat, explode a pipeline

September:

1. Chinese Government hackers' intrusion of Televent
2. Shellshock/Bashdoor
 - Internet facing
 - Attacker can gain control over system
 - Vulnerability scanning
 - Millions of unpatched servers at risk



2014 Cyber attacks, Vulnerabilities



October: Black Energy

- Published by Kaspersky Lab
- Converted crimeware tool
- Cloud based ICS systems at risk
- Can brick systems it infects and skillfully hide from security analysts.

December: Sony hacked by North Korea

- On US Soil!
- Destructive malware deployed
- Stole employee Personally Identifiable Information (PII)
- Stole proprietary information
- FBI called within hours



Ransomware Fed Agencies attacked

March 2016

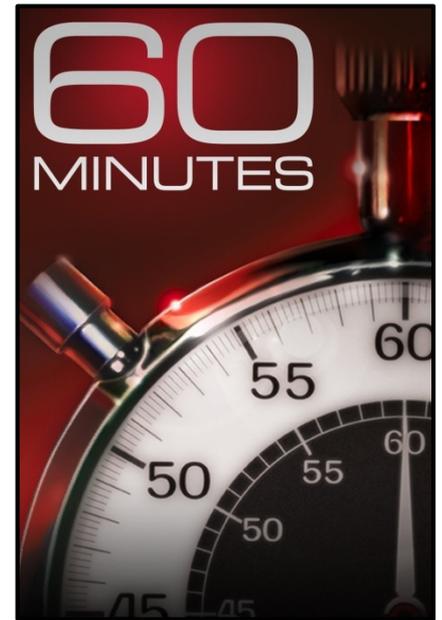
- Reported March 30 by Nextgov
- 321 total agencies attacked
- Phishing attack vector
- Sever the connection with the network
- Shared drives impacted
- Restore to a state prior to the e-mail receipt



60 Minutes

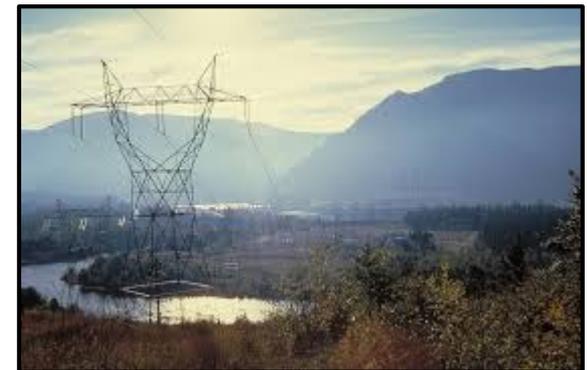
November 30, 2014

- “97% of all companies are getting breached”
 - Fire Eye CEO Dave DeWalt
- Hundreds of thousands each week
- 229 days on average from breach to discovery
- 80% of access is through stolen/weak passwords
- Cited Target Hack
 - Stole user name and password from vendor
 - Installed malware to steal credit card info



ICS Vulnerabilities

- Study by Positive Research Center, October 2015
- 146,136 ICS components web accessible
- Found 691 vulnerabilities in ICS components
 - 58% high severity
 - 39% medium severity
- By Vendor:
 - Siemens – 124
 - Schneider Electric – 96
 - Advantech – 51
 - GE - 31



Information Sharing is Critical!

- Secure, confidential, rapid
- Actionable
- Indemnify
- Cyber happens in milliseconds and is not regional



Western Response



- Measured response – fiscally responsible
- Implementation of Multi factor authentication costs:
 - ✓ Western Area Power Administration \$265,000
 - ✓ DOE Office of the Chief Information Officer \$1,191,692
 - ✓ Los Alamos National Lab \$777,360
 - ✓ Kansas City Plant \$705,800
 - ✓ Sandia National Laboratories \$1,826,682
 - ✓ Thomas Jefferson National Accelerator Facility \$650,700



Western Response

- Critical Infrastructure Protections v5 – 40,000 hour plus investment
- Network Access Control
- Secure Enclave Systems Control – substations
 - Avoid the spend of \$6.5 million over 5 years – Western wide solution
- Eleven required presidential directives
 - Multi factor authentication for administrative and standard accounts
 - Anti –Phishing campaign



Western Response

- 2016 – full inventory of field equipment and supporting technology
 - Every region – all substations
 - Will develop a plan to replace technology
- Supply chain is crucial
 - vendor user groups
 - industry influence on vendor development
- Cyber security training – IT Professionals
- Patching and upgrades **MUST** stay current



Western Response



- Industry sharing
 - Western Area Power Industry Sharing Pilot
- DOE support
 - CRISP/CPP monitoring
 - Free to Western
 - Negotiated licenses
 - Microsoft cost reduced by nearly 90%
 - DOE wide security tools – purchased by DOE HQ CIO
 - Integrated Joint Cyber Communications Center



Major Cyber Security Expenses

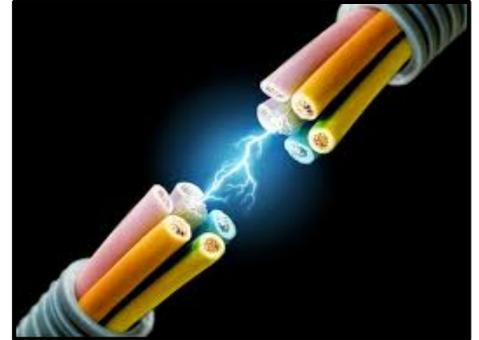
by Fiscal Year

- FY 11: Program Costs: \$130,000
- FY 12: NSOC Implementation: \$365,791
- FY13: NSOC Maintenance: \$314,095
- FY 14:
 - NSOC Maintenance: \$486,012
 - Encase: \$113,746
- FY 15:
 - SESC Implementation: \$1.8 million
 - NSOC Maintenance: \$511,543
 - Forward Anti-Phish and Training: \$30K/yr

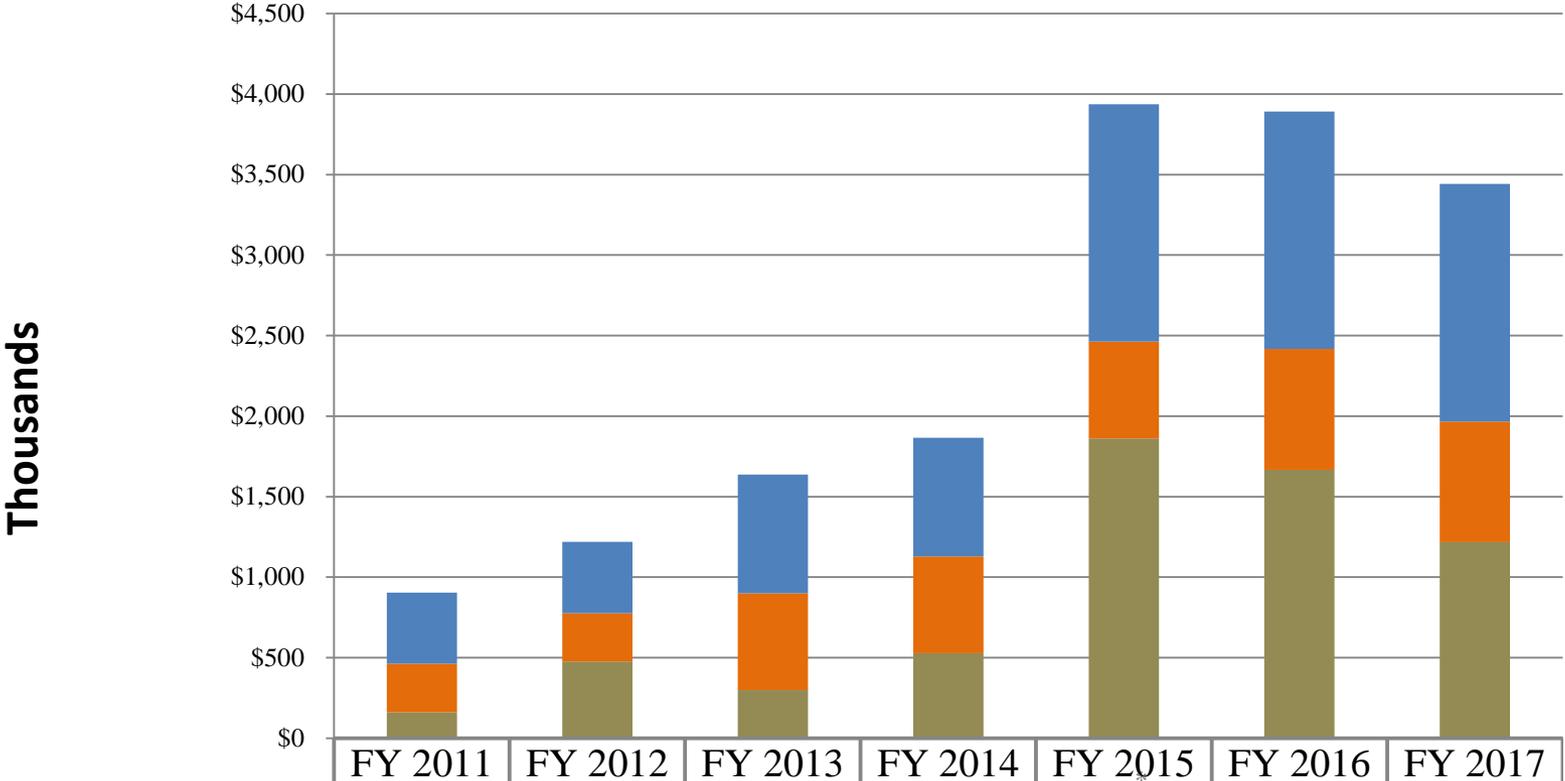


Major Cyber Security Expenses

- FY 16
 - SESC/NSOC Maintenance: \$552,640
 - Data Leakage Prevention: \$470,000
 - NAC: \$350,000 (could be FY 17)
- FY 17
 - NSOC Life Cycle Refresh: \$500,000
 - SESC Maintenance: \$275,000
 - Begin replacement of old field equipment: \$ unknown
 - Sandbox environment: \$ unknown
- FY 18 NSOC/ SESC Maintenance: \$560,000

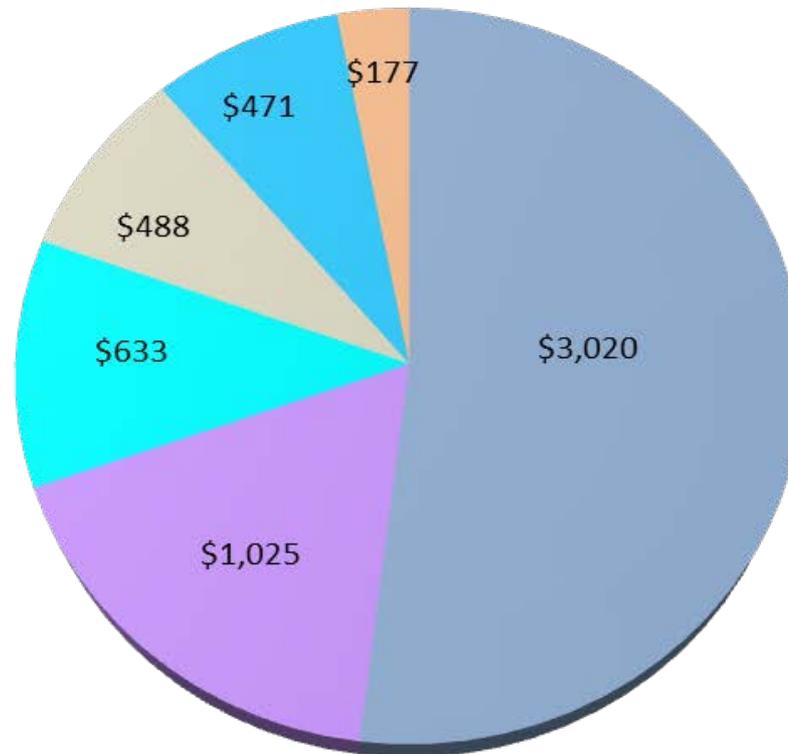


Cyber Security Cost Drivers



IT Cost Savings/Avoidance

FY 2015 Total Savings \$5.8M



■ Purchase Consolidation

■ Travel for Training

■ Personnel

■ Hardware

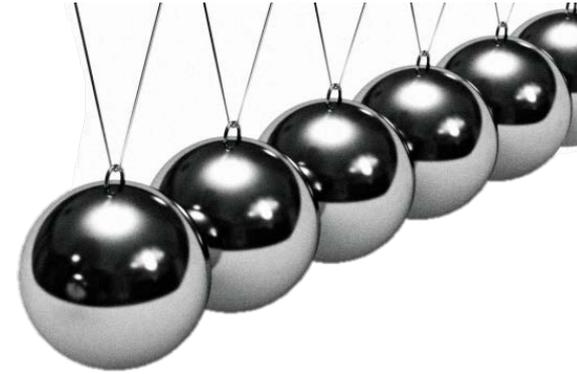
■ Systems

■ Processes/Work Efficiencies



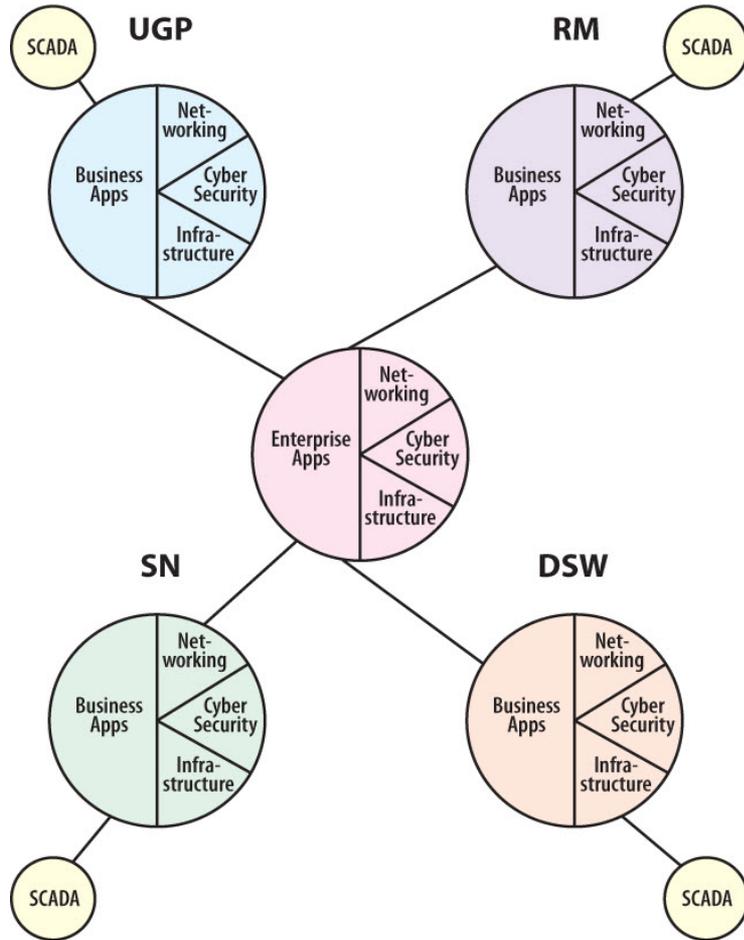
Projects delayed

- 205 projects requested initially for 2016
- 32 are legally mandatory
- Key projects delayed:
 - improved network segmentation (security)
 - improved Network Access Control (security)
 - Expansion of network for IP meters
 - Replace SONET infrastructure – past end of life
 - Provide IP management for IP radios (security)
 - Upgrade VTC (cost savings)
 - Network lifecycle replacements
 - Plus 100 others



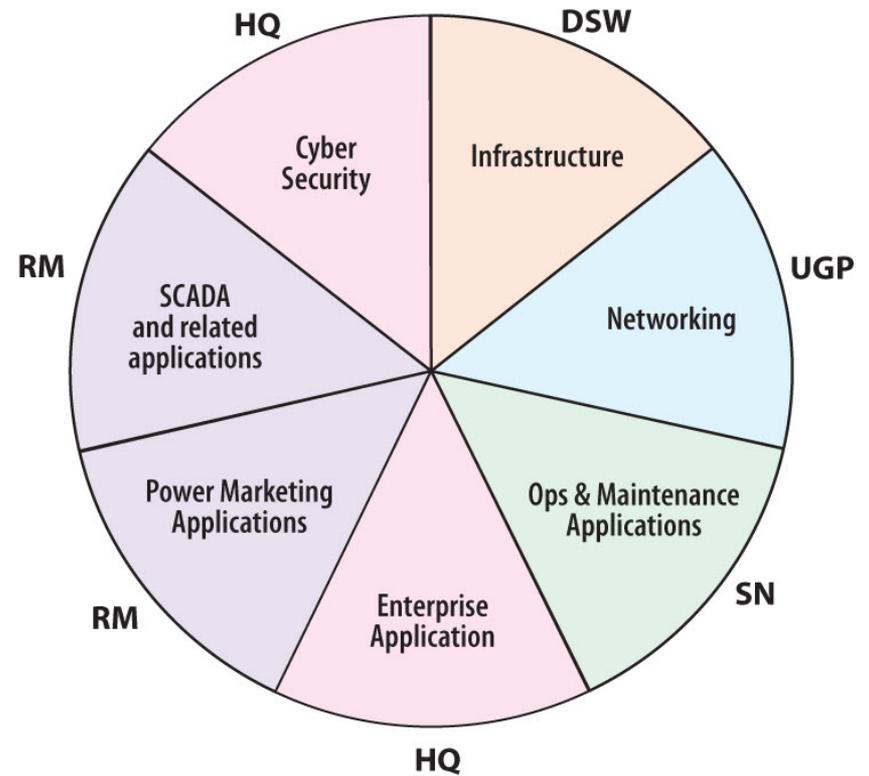
IT Evolution

IT 5 years ago



IT Today

Western wide

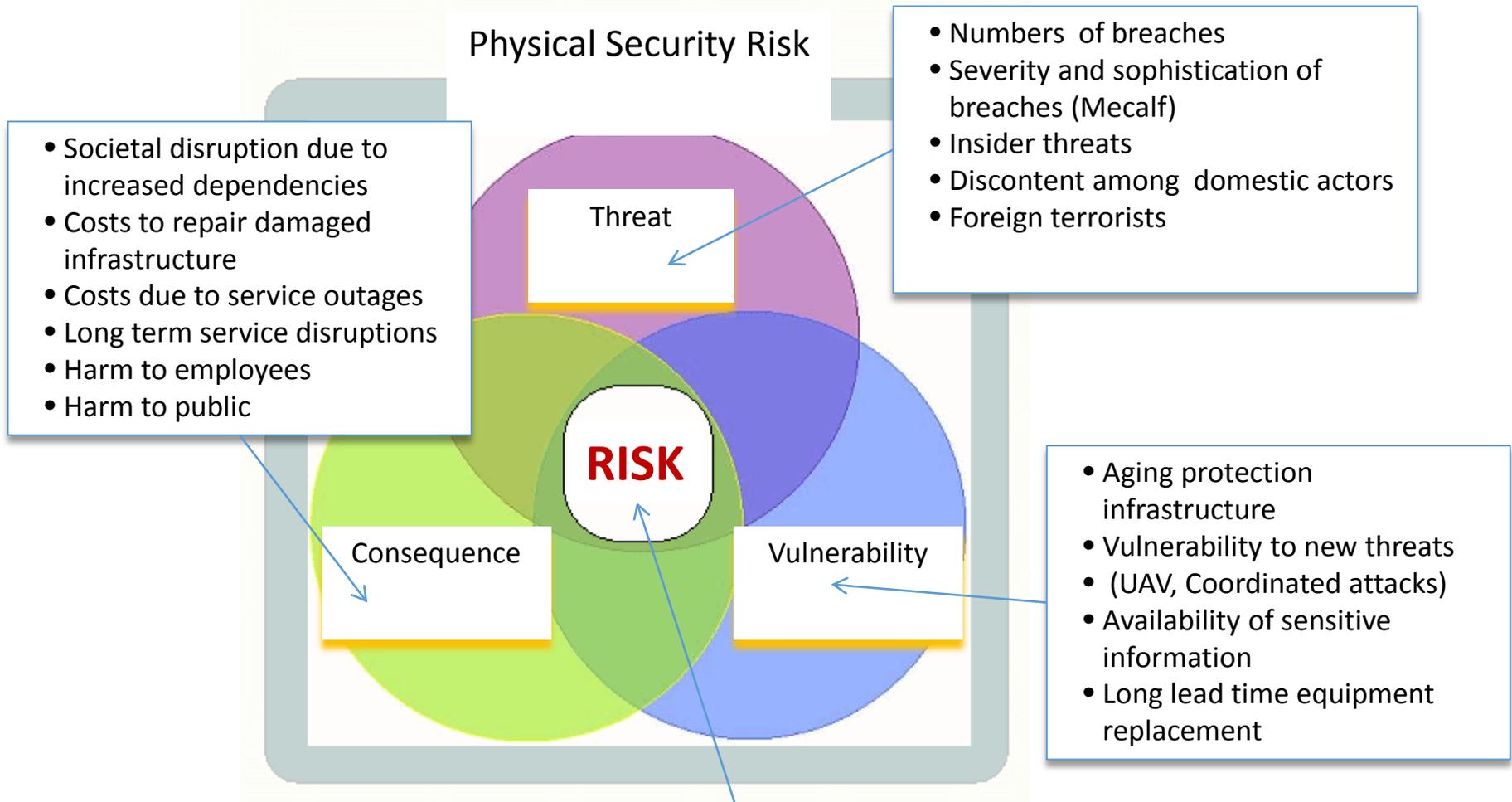


Physical Security

Mark A. Gabriel | Administrator and CEO



Managing Physical Security Risk



Risk due to malicious actor is **INCREASING!**



Inspector General Audits

Findings Through the Years

- 2003:
 - Risk assessments inadequate
- 2010:
 - Incomplete required risk assessments, security measure performance testing, and implementation of recommended security enhancements
- 2013:
 - Formalized Office of Security and Emergency Management
 - Consolidated Western's security programs
- 2014:
 - Updated Risk Management process
 - Developed All Hazard risk assessment
- 2016:
 - Progress noted
 - New recommendations; Regions working through lists



Western's response

- Agile process and culture of compliance
- Making strides in all areas
- Consistent high marks in NERC, WECC
- Fundamental Security Commitment



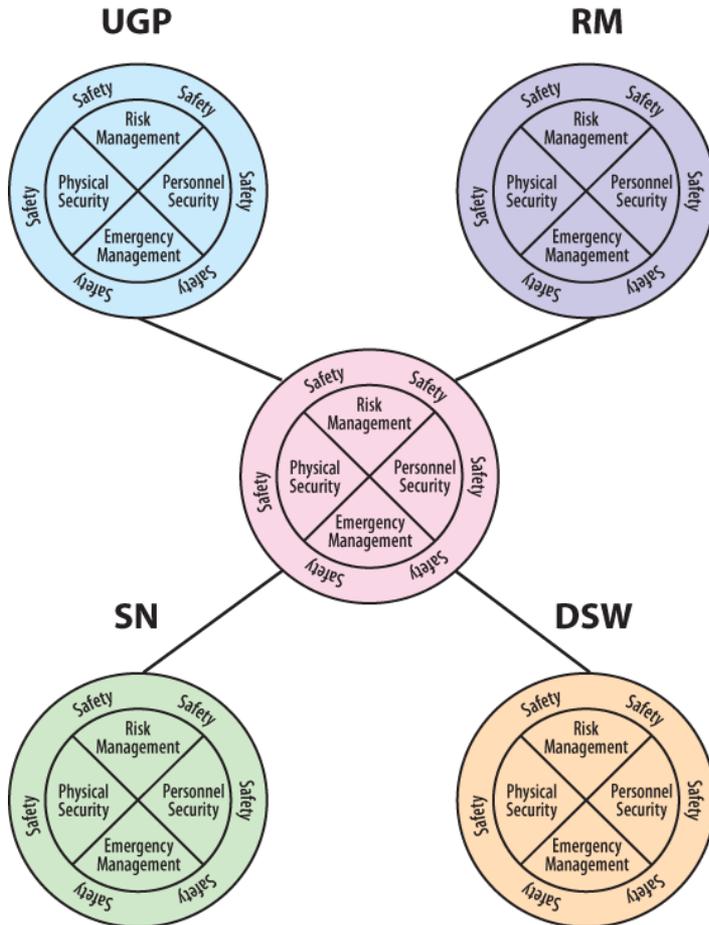
Risk Assessments and Reporting

- NERC CIP 14 – Risk to Bulk Electric System
 - 10 Western CIP 14 sites
 - CIP 14 sites assigned highest baseline Facility Security Levels
 - Reassess ever 2.5 years
- Current status
 - Validation of study work complete
 - Development and verification of mitigation plans in progress
 - Average estimated mitigation cost estimate per site \$677k
 - Highest site - \$2.161M (located in UGP)
 - Lowest site - \$64k (located in SNR)
- Non-CIP 14 sites (330+)
 - Baseline assessments underway and to be completed by 2019
 - Reassess ever 5 years



Security Evolution

Security 3 years ago



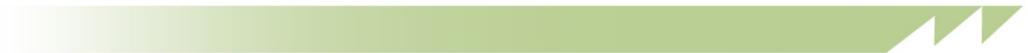
Security Today

Western wide



Human Capital

Mark A. Gabriel | Administrator and CEO

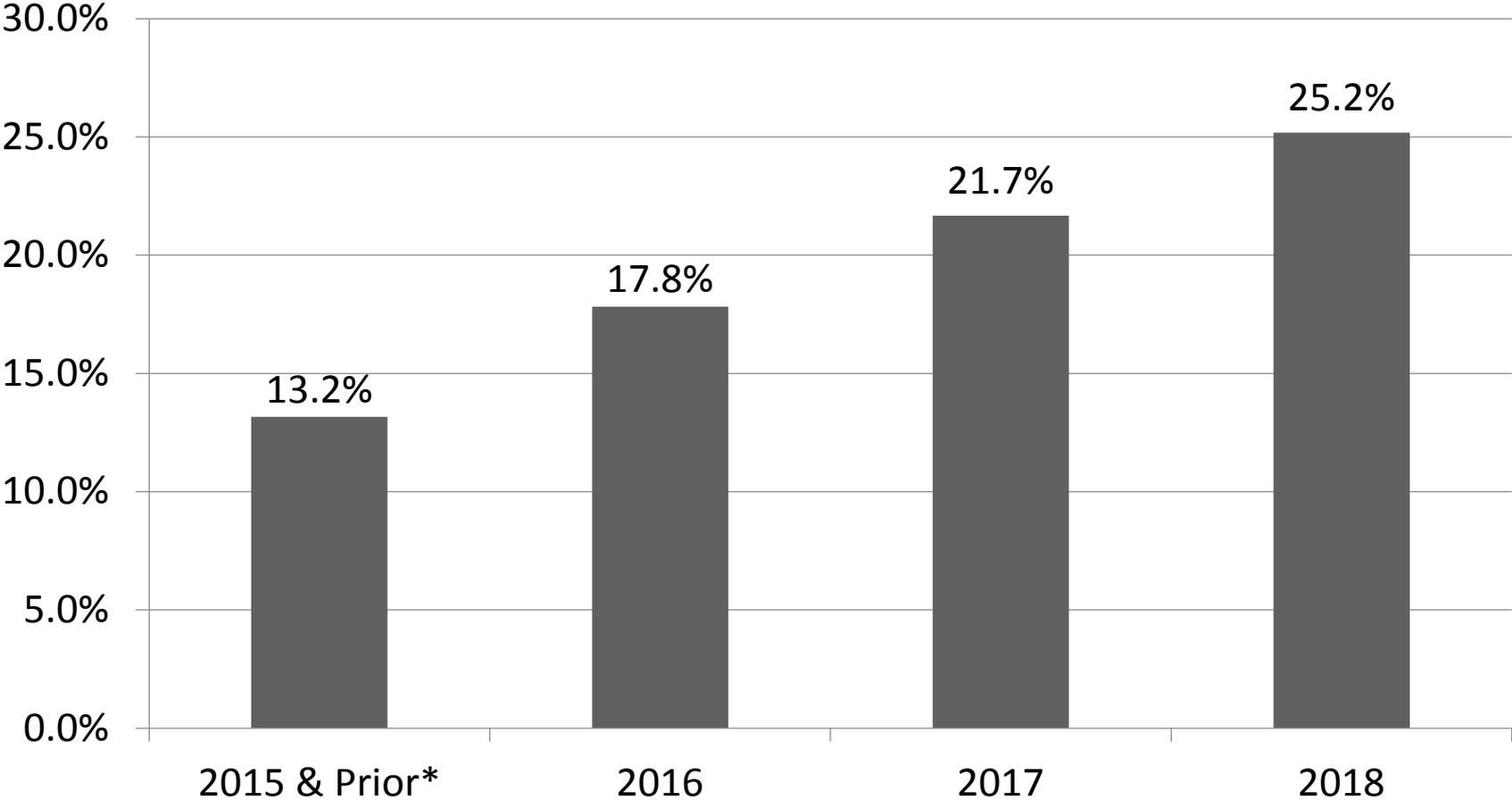


Human Capital SWOT Analysis

	Enablers	Challenges
I n t e r n a l	Strengths	Weaknesses
	<ul style="list-style-type: none"> • Industry leading technical experts • Western institutional knowledge • Passion and commitment to Western's mission and customers 	<ul style="list-style-type: none"> • Aging workforce – mission critical positions • Retirement eligibility growing rapidly • Managerial development
E x t e r n a l	Opportunities	Threats
	<ul style="list-style-type: none"> • Strengthen workforce planning and management • Improve leadership development • Improve knowledge management 	<ul style="list-style-type: none"> • Extensive competition for engineers, IT specialists, and experienced senior managers • Younger workforce mobility



Retirement eligible projections



Engineering special pay rate initiative

- Joint study with other PMAs
- Aimed at mitigating risks such as:
 - PMAs compensate new graduates 11% - 19% lower than industry
 - PMAs compensate existing engineers 6% - 67% lower than industry
 - 46% of industry engineers estimate to retire within the next 5 – 10 years
- Presented proposed adjustment through DOE
- Annual (FY17-20) impact = \$4.3M - \$4.7M



Other potential salary impacts

- General schedule locality adjustments and cost of living increases
- Wage board salary increases
- Administratively determined salary increases
- Senior executive salary adjustments



Committed to Transparency

- Lowest possible rates consistent with sound business principles
- Critical to focus on the big issues we are all facing
- Need customer support to meet your changing needs
- Participation in meetings is critical—as is your engagement in the customer survey process
- *The Source:* www.wapa.gov



Contact

The screenshot shows the Western Area Power Administration website. The header features the logo and tagline "Powering the energy frontier" above "Western Area Power Administration". A search bar is located in the top right. A green navigation bar contains links for "About", "Power Marketing", "Transmission", "Regions", "Newsroom", "Training", "Energy Services", and "Renewables". Below the navigation bar, a breadcrumb trail reads "You are here: Western | About | The Source". A call to action asks users to help redesign the page. The main content area is titled "The Source" and includes a sidebar with links to "Annual reports", "Budget allocation", "By the Numbers", "Customer Circuit", "Presentations, Speeches", "Rates by region", and "Subscribe". The main text describes "The Source" as a new website for operational data and financial information, highlighting Western's communication philosophy and providing links to "Annual Reports", "Budget allocation", "By the numbers", "Presentations, speeches", and "Rates by region". A footer note provides contact information for the Public Affairs office.

Mark A. Gabriel | 720-962-7705 | www.wapa.gov



CRSP Power Billing

Chrystal Dean and Amy Cutler



Overview

- **Project Background – How did we get here...**
 - Customer inquires at a Customer meeting
 - Rapid Improvement Event
 - CRSP bills being prepared in two separate offices
 - Initial meeting with internal stakeholders/Project development
- **Change Management and Project Management**
 - An effective and important partnership!



Frequently Asked Questions

- **Sent to customers on May 2**
- **List of 13 questions developed by the team**
 - Wanted to provide customers with immediate answers to some commonly asked questions
- **Sent to both internal and external stakeholders**
 - Ensures consistency in the message and information you receive
- **Recognize there may be more questions, please call!**



The Project



- **Project Scope:**

- Consolidate all CRSP power billing to one office
- Improve and simplify communication with internal and external customers
- Eliminate duplication of efforts and reduce the potential risk for billing errors

- **Schedule: March 2016 to October 2016**



- **Team Technical Leads:**

- Shelly Winges, Charis Schaefer, Tanya Newman, JB Hite, Brent Osiek, Gerald Bustamante, Beth Kozik, Barb Wayker



Completed Tasks

March 2016

- ✓ Project kickoff meeting
- ✓ Project plans and Overview training

April 2016

- ✓ IT developed and refined RMR Test Instance
- ✓ RMR Billing Team tested bills
- ✓ Draft agreement between RMR, DSW and CRSP went out for review

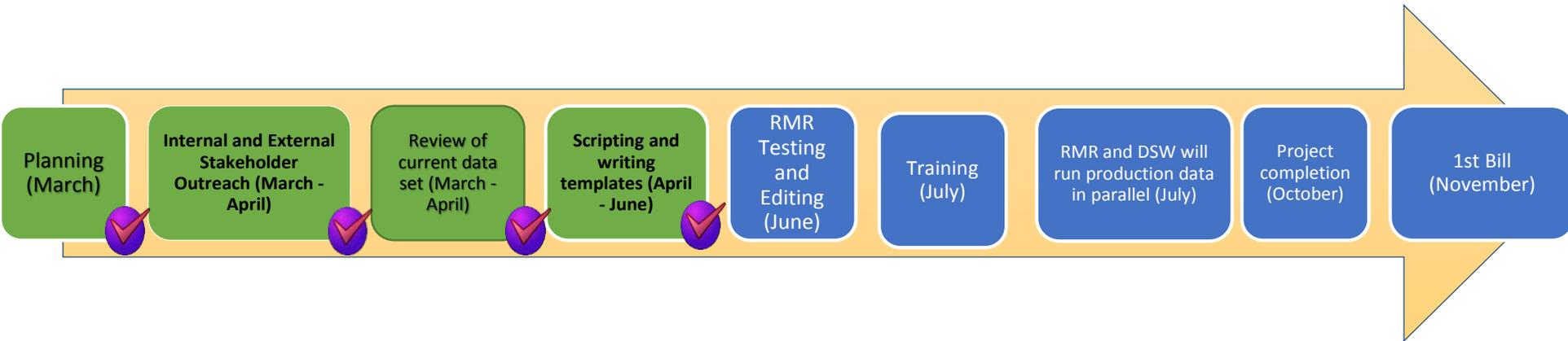
May 2016

- ✓ External Customer Email/Outreach
- ✓ DSW started notifying RMR of any bill changes

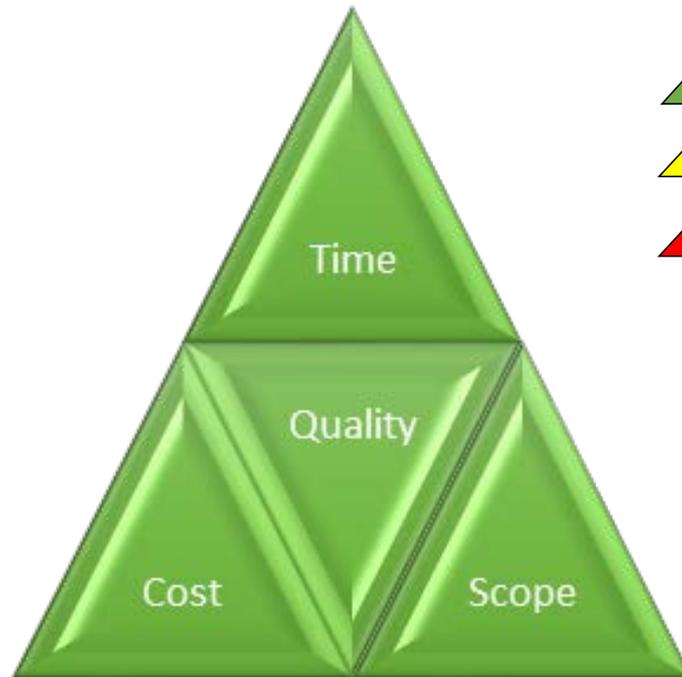


Project Timeline

March 2016 through October 2016



Project Status



-  = On target/OK (green)
-  = Warning/Concern (yellow)
-  = Behind/Trouble (red)



Questions

Project Team Leads

Amy Cutler

cutler@wapa.gov

(801) 524-4012

Chrystal Dean

cdean@wapa.gov

(970) 252-3026



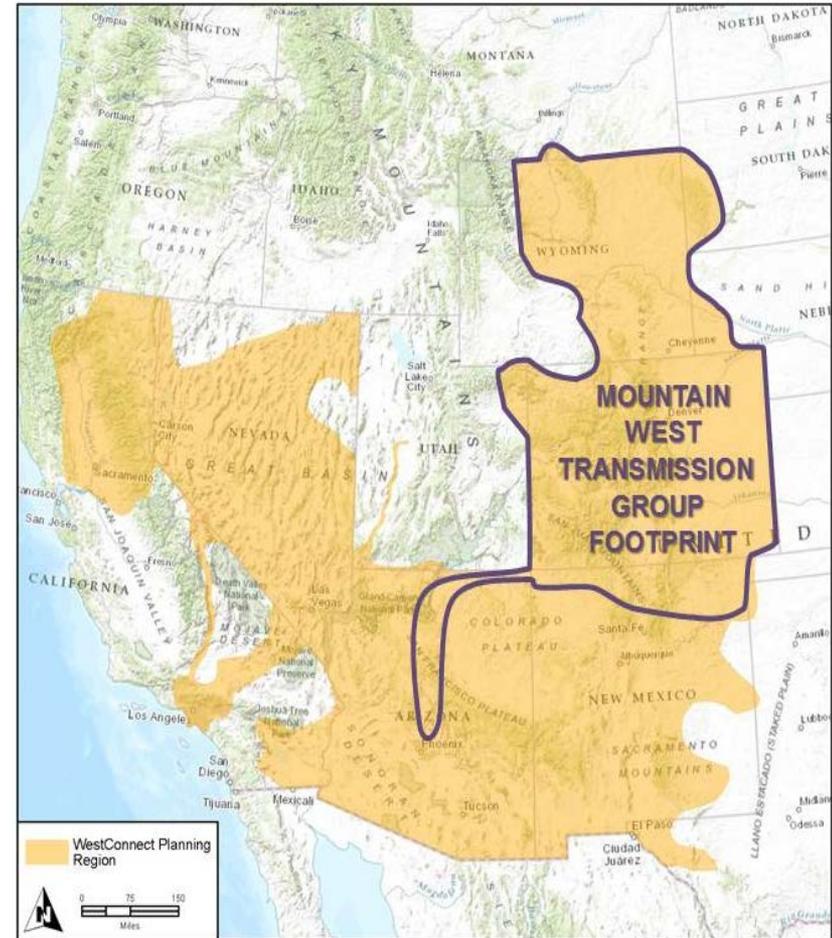
Mountain West Transmission Group

Rodney Bailey



MWTG

- Goal: Create a single multi-company transmission tariff and explore “Day 2” market alternatives
- TSPs include:
 - two IOUs
 - two municipals
 - two G&T Cooperatives
 - two Federal PMA projects
- Members: Sub-set of the WestConnect planning region and are the Colorado Coordinated Planning Group (CCPG) footprint
- Currently includes seven parties with nine transmission tariffs



MWTG Line Miles

Transmission Owner	Miles of Transmission
Basin Electric Power Cooperative Westside	209
Cheyenne Light Fuel & Power	45
Black Hills Colorado Electric Utility	581
City of Colorado Springs Utilities	232
Common Use System (BEPC & BHC)	983
Platte River Power Authority	370
Western CRSP	2,325
Western LAP	2,508
Tri-State Generation and Transmission Association	4,660
Public Service Company of Colorado	3,782
Total	15,694



Mountain West Benefits

- Merge to one transmission provider
 - De-pancaking of wheeling charges
 - Single determination of ATC
- Single Network Tariff
 - Each party is a network customer of Mountain West
 - Transmission Revenue requirements are met
- Single transmission plan
 - provide more efficient solutions and reduce incentives for duplication
- Additional siting opportunities for new resources



Work to Date

- Strong cooperative effort over three years
- Significant success with rate design and cost shift mitigation, despite multiple failed attempts at regional tariffs in the past
- Developed and signed an MOU summarizing work to date
- Developed a Request for Information for RTO response
- Currently conducting a Market Study to evaluate resource side benefits of having a joint tariff as well as a joint tariff with a full Day-2 market
- On-going outreach in various forums
- Targeting start up in 2018/2019



Rate Design

- Network Customers pay the zonal rate in which their load sinks
- 8 Zones (each TSP a zone, except TriState 1/3 in PSCO and 2/3 in LAP)
- Single Regional Through and Out Rate (RTOR) for drive-outs and P2P
- RTOR Revenue Distribution: Working on formula



Cost Shift challenges

- **Cost shift**

- Defined as transmission cost impact to Owner's load
- Regional tariff design changes transmission costs for Owner's load due to:
 - Loss of pancaked rates (both loss of payment, and loss of revenue)
 - Multi-owner zones with weighted average rates, causing additional cost shift
- Group estimated total cost shifts using 2013 data and known and measureable costs through 10/1/2014



Cost Shift Challenges

- **CRSP's specific**

- Rate design requires network service for all internal load
 - Very little network load on the CRSP system; network rate with no P2P results in a very high zonal rate (~130MW recovering ~\$60M)
 - CRSP uses 100% P2P and no network service due to statutory obligations and contractual terms that presume P2P approach
- Rate design requires RTOR for all external load (other than external network)
 - Most CRSP load is external to MWTG, the system was built to export generation beyond the CRSP system
 - CRSP P2P rate is lowest among 9 tariffs, RTOR rate is weighted average of 9 tariffs, so using RTOR would triple the cost to CRSP



Solving the Cost Shift

Two methods used to resolve cost shift:

- CRSP Federal Service Provision (FSP)
 - Allows CRSP to continue using P2P as today:
 - Both P2P and Network part of CRSP Zone rate denominator
 - Revenue from P2P continues to go to CRSP zone
 - CRSP looking to convert as much P2P as possible to Network, but will continue to have significant P2P
- Cost shift mitigation for the first seven year period
 - Allocates RTOR revenues first to entities with increased costs
 - If RTOR revenue is sufficient, 100% mitigation the first 4 years, then decreasing mitigation 25% per year during last 3 years



Future Transmission Expansion and the Federal Service Exemption (FSE)

- Cost Allocation / Rate Design for Future Transmission Expansion:
 - Still working on options
 - Exploring a rate design similar to the SPP schedule 11 which socializes to the footprint: 100% of 300kV and up, and 1/3 of 100kV to 300kV
 - WAPA wants Federal Service Exemption similar to SPP's exemption for UGP



MWTG MOU

- Finalized an MOU that documents agreement so far, and commits parties to move forward.
 - Non-binding
 - A milestone that enables entities to show commitment to each other by signing



Request for Information

- Obtain information and cost estimates from qualified entities
 - Asking entities to provide information on a wide range of services from Transmission Tariff Administrator to Full Market/RTO participation
- RFI is one of multiple sources of information to assist the group in consideration of path forward



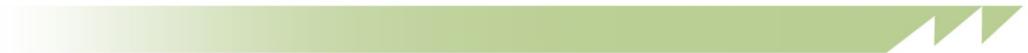
Markets Study

- Finalizing objectives of a two-phase market simulation study
- Executed study agreement and NDA
- Study Current Year 2016 (Phase I)
 - Status quo with nine tariffs
 - Remove pancaked transmission charges to simulate a joint tariff
 - Add full Day-Ahead market structure
- Future Year 2024 (Phase II)
 - Similar scope as Phase I, but still in development



CRSP Rates

Jacob Streeper, Tony Henriquez, Thomas Hackett



Salt Lake City Area / Integrated Projects

Transmission Rate

By

Jacob Streeper



Transmission Rate

Fiscal Year	Historical Investment (\$M)	Projected Investment (\$M)	kW-month
2017	\$27	\$7	\$1.49 Projected, pending final
2016	\$9.5	\$10.5	\$1.28
2015	\$8		\$1.11
2014	\$13		\$1.14
2013	\$9		\$1.20



FY2017 Transmission Rate Major Historical (FY15) Investments

\$9 million – Flagstaff Substation

\$7.6 million – Hayden Substation

\$5.5 million – Glen Canyon

\$1.6 million – Rifle Substation



FY2017 Transmission Rate Major Projected (FY2016) Investments

\$3 million – Archer Substation

\$1.5 million – Canon West Midway & Poncha

\$1 million – Buffalo Pass MW



FY2016 Actual Transmission Rate

	<u>Projected</u>	<u>Actual</u>
ATRR	\$67,408,764	\$67,149,349
kW-month	\$1.275	\$1.270

Difference in ATRR - \$259,415

True-Up - \$0.0049 kW-month



FY2017 Projected Transmission Rate With True-Up

ATRR \$78,740,650

kW-month \$1.498

Apply True-Up - \$0.0049 kW-month

kW-month \$1.493



Questions?

Jacob Streeper

Public Utilities Specialist

801-524-3526

streeper@wapa.gov



Salt Lake City Area / Integrated Projects

Rates

By

Tony Henriquez

Thomas Hackett



SLCA/IP Rate

1. Status of Repayment
2. Current SLCA/IP Firm Power Rate (SLIP-F10)
3. Revenue Requirements Comparison Table
4. SLCA/IP Rate



SLCA/IP Rate

SLCA/IP Status of Repayment (tab 2)

As of September 30, 2015

Project	Investment (\$million)	Investment Repaid		
		Amount (\$million)	Percent	Payoff
CRSP (Power Only)	1,207.370	1,118.289	92.62%	2026
CRSP Irrigation/Aid	1,156.432	110.556	9.56%	2041
Collbran	22.077	17.273	78.24%	2057
Dolores	39.009	9.771	25.05%	2049
Rio Grande	20.102	16.399	81.58%	2034
Seedskadee	9.456	9.456	100.0%	2013



SLCA/IP Firm Power Rate

(Tab 3)

- Current Firm Power Rate (SLIP-F10)
 - Effective Oct. 1, 2015
 - Energy: 12.19 mills/kWh
 - Capacity: \$5.18 kW/month
 - Composite Rate: 29.42 mills/kWh
- Expires September 30, 2020
- Cost Recovery Charge – (Tab 18)
 - 0.00 mills/kWh



SLCA/IP Energy Generated

Percentages Based on FY 2015 Data

% Energy Generated

CRSP

96.70

Glen Canyon

73.41

Aspinall

13.70

Flaming Gorge

9.58

Participating / Integrated Projects

Dolores

0.40

Seedskadee

1.44

Collbran

0.75

Rio Grande

0.71

SLCA/IP 100.00



History of SLIP Rates

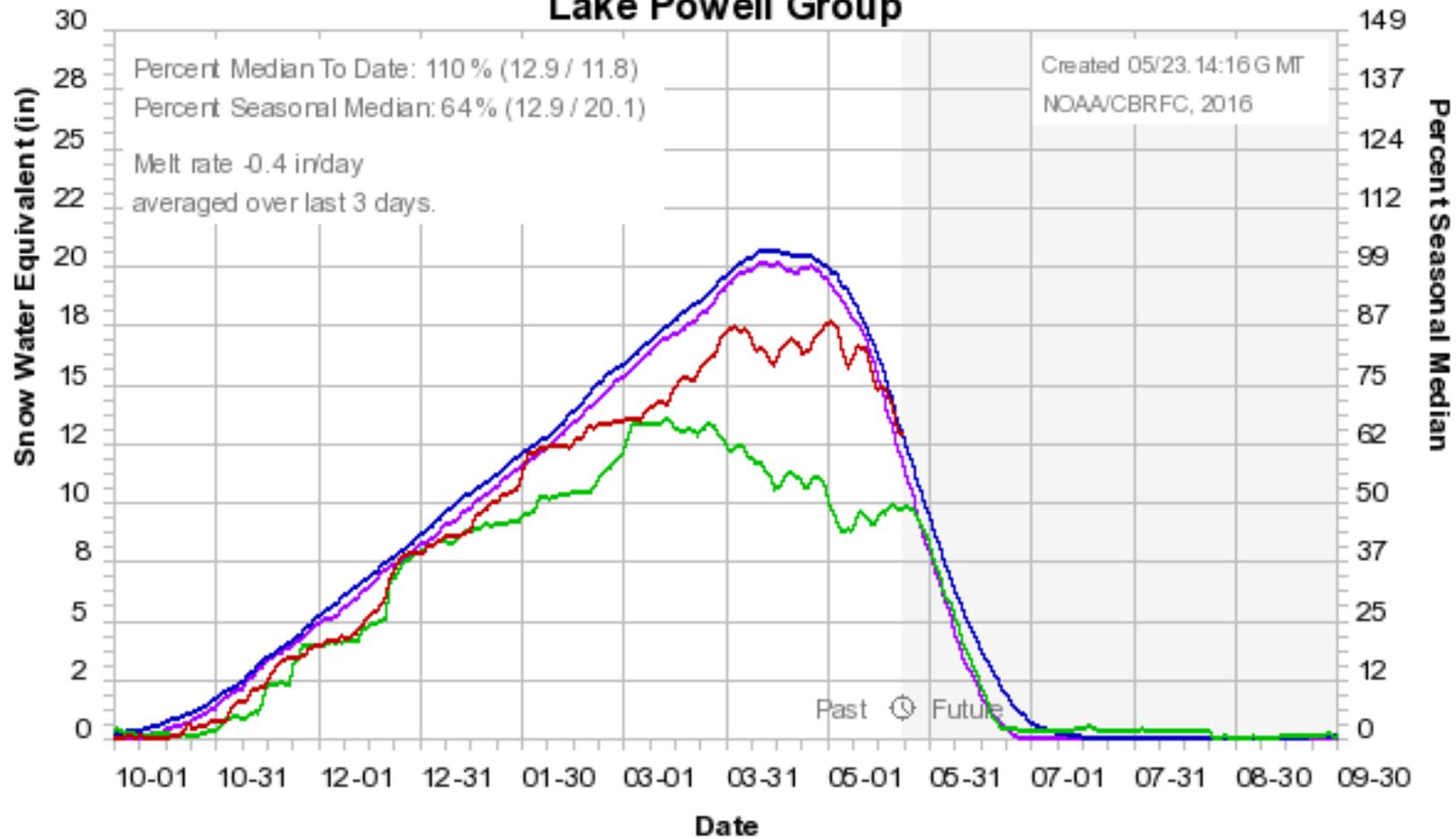
Effective	Capacity	Energy	Composite
<u>Date (CY)</u>	<u>\$/kW</u>	<u>mills/kWh</u>	<u>mills/kWh</u>
1993	3.54	8.40	18.70
1995	3.83	8.90	20.17
1998	3.44	8.10	17.57
2002	4.04	9.50	20.72
2005	4.43	10.43	25.28
Step 1 { 2008	4.70	11.06	26.80
Step 2 { 2009	5.18	12.19	29.62
2015	5.18	12.19	29.42



Current Hydrology

(Tab 9)

Colorado Basin River Forecast Center Lake Powell Group





Annual Revenue Requirements

Comparison Table (Tab 6)

		WAPA 169 PRS	FY2016	WAPA 169 vs FY2016 Preliminary Comparison	
Item	Unit	2017 Workplan	2018 Workplan	Amount	Percent
Rate Setting Period:					
Beginning year	FY	2016	2017		
Pinchpoint year	FY	2025	2025		
Number of rate setting years	Years	10	9		
Annual Revenue Requirements:					
<u>Expenses</u>					
Operation and Maintenance:					
WAPA	1,000	\$52,630	\$52,644	\$14	0%
Reclamation	1,000	\$34,535	\$35,546	\$1,011	3%
Total O&M	1,000	\$87,165	\$88,190	\$1,025	1%
Purchased Power 1/	1,000	\$10,280	\$8,033	(\$2,247)	-22%
Transmission	1,000	\$10,421	\$10,293	(\$128)	-1%
Integrated Projects requirements	1,000	\$8,610	\$8,775	\$165	2%
Interest	1,000	\$4,706	\$2,102	(\$2,604)	-55%
Other 2/	1,000	\$14,587	\$14,329	(\$258)	-2%
Total Expenses	1,000	\$135,769	\$131,722	(\$4,047)	-3%
<u>Principal payments</u>					
Deficits	1,000	\$0	\$0	\$0	0%
Replacements	1,000	\$30,037	\$31,315	\$1,278	4%
Original Project and Additions	1,000	\$3,937	\$3,964	\$27	1%
Irrigation 3/	1,000	\$14,130	\$10,792	(\$3,338)	-24%
Total principal payments	1,000	\$48,104	\$46,071	(\$2,033)	-4%
Total Annual Revenue Requirements	1,000	\$183,873	\$177,793	(\$6,080)	-3%
(Less Offsetting Annual Revenue:)					
Transmission (firm and non-firm)	1,000	\$19,640	\$22,062	\$2,422	12%
Merchant Function 4/	1,000	\$9,918	\$8,138	(\$1,780)	-18%
Other 5/	1,000	\$5,118	\$5,077	(\$41)	-1%
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,277	\$601	2%
Net Annual Revenue Requirements	1,000	\$149,197	\$142,516	(\$6,681)	-4%
Energy Sales 6/	MWH	5,071,804	5,082,388	10,584	0.2%
Capacity Sales	kW	84 1,407,920	1,408,156	236	0%
Composite Rate	mills/kWh	29.43	28.05	-1.38	-4.7%



Expenses

May 2016 Update

		WAPA 169 PRS	FY2016	Change	
		2017 Workplan	2018 Workplan	Amount	Percent
	Unit				
Annual Revenue Requirements:					
<u>Expenses</u>					
Operation and Maintenance:					
WAPA	1,000	\$52,630	\$52,644	\$14	0%
Reclamation	1,000	\$34,535	\$35,546	\$1,011	3%
Total O&M (Tab 7)	1,000	\$87,165	\$88,190	\$1,025	1%
Purchased Power (Tab 8)	1,000	\$10,280	\$8,033	(\$2,247)	-22%
Transmission	1,000	\$10,421	\$10,293	(\$128)	-1%
Integrated Projects requirements (Tab 11)	1,000	\$8,610	\$8,775	\$165	2%
Interest (See ES)	1,000	\$4,706	\$2,102	(\$2,604)	-55%
Other (Tab 12 and ES)	1,000	\$14,587	\$14,329	(\$258)	-2%
Total Expenses	1,000	\$135,769	\$131,722	(\$4,047)	-3%



Repayment

May 2016 Update

		WAPA 169 PRS	FY2016	Change	
		2017 Workplan	2018 Workplan	Amount	Percent
	Unit				
<u>Principal payments</u>					
Deficits	1,000	\$0	\$0	<u>\$0</u>	<u>0%</u>
Replacements	1,000	\$30,037	\$31,315	\$1,278	4%
Original Project and Additions	1,000	\$3,937	\$3,964	\$27	1%
Irrigation	1,000	<u>\$14,130</u>	<u>\$10,792</u>	<u>(\$3,338)</u>	<u>-24%</u>
<i>Total principal payments</i> (ES)	1,000	\$48,104	\$46,071	(\$2,033)	-4%



Offsetting Revenues

May 2016 Update

		WAPA 169 PRS	FY2016	Change	
		2017 Workplan	2018 Workplan	Amount	Percent
	Unit				
<i>(Less Offsetting Annual Revenue:)</i>					
Transmission (firm and non-firm) (Tab 14)	1,000	\$19,640	\$22,062	\$2,422	12%
Merchant Function (Tab 15)	1,000	\$9,918	\$8,138	(\$1,780)	-18%
Other (Tab 15)	1,000	<u>\$5,118</u>	<u>\$5,077</u>	<u>(\$41)</u>	<u>-1%</u>
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,277	\$601	2%



Revenue Requirements

May 2016 Update

		WAPA 169 PRS	FY2016	WAPA 169 vs FY2016 Preliminary Comparison	
Item	Unit	2017 Workplan	2018 Workplan	Amount	Percent
Total Expenses	1,000	\$135,769	\$131,722	(\$4,047)	-3%
Total principal payments	1,000	\$48,104	\$46,071	(\$2,033)	-4%
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,277	\$601	2%
Net Annual Revenue Requirements	1,000	\$149,197	\$142,516	(\$6,681)	-4%
Energy Sales (Tab 16)	MWH	5,071,804	5,082,388	10,584	0.2%
Capacity Sales	kW	1,407,920	1,408,156	236	0%
Composite Rate	mills/kWh	29.43	28.05	-1.38	-4.7%

Next Steps

- Evaluate if there is a future need for Rate Action
- LTEMP – Record of Decision (ROD)
- Purchase Power projections, future discussion
- 2025 Marketing Plan Public Comment Period ends May 31st



CRSP MC Rates Team

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<https://www.wapa.gov/regions/CRSP/rates/Pages/rates.aspx>



Discussion & Comments



SLCA/IP Repayment Milestones

as of September 30, 2015

units: \$1,000

Project	Replacements		Original Projects and Additions		Main Stem Irrigation Assistance		Participating Projects Irrigation Assistance		Total Unpaid Balance
	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	Year Paid Off	Currently Unpaid	
Collbran	2002	\$ -	2064	\$ 4,803	2010	\$ -	N/A	N/A	\$ 4,803
CRSP	2020	\$ 12,583	2023	\$ 76,498	2023	\$ 37,980	2041	\$ 1,007,896	\$ 1,134,957
Dolores	2047	\$ 9	2045	\$ 29,229	N/A	N/A	N/A	N/A	\$ 29,238
Rio Grande	2012	\$ -	2030	\$ 3,702	1997	\$ -	N/A	N/A	\$ 3,702
Seedskadee	2015	\$ -	2011	\$ -	N/A	N/A	N/A	N/A	\$ -

FINAL STATUS OF REPAYMENT

COLLBRAN PROJECT

(Dollars in thousands)

	Cumulative 2014 ¹	Adjustment	Annual 2015 ²	Cumulative 2015
Revenue:				
Gross Operating Revenue	64,940.228	0.000	1,911.997	66,852.225
Income transfers (net)	35.916	0.000	0.000	35.916
Total Operating Revenue (A)	64,976.144	0.000	1,911.997	66,888.141
Expenses:				
O & M and other	31,245.518	0.000	1,074.102	32,319.620
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	12,077.929	0.000	158.205	12,236.134
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	12,077.929	0.000	158.205	12,236.134
Total Expense (B)	43,323.447	0.000	1,232.307	44,555.754
(Deficit)/Surplus revenue (C)	0.001	0.000	0.000	0.001
Investment:				
Federally financed power	22,026.727	0.000	50.044	22,076.771
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,059.020	0.000	0.000	5,059.020
Total Investment (D)	27,085.747	0.000	50.044	27,135.791
Investment repaid:				
Federally financed power	16,593.677	0.000	679.690	17,273.367
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,059.020	0.000	0.000	5,059.020
Total Investment repaid (E)	21,652.697	0.000	679.690	22,332.387
Investment unpaid:				
Federally financed power	5,433.050	0.000	(629.646)	4,803.404
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	5,433.050	0.000	(629.646)	4,803.404
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	75.33%			78.24%
Non-Federal	N/A			N/A
Nonpower	0.00%			100.00%

¹ This column ties to the cumulative FY 2014 numbers on page 122 of the FY 2014 Annual Report Statistical Appendix.

² Based on FY 2015 audited financial statements.

FINAL STATUS OF REPAYMENT
COLORADO RIVER STORAGE PROJECT
(Dollars in thousands)

	Cumulative 2014 ¹	Adjustment	Annual 2015 ²	Cumulative 2015
Revenue:				
Gross Operating Revenue	5,504,715.394	0.000	209,524.011	5,714,239.405
Income transfers (net)	(23,054.260)	0.000	(15,024.285)	(38,078.545)
Total Operating Revenue (A)	5,481,661.134	0.000	194,499.726	5,676,160.860
Expenses:				
O & M and other	1,848,632.062	4,311.801 ³	80,354.186	1,933,298.049
Purchase power and Wheeling	1,701,430.554	797.000 ⁴	46,138.833	1,748,366.387
Interest				
Federally financed	757,540.610	0.000	2,290.104	759,830.714
Non-Federally financed	5,238.797	0.000	582.251	5,821.048
Total Interest	762,779.407	0.000	2,872.355	765,651.762
Total Expense (B)	4,312,842.023	5,108.801	129,365.374	4,447,316.198
(Deficit)/Surplus revenue (C)	(0.001)	(5,108.801)	5,108.801	(0.001)
Investment:				
Federally financed power	1,187,174.555	(714.000) ⁵	20,909.339	1,207,369.894
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	1,185,516.520	0.000	(29,084.610)	1,156,431.910
Total Investment (D)	2,372,691.075	(714.000)	(8,175.271)	2,363,801.804
Investment repaid: ⁴				
Federally financed power	1,118,288.554	0.000	0.000	1,118,288.554
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	50,530.558	0.000	60,025.551	110,556.109
Total Investment repaid (E)	1,168,819.112	0.000	60,025.551	1,228,844.663
Investment unpaid:				
Federally financed power	68,886.001	(714.000)	20,909.340	89,081.340
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	1,134,985.962	0.000	(89,110.161)	1,045,875.801
Total Investment unpaid (F)	1,203,871.963	(714.000)	(68,200.821)	1,134,957.141
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	94.20%			92.62%
Non-Federal	N/A			N/A
Nonpower	4.26%			9.56%

¹ This column ties to the cumulative FY 2014 numbers on page 122 of the FY 2014 Annual Report Statistical Appendix.

² Based on the FY 2015 audited financial statements.

³ Gains & Losses for 2015 (CRSP Losses on Disposition of Assets) /Unexpended MOA Revenue

⁴ Reciprocal entry for PY Unbooked Environmental Studies

⁵

FINAL STATUS OF REPAYMENT

DOLORES PROJECT

(Dollars in thousands)

	Cumulative 2014 ¹	Adjustment	Annual 2015 ²	Cumulative 2015
Revenue:				
Gross Operating Revenue	58,455.609	0.000	2,805.398	61,261.007
Income transfers (net)	1,225.793	0.000	5,255.803	6,481.596
Total Operating Revenue (A)	59,681.402	0.000	8,061.201	67,742.603
Expenses:				
O & M and other	8,282.924	3,212.224 ³	1,777.191	13,272.339
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	42,900.410	0.000	1,798.702	44,699.112
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	42,900.410	0.000	1,798.702	44,699.112
Total Expense (B)	51,183.334	3,212.224	3,575.893	57,971.451
(Deficit)/Surplus revenue (C)	(0.001)	(3,212.224)	3,212.225	0.000
Investment:				
Federally financed power	38,345.250	0.000	663.561 ⁴	39,008.811
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment (D)	38,345.250	0.000	663.561	39,008.811
Investment repaid:				
Federally financed power	8,498.069	0.000	1,273.083	9,771.152
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment repaid (E)	8,498.069	0.000	1,273.083	9,771.152
Investment unpaid:				
Federally financed power	29,847.181	0.000	(609.522)	29,237.659
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	29,847.181	0.000	(609.522)	29,237.659
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	22.16%			25.05%
Non-Federal	N/A			N/A
Nonpower	N/A			N/A

¹ This column ties to the cumulative FY 2014 numbers on page 123 of the FY 2014 Annual Report Statistical Appendix.

² Based on the FY 2015 audited financial statements.

³ MOA Adjustment

⁴ BOR allocation adjustment for \$663,561, added to original investment

FINAL STATUS OF REPAYMENT

Rio Grande Project (Dollars in thousands)

	Cumulative 2014 ¹	Adjustment	Annual 2015 ²	Cumulative 2015
Revenue:				
Gross Operating Revenue	108,593.946	0.000	2,753.699	111,347.645
Income transfers (net)	0.026	0.000	0.000	0.026
Total Operating Revenue (A)	108,593.972	0.000	2,753.699	111,347.671
Expenses:				
O & M and other	66,822.076	0.000	2,901.600	69,723.676
Purchase power and other	4,774.405	0.000	0.000	4,774.405
Interest				
Federally financed	14,796.400	0.000	108.678	14,905.078
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	14,796.400	0.000	108.678	14,905.078
Total Expense (B)	86,392.881	0.000	3,010.278	89,403.159
(Deficit)/Surplus revenue (C)	0.001	0.000	(256.579)	(256.578)
Investment:				
Federally financed power	19,980.178	0.000	121.362	20,101.540
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,801.911	0.000	0.000	5,801.911
Total Investment (D)	25,782.089	0.000	121.362	25,903.451
Investment repaid:				
Federally financed power	16,399.179	0.000	0.000	16,399.179
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	5,801.911	0.000	0.000	5,801.911
Total Investment repaid (E)	22,201.090	0.000	0.000	22,201.090
Investment unpaid:				
Federally financed power	3,580.999	0.000	121.362	3,702.361
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	3,580.999	0.000	121.362	3,702.361
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	82.08%			81.58%
Non-Federal	N/A			N/A
Nonpower	100.00%			100.00%

¹ This column ties to the cumulative FY 2014 numbers on page 123 of the FY 2014 Annual Report Statistical Appendix.

² Based on the FY 2015 audited financial statements.

FINAL STATUS OF REPAYMENT

SEEDSKADEE PROJECT

(Dollars in thousands)

	Cumulative 2014 ¹	Adjustment	Annual 2015 ²	Cumulative 2015
Revenue:				
Gross Operating Revenue	34,127.464	0.000	(399.080)	33,728.384
Income transfers (net)	600.632	0.000	1,783.675	2,384.307
Total Operating Revenue (A)	<u>34,728.096</u>	<u>0.000</u>	<u>1,384.595</u>	<u>36,112.691</u>
Expenses:				
O & M and other	17,401.646	(11.374) ³	932.057	18,322.329
Purchase power and other	0.000	0.000	0.000	0.000
Interest				
Federally financed	6,472.754	(10.194) ⁴	(1.564)	6,460.996
Non-Federally financed	0.000	0.000	0.000	0.000
Total Interest	<u>6,472.754</u>	<u>(10.194)</u>	<u>(1.564)</u>	<u>6,460.996</u>
Total Expense (B)	<u>23,874.400</u>	<u>(21.568)</u>	<u>930.493</u>	<u>24,783.325</u>
(Deficit)/Surplus revenue (C)	1,766.920	21.568	85.113	1,873.601 ³
Investment:				
Federally financed power	9,431.916	0.000	23.849	9,455.765
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment (D)	<u>9,431.916</u>	<u>0.000</u>	<u>23.849</u>	<u>9,455.765</u>
Investment repaid:				
Federally financed power	9,086.776	0.000	368.989	9,455.765
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment repaid (E)	<u>9,086.776</u>	<u>0.000</u>	<u>368.989</u>	<u>9,455.765</u>
Investment unpaid:				
Federally financed power	345.140	0.000	(345.140)	(0.000)
Non-Federally financed power	0.000	0.000	0.000	0.000
Nonpower	0.000	0.000	0.000	0.000
Total Investment unpaid (F)	<u>345.140</u>	<u>0.000</u>	<u>(345.140)</u>	<u>(0.000)</u>
Fund Balances:				
Colorado River Development (G)	0.000	0.000	0.000	0.000
Working capital (H)	0.000	0.000	0.000	0.000
Percent of investment repaid to date:				
Federal	96.34%			100.00%
Non-Federal	N/A			N/A
Nonpower	N/A			N/A

¹ This column ties to the cumulative FY 2014 numbers on page 124 of the FY 2014 Annual Report Statistical Appendix.

² Based on the FY 2015 audited financial statements.

³ Gains / Losses

⁴ Interest that should have been booked in F15. Reciprocating entry will be entered in FY16

**Salt Lake City Area Integrated Projects Firm Power, Transmission & Ancillary Services
FY2016 Rate/Charges Summary**

	Provided By	Rate/Charges	Rate/Charges Effective Through (or until superceded)
Firm Power Service			
Firm Sales (SLIP-F10)	SLIP	29.42 mills/kWh	9/30/2020
Transmission Service			
Firm Point-to-Point Transmission (SP-PTP-8)	CRSP	\$1.28/kWmonth	9/30/2020
Network Integration Transmission (SP-NW4)	CRSP	\$1.28/kWmonth	9/30/2020
Non-Firm Point-to-Point Transmission (SP-NFT7)	CRSP	\$1.28/kWmonth	9/30/2020
Unreserved Use Charge (SP-UU1)	CRSP	See Rate Schedule	9/30/2020
Ancillary Services			
Scheduling, System Control, & Dispatch (SP-SD4)	CRSP	See Rate Schedule	9/30/2020
Reactive Supply & Voltage Control (SP-RS4)	CRSP	See Rate Schedule	9/30/2020
Energy Imbalance (SP-EI4)	CRSP	See Rate Schedule	9/30/2020
Regulation & Frequency Response (SP-FR4)	CRSP	See Rate Schedule	9/30/2020
Spinning & Supplemental Reserves (SP-SSR4)	CRSP	See Rate Schedule	9/30/2020

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
SALT LAKE CITY AREA INTEGRATED PROJECTS**

**SCHEDULE OF RATES FOR FIRM POWER SERVICE
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SLIP-F10 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Available:

In the area served by the Salt Lake City Area Integrated Projects.

Applicable:

To the wholesale power customer for firm power service supplied through one meter at one point of delivery or as otherwise established by contract.

Character:

Alternating current, 60 hertz, three-phase, delivered and metered at the voltages and points established by contract.

Monthly Rate:

DEMAND CHARGE: \$5.18 per kilowatt of billing demand.

ENERGY CHARGE: 12.19 mills per kilowatthour of use.

COST RECOVERY CHARGE:

To adequately recover and maintain a sufficient balance in the Basin Fund, Western uses a cost recovery mechanism, called a Cost Recovery Charge (CRC). The CRC is a charge on all SHP energy.

This charge will be recalculated before May 1 of each year, and Western will provide notification to the customers. The charge, if needed, will be placed into effect on the first day of the first full-billing period beginning on or after October 1, 2015, through September 30, 2020. If a Shortage Criteria is necessary, the CRC will be re-calculated at that time. (See Shortage Criteria Trigger explanation below.) The CRC will be calculated as follows:

**WESTERN HAS THE DISCRETION TO IMPLEMENT A CRC BASED ON
THE TIERS BELOW.**

TABLE: CRC Tiers

Tier	Criteria, If the BFBB is:	Review
i	Greater than \$150 million, with an expected decrease to below \$75 million	Annually
ii	Less than \$150 million but greater than \$120 million, with an expected 50-percent decrease in the next FY	
iii	Less than \$120 million but greater than \$90 million, with an expected 40-percent decrease in the next FY	
iv	Less than \$90 million but greater than \$60 million, with an expected 25-percent decrease in the next FY	Semi-Annual (May / November)
v	Less than \$60 million but greater than \$40 million with an expected decrease to below \$40 million in the next FY	Monthly

TABLE: SAMPLE CRC CALCULATION

		Description	Example	Formula
STEP ONE	Determine the Net Balance available in the Basin Fund.			
	BFBB	Basin Fund Beginning Balance (\$)	\$ 85,860,265	Financial forecast
	BFTB	Basin Fund Target Balance (\$)	\$ 64,395,199	BFBB – (Tier % *BFBB), or BFTB for Tier i and Tier v ¹
	PAR	Projected Annual Revenue (\$) w/o CRC	\$ 232,780,000	Financial forecast
	PAE	Projected Annual Expenses (\$)	\$ 226,649,066	Financial forecast
	NR	Net Revenue (\$)	\$ 6,130,934	PAR - PAE
	NB	Net Balance (\$)	\$ 91,991,199	BFBB + NR
STEP TWO	Determine the Forecasted Energy Purchase Expenses.			
	EA	SHP Energy Allocation (GWh)	4,952	Customer contracts
	HE	Forecasted Hydro Energy (GWh)	4,924	Hydrologic & generation forecast
	FE	Forecasted Energy Purchase (GWh)	504	EA – HE or anticipated
	FFC	Forecasted Average Energy Price per MWh (\$)	\$ 34.23	From commercially available price indices
	FX	Forecasted Energy Purchase Expense (\$)	\$ 17,262,512	FE * FFC *1000
STEP THREE	Determine the amount of Funds Available for firming energy purchases, and then determine additional revenue to be recovered. The following two formulas will be used to determine FA; the lesser of the two will be used.			
	FA1	Basin Fund Balance Factor (\$)	\$ 17,262,512	If (NB>BFBB,FX,FX -(BFTB - NB))
	FA2	Revenue Factor (\$)	\$ 17,262,512	If (NR>-(BFBB-BFTB), FX, FX+NR +(BFBB-BFTB))
	FA	Funds Available (\$)	\$ 17,262,512	Lesser of FA1 or FA2 (not less than \$0)
	FARR	Additional Revenue to be Recovered (\$)	\$ 0	FX - FA
STEP FOUR	Once the FA for purchases have been determined, the CRC can be calculated, and the WL can be determined.			
	WL	Waiver Level (GWh)	5428	If (EA<HE,EA,HE+(FE*(FA/FX))), but not less than HE
	WLP	Waiver Level Percentage of Full SHP	110%	WL/EA*100
	CRCE	CRC Energy (GWh)	0	EA - WL
	CRCEP	CRC Energy Percentage of Full SHP	0%	CRCE/EA*100
	CRC	Cost Recovery Charge (mills/kWh)	0	FARR/(EA*1,000)

Notes: 1- Use CRC Tiers Table to calculate applicable value

Narrative CRC Example

STEP ONE: Determine the net balance available in the Basin Fund.

BFBB – Western will forecast the Basin Fund Beginning Balance for the next FY.

$$\mathbf{BFBB = \$85,860,265}$$

BFTB – The Basin Fund Target Balance is based on the applicable tiered percentage, or minimum value, of the Basin Fund Beginning Balance derived from the **CRC Tiers** table with a minimum BFTB set at \$40 million.

$$\begin{aligned}\mathbf{BFTB} &= \text{BFBB less 25 percent, see } \mathbf{Tier\ iv} \text{ (BFBB } < \mathbf{90\ million, BFBB } > \mathbf{60\ million)} \\ &= \$85,860,265 - \$21,464,066 \\ &= \mathbf{\$64,395,199}\end{aligned}$$

PAR – Projected Annual Revenue is Western’s estimate of revenue for the next FY.

$$\mathbf{PAR= \$232,780,000}$$

PAE – Projected Annual Expenses is Western’s estimate of expenses for the next FY. The PAE includes all expenses plus non-reimbursable expenses, which are capped at \$27 million per year plus an inflation factor. **This limitation is for CRC formula calculation purposes only, and is not a cap on actual non-reimbursable expenses.**

$$\mathbf{PAE = \$226,649,066}$$

NR – Net Revenue equals revenues minus expenses.

$$\begin{aligned}\mathbf{NR} &= \text{PAR-PAE} \\ &= \$232,780,000 - \$226,649,066 \\ &= \mathbf{\$6,130,934}\end{aligned}$$

NB – Net Balance is the Basin Fund Beginning Balance plus net revenue.

$$\begin{aligned}\mathbf{NB} &= \mathbf{BFBB+NR} \\ &= \$85,860,265 + \$6,130,934 \\ &= \mathbf{\$91,991,199}\end{aligned}$$

STEP TWO: Determine the forecasted energy purchases expenses.

EA – The Sustainable Hydro Power Energy Allocation (from Customer contracts). This does not include Project Use customers.

$$\mathbf{EA = 4,952 (GWh)}$$

HE – Western’s forecast of Hydro Energy available during the next FY developed from Reclamation’s April, 24-month study.

$$\mathbf{HE = 4,924 (GWh)}$$

FE – Forecasted Energy purchases are the difference between the Sustainable Hydro Power allocation and the forecasted hydro energy available for the next FY or the anticipated firming purchases for the next year.

$$\begin{aligned}\mathbf{FE} &= \mathbf{EA-HE \text{ or anticipated purchases}} \\ &= \mathbf{504.33 (GWh, anticipated)}\end{aligned}$$

FFC - The forecasted energy price for the next FY per MWh.

$$\mathbf{FFC = \$34.23 \text{ per MWh}}$$

FX – Forecasted energy purchase power expenses based on the current year’s, April, 24-month study, representing an estimate of the total costs of firming purchases for the coming FY.

$$\begin{aligned}
\mathbf{FX} &= \mathbf{FE*FFC*1000} \\
&= 504.33 * \$34.23*1000 \\
&= \mathbf{\$17,263,215.90}
\end{aligned}$$

STEP THREE: Determine the amount of Funds Available (FA) to expend on firming energy purchases and then determine additional revenue to be recovered (FARR). The following two formulas will be used to determine FA; the lesser of the two will be used. Funds available shall not be less than zero.

A. Basin Fund Balance Factor (FA1)

If the Net Balance is greater than the Basin Fund Target Balance, use the value for forecasted energy purchase power expenses (FX). If the net balance is less than the Basin Fund Target Balance, reduce the value of the Forecasted Energy Purchase Power Expenses by the difference between the Basin Fund Target Balance and the Net Balance.

$$\begin{aligned}
\mathbf{FA1} &= \text{If } (\mathbf{NB} > \mathbf{BFTB}, \mathbf{FX}, \mathbf{FX} - (\mathbf{BFTB} - \mathbf{NB})) \\
&= \mathbf{\$91,991,199} \text{ (NB) is greater than } \mathbf{\$64,395,199} \text{ (BFTB) then:} \\
&= \mathbf{\$17,263,215.90} \text{ (FX)}
\end{aligned}$$

If the Net Balance is greater than the Basin Fund Target Balance, then **FA1=FX**.

If the Net Balance is less than the Basin Fund Target Balance, then **FA1=FX-(BFTB-NB)**.

B. Basin Fund Revenue Factor (FA2)

The second factor ensures that Western collects sufficient funds to meet the Basin Fund Target Balance so long as the amount needed does not exceed the forecasted purchase expense (FX):

In the situation when there is no projected revenue:

$$\mathbf{FA2} = \text{If } (NR > -(BFBB-BFTB)), \mathbf{FX}, \mathbf{FX+NR+(BFBB-BFTB)}$$

$$= \mathbf{\$6,130,934(NR) \text{ is greater than } (\$21,464,066) \text{ then:}}$$

$$= \mathbf{\$17,263,215.90 (FX)}$$

If the Net Revenue (loss) value does not result in a loss that exceeds the allowable decrease value of the Basin Fund Beginning Balance $(-(BFBB-BFTB))$, then **FA2=FX**.

If the Net Revenue (loss) results in a loss that exceeds the allowable decrease value of the Basin Fund Beginning Balance $(-(BFBB-BFTB))$, then **FX + NR + (BFBB-BFTB)**.

FA – Determine the funds available for purchasing firming energy by using the lesser of FA1 and FA2.

FA1 and FA2 are equal, so:

$$\mathbf{FA} = \mathbf{\$17,263,215.90 (FX)}$$

FARR – Calculate the additional revenue to be recovered by subtracting the Funds Available from the forecasted energy purchase power expenses.

$$\mathbf{FARR} = \mathbf{FX-FA}$$

$$= \mathbf{\$17,263,215.90 (FX) - \$17,263,215.90 (FA)}$$

$$= \mathbf{\$ 0.00}$$

STEP FOUR: Once the funds available for purchases have been determined, the CRC can be calculated and the Waiver Level (WL) can be determined.

A. Cost Recovery Charge: The CRC will be a charge to recover the additional revenue required as calculated in Step 3. The CRC will apply to all customers who choose not to request a

waiver of the CRC, as discussed below. The CRC equals the additional revenue to be recovered divided by the total energy allocation to all customers for the FY.

$$\text{CRC} = \text{FARR} / (\text{EA} * 1,000)$$

$$= \$ 0.00 \text{ charge}$$

B. Waiver Level (WL): Western will establish an energy WL that provides Western the ability to reduce purchase power expenses by scheduling less energy than what is contractually required. Therefore, for those customers who voluntarily schedule no more energy than their proportionate share of the WL, Western will waive the CRC for that year.

After the Funds Available has been determined, the WL will be set at the sum of the energy that can be provided through hydro generation and purchased with Funds Available. The WL will not be less than the forecasted Hydro Energy.

$$\text{WL} = \text{If } (\text{EA} < \text{HE}, \text{EA}, \text{HE} + (\text{FE} * (\text{FA} / \text{FX})))$$

$$= 4,952 \text{ (EA) is not less than } 4,924 \text{ (HE) then:}$$

$$= 4,924 \text{ (HE)} + (504.33 \text{ (FE)} * (\$17,263,215.90 \text{ (FA)} / \$17,263,215.90 \text{ (FX)}))$$

$$= \mathbf{5,428 \text{ (GWh) is the Waiver Level}}$$

If SHP Energy Allocation is less than forecasted Hydro Energy available, then **WL=EA**

If SHP Energy Allocation is greater than the forecasted Hydro Energy available, then

$$\mathbf{WL=HE+(FE *(FA/FX))}$$

PRIOR YEAR ADJUSTMENT:

The CRC PYA for subsequent years will be determined by comparing the prior year’s estimated firming-energy cost to the prior year’s actual firming-energy cost for the energy provided above the WL. The PYA will result in an increase or decrease to a customer’s firm energy costs over the course of the following year. The table below is the calculation of a PYA.

PYA CALCULATION			
		Description	Formula
STEP ONE	Determine actual expenses and purchases for previous year’s firming. This data will be obtained from Western’s financial statements at the end of the FY.		
	PFX	Prior Year Actual Firming Expenses (\$)	Financial Statements
	PFE	Prior Year Actual Firming Energy (GWh)	Financial Statements
STEP TWO	Determine the actual firming cost for the CRC portion.		
	EAC	Sum of the energy allocations of customers subject to the PYA (GWh)	
	FFC	Forecasted Firming Energy Cost – (\$/MWh)	From CRC Calculation
	AFC	Actual Firming Energy Cost – (\$/MWh)	PFX/PFE
	CRCEP	CRC Energy Percentage	From CRC Calculation
	CRCE	Purchased Energy for the CRC (GWh)	EAC*CRCEP
STEP THREE	Determine Revenue Adjustment (RA) and PYA.		
	RA	Revenue Adjustment (\$)	(AFC-FFC)*CRCE*1,000
	PYA	Prior Year Adjustment (mills/kWh)	(RA/EAC)/1,000

Narrative PYA Calculation

STEP ONE: Determine actual expenses and purchases for previous year’s firming. This data will be obtained from Western’s financial statements at end of FY.

PFX - Prior year actual firming expense

PFE - Prior year actual firming energy

STEP TWO: Determine the actual firming cost for the CRC portion.

EAC - Sum of the energy allocations of customers subject to the PYA

CRCE - The amount of CRC Energy needed

AFC - The Actual Firming Energy Cost are the PFX divided by the PFE

$$AFC = (PFX/PFE)/1,000$$

STEP THREE: Determine Revenue Adjustment (RA) and Prior Year Adjustment (PYA).

RA - The Revenue Adjustment is AFC less FFC times CRCE

$$RA = (AFC-FFC)*CRCE*1,000$$

PYA = The PYA is the RA divided by the EAC for the CRC customers only.

$$PYA = (RA/EAC)/1,000$$

The customer's PYA will be based on its prior year's energy multiplied by the resulting mills/kWh to determine the dollar amount that will be assessed. The customers will be charged or credited for this dollar amount equally in the remaining months of the next year's billing cycle. Western will attempt to complete this calculation by December of each year. Therefore, if the PYA is calculated in December, the charge/credit will be spread over the remaining 9 months of the FY (January through September).

Shortage Criteria Trigger:

In the event that Reclamation's 24-month study projects that Glen Canyon Dam water releases will drop below 8.23 MAF in a water year (October through September), Western will recalculate the CRC to include those lower estimates of hydropower generation and the estimated costs for the additional purchase power necessary. Western, as in the yearly projection for the CRC, will give the customers a 45-day notice to request a waiver of the CRC, if they do not want to have the CRC charge added to their energy bill. This recalculation will remain in effect for the remainder of the current FY.

In the event that hydropower generation returns to an 8.23 MAF or higher during the trigger implementation, a new CRC will be calculated for the next month, and the customers will be notified.

CRC Schedule for customers

Consistent with the procedures at 10 CFR 903, Western will provide its customers with information concerning the anticipated CRC for the upcoming FY in May. The established CRC will be in effect for the entire FY. The table below displays the time frame for determining the amount of purchases needed, developing customers’ load schedules, and making purchases.

CRC Schedule

Task	Respective Dates Under Table CRC Tiers¹		
	i, ii, and iii	iv²	v³
24-Month Study (Forecast to Model Projections)	April 1	April 1 October 1	Monthly Study
CRC Notice to Customers	May 1	May 1 November 1	Monthly
Waiver Request Submitted by Customers	June 15	Within 45 days	Within 30 days
CRC Effective	October 1	August 1 February 1	Updated Monthly

Notes:

¹ This schedule does not apply if the CRC is triggered by the Glen Canyon Dam annual releases dropping below 8.23 MAF.

² If it is determined during the additional reviews, under tier **iv**, that a CRC is necessary, customers will be notified that a CRC will be implemented in 90 days. Western will provide its customers with information concerning the anticipated CRC and give them 45 days to request a waiver or accept the CRC. The established CRC will be in effect for 12 months from the date implemented unless superseded by another CRC.

³ If it is determined during the additional reviews, under tier **v**, that a CRC is necessary, customers will be notified that a CRC will be implemented in 60 days. Western will provide its customers with information concerning the anticipated CRC and give them 30 days to request a waiver or accept the CRC. The established CRC will be in effect for 12 months from the date implemented unless superseded by another CRC.

Billing Demand:

The billing demand will be the greater of:

1. The highest 30-minute integrated demand measured during the month up to, but not more than, the delivery obligation under the power sales contract, or
2. The Contract Rate of Delivery.

Billing Energy:

The billing energy will be the energy measured during the month up to, but not more than, the delivery obligation under the power sales contract.

Adjustment for Waiver:

Customers can choose not to take the full SHP energy supplied as determined in the attached formulas for CRC and will be billed the Energy and Capacity rates listed above, but not the CRC.

Adjustment for Transformer Losses:

If delivery is made at transmission voltage but metered on the low-voltage side of the substation, the meter readings will be increased to compensate for transformer losses as provided in the contract.

Adjustment for Power Factor:

The customer will be required to maintain a power factor at all points of measurement between 95 percent lagging and 95 percent leading.

Adjustment for Western Replacement Power:

Pursuant to the contractor's Firm Electric Service Contract, as amended, Western will bill the contractor for its proportionate share of the costs of Western Replacement Power (WRP) within a given time period. Western will include in the contractor's monthly power bill the cost of the WRP and the incremental administrative costs associated with WRP.

Adjustment for Customer Displacement Power Administrative Charges:

Western will include in the contractor's regular monthly power bill the incremental administrative costs associated with Customer Displacement Power.

Rate Schedule SP-EI4

SCHEDULE 4 to Tariff
(Supersedes Schedule SP-EI3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

ENERGY IMBALANCE SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-EI4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Formula Rates:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS4, or as superseded.

Rate Schedule SP-FR4

SCHEDULE 3 to Tariff
(Supersedes Schedule SP-FR3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

REGULATION AND FREQUENCY RESPONSE SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-FR4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP customers receiving this service.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS3 or as superseded. If the CRSP MC has regulation available for sale from Salt Lake City Area Integrated Projects resources, the rate will be calculated using the formula below.

$$\begin{array}{l} \text{Regulation} \\ \text{Service} \\ \text{Rate} \end{array} = \frac{\text{Total Annual Revenue Requirement for Regulation Service}}{\text{Regulating Plant Capacity}}$$

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

NON-FIRM POINT-TO-POINT TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-NFT7 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project each month for Non-Firm, Point-to-Point Transmission Service under the applicable Non-Firm, Point-to-Point Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\begin{array}{l} \text{Maximum Non-Firm Point-To-Point} \\ \text{Transmission Rate} \end{array} = \begin{array}{l} \text{Firm Point-To-Point} \\ \text{Transmission Rate} \end{array}$$

A recalculated rate will go into effect every October 1 based on the above formula and updated financial and load data. Western will notify the transmission customer annually of the recalculated rate on or before September 1. Discounts may be offered from time-to-time in accordance with Western's Open Access Transmission Tariff.

Billing:

The formula rate above applies to the maximum amount of capacity reserved for periods ranging from 1 hour to 1 month, payable whether used or not. Billing will occur monthly.

Adjustment for Losses:

Power and energy losses incurred in connection with the transmission and delivery of power and energy under this rate schedule shall be supplied by the customer in accordance with the service contract. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

NETWORK INTEGRATION TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-NW4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project Management Center each month for Network Integration Transmission Service under the applicable Network Integration Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\text{Monthly Charge} = \frac{\text{Annual Transmission Revenue Requirement for Network Integration Transmission Service}}{12} \times \text{Transmission Customer's Load-Ratio Share}$$

A recalculated Annual Transmission Revenue Requirement for Network Integration Transmission Service will go into effect every October 1 based on the above formula and updated financial and operational data. Western will notify the transmission customer annually of the recalculated annual revenue requirement on or before September 1.

Billing:

Billing determinants for the formula rate above will be as specified in the service agreement.

Billing will occur monthly under the formula rate.

Adjustment for Losses:

Losses incurred for service under this rate schedule will be accounted as agreed to by the parties in accordance with the service agreement. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

FIRM POINT-TO-POINT TRANSMISSION SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-PTP8 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer will compensate the Colorado River Storage Project each month for Reserved Capacity under the applicable Firm Point-To-Point Transmission Service Agreement and the formula rate described herein.

Formula Rate:

$$\text{Firm Point-To-Point Transmission Rate} = \frac{\text{Annual Transmission Revenue Requirement (\$)}}{\text{Firm Transmission Capacity Reservations} + \text{Network Integration Transmission Service Capacity (kW)}}$$

A recalculated rate will go into effect every October 1 based on the above formula and updated financial and operational data. Western will notify the transmission customer annually of the recalculated rate on or before September 1. Discounts may be offered from time-to-time in accordance with Western's Open Access Transmission Tariff.

Billing:

The formula rate above applies to the maximum amount of capacity reserved for periods ranging from 1 hour to 1 month, payable whether used or not. Billing will occur monthly.

Adjustment for Losses:

Losses incurred for service under this rate schedule will be accounted for as agreed to by the parties in accordance with the service agreement. If losses are not fully provided by a transmission customer, charges for financial compensation may apply.

Rate Schedule SP-RS4

SCHEDULE 2 to Tariff
(Supersedes Schedule SP-RS3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**REACTIVE SUPPLY AND VOLTAGE CONTROL FROM GENERATION AND
OTHER SOURCES SERVICE**
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-RS4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS2, or as superseded.

Rate Schedule SP-SD4

SCHEDULE 1 to Tariff
(Supersedes Schedule SP-SD3)

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

SCHEDULING, SYSTEM CONTROL, AND DISPATCH SERVICE
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-SD4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

Scheduling, System Control, and Dispatch service is required to schedule the movement of power through, out of, within, or into a control area. The transmission customer must purchase this service from the transmission provider. The charges for this service will be included in the CRSP transmission service rates.

Formula Rate:

Provided through the Western Area Colorado Missouri (WACM) Balancing Authority under Rate Schedule L-AS1, or as superseded.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**OPERATING RESERVES - SPINNING AND
SUPPLEMENTAL RESERVE SERVICES**
(Approved Under Rate Order No. WAPA-169)

Effective:

Rate Schedule SP-SSR4 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

To all CRSP transmission customers receiving this service.

Character of Service:

Spinning Reserve is defined in Schedule 5 of Western Area Power Administration's Open Access Transmission Tariff.

Supplemental Reserve is defined in Schedule 6 of Western Area Power Administration's Open Access Transmission Tariff.

Formula Rate:

The transmission customer serving loads within the transmission provider's balancing authority must acquire Spinning and Supplemental Reserve services from CRSP, from a third party, or by self-supply.

**UNITED STATES DEPARTMENT OF ENERGY
WESTERN AREA POWER ADMINISTRATION**

**COLORADO RIVER STORAGE PROJECT MANAGEMENT CENTER
COLORADO RIVER STORAGE PROJECT**

**UNRESERVED USE PENALTIES
(Approved Under Rate Order No. WAPA-169)**

Effective:

Rate Schedule SP-UU1 will be placed into effect on an interim basis on the first day of the first full-billing period beginning on or after October 1, 2015, and will remain in effect until FERC confirms, approves, and places the rate schedules in effect on a final basis through September 30, 2020, or until the rate schedules are superseded.

Applicable:

The transmission customer shall compensate the Colorado River Storage Project (CRSP) each month for any unreserved use of the transmission system (Unreserved Use) under the applicable transmission service rates as outlined herein. Unreserved Use occurs when an eligible customer uses transmission service that it has not reserved or a transmission customer uses transmission service in excess of its reserved capacity. Unreserved Use may also include a customer's failure to curtail transmission when requested.

Penalty Rate:

The penalty rate for a transmission customer that engages in Unreserved Use is 200 percent of CRSP's approved transmission service rate for point-to-point (PTP) transmission service assessed as follows:

- (i) The Unreserved Use Penalty for a single hour of Unreserved Use is based upon the rate for daily firm PTP service.
- (ii) The Unreserved Use Penalty for more than one assessment for a given duration (e.g., daily) increases to the next longest duration (e.g., weekly).
- (iii) The Unreserved Use Penalty for multiple instances of Unreserved Use (e.g., more than 1 hour) within a day is based on the rate for daily firm PTP service. The Unreserved Use Penalty charge for multiple instances of Unreserved Use isolated to 1 calendar week would result in a penalty based on the rate for weekly firm PTP service. The Unreserved Use Penalty charge for multiple instances of Unreserved Use during more than 1 week in a calendar month will be based on the rate for monthly firm PTP service.

A transmission customer that exceeds its firm reserved capacity at any point of receipt or point of delivery or an eligible customer that uses transmission service at a point of receipt or point of delivery that it has not reserved is required to pay for all ancillary services identified in Western's Open Access Transmission Tariff that were provided by the CRSP and associated with the Unreserved Use. The customer will pay for ancillary services based on the amount of transmission service it used and did not reserve.

Rate:

The rate for Unreserved Use Penalties is 200 percent of Western's approved rate for firm point-to-point transmission service assessed as described above. Any change to the rate for Unreserved Use Penalties will be listed in a revision to this rate schedule issued under applicable Federal laws and policies and made part of the applicable service agreement.

As a reminder, the Power Repayment BackUp Study is no longer being published in the binder.

**Salt Lake City Area Integrated Projects
Annual Revenue Requirements and Firm Power Rates Comparison Table**

Item	Unit	WAPA 169	FY 2016	Change	
		2017 Workplan	2018 Workplan	Amount	Percent
Rate Setting Period:					
Beginning year	FY	2016	2017		
Pinchpoint year	FY	2025	2025		
Number of rate setting years	Years	10	9		
Annual Revenue Requirements:					
<i>Expenses</i>					
Operation and Maintenance:					
Western	1,000	\$52,630	\$52,644	\$14	0%
Reclamation	1,000	\$34,535	\$35,546	\$1,011	3%
Total O&M	1,000	\$87,165	\$88,190	\$1,025	1%
Purchased Power 1/	1,000	\$10,280	\$8,033	(\$2,247)	-22%
Transmission	1,000	\$10,421	\$10,293	(\$128)	-1%
Integrated Projects requirements	1,000	\$8,610	\$8,775	\$165	2%
Interest	1,000	\$4,706	\$2,102	(\$2,604)	-55%
Other 2/	1,000	\$14,587	\$14,329	(\$258)	-2%
Total Expenses	1,000	\$135,769	\$131,722	(\$4,047)	-3%
<i>Principal payments</i>					
Deficits	1,000	\$0	\$0	\$0	0%
Replacements	1,000	\$30,037	\$31,315	\$1,278	4%
Original Project and Additions	1,000	\$3,937	\$3,964	\$27	1%
Irrigation 3/	1,000	\$14,130	\$10,792	(\$3,338)	-24%
Total principal payments	1,000	\$48,104	\$46,071	(\$2,033)	-4%
Total Annual Revenue Requirements	1,000	\$183,873	\$177,793	(\$6,080)	-3%
(Less Offsetting Annual Revenue:)					
Transmission (firm and non-firm)	1,000	\$19,640	\$22,062	\$2,422	12%
Merchant Function 4/	1,000	\$9,918	\$8,138	(\$1,780)	-18%
Other 5/	1,000	\$5,118	\$5,077	(\$41)	-1%
Total Offsetting Annual Revenue	1,000	\$34,676	\$35,277	\$601	2%
Net Annual Revenue Requirements	1,000	\$149,197	\$142,516	(\$6,681)	-4%
Energy Sales 6/	MWH	5,071,804	5,082,388	10,584	0%
Capacity Sales	kW	1,407,920	1,408,156	236	0%
		0	0		
Composite Rate	mills/kWh	29.42	28.05	-1.37	-4.7%

1/ FY 2016-18 are projected costs using the April 2016 24-month study.

\$4 million in purchase power will be projected annually for the administrative merchant function activities

2/ Includes the cost of salinity, federal benefits costs, CME interest, reimbursable environmental costs, and MOA costs.

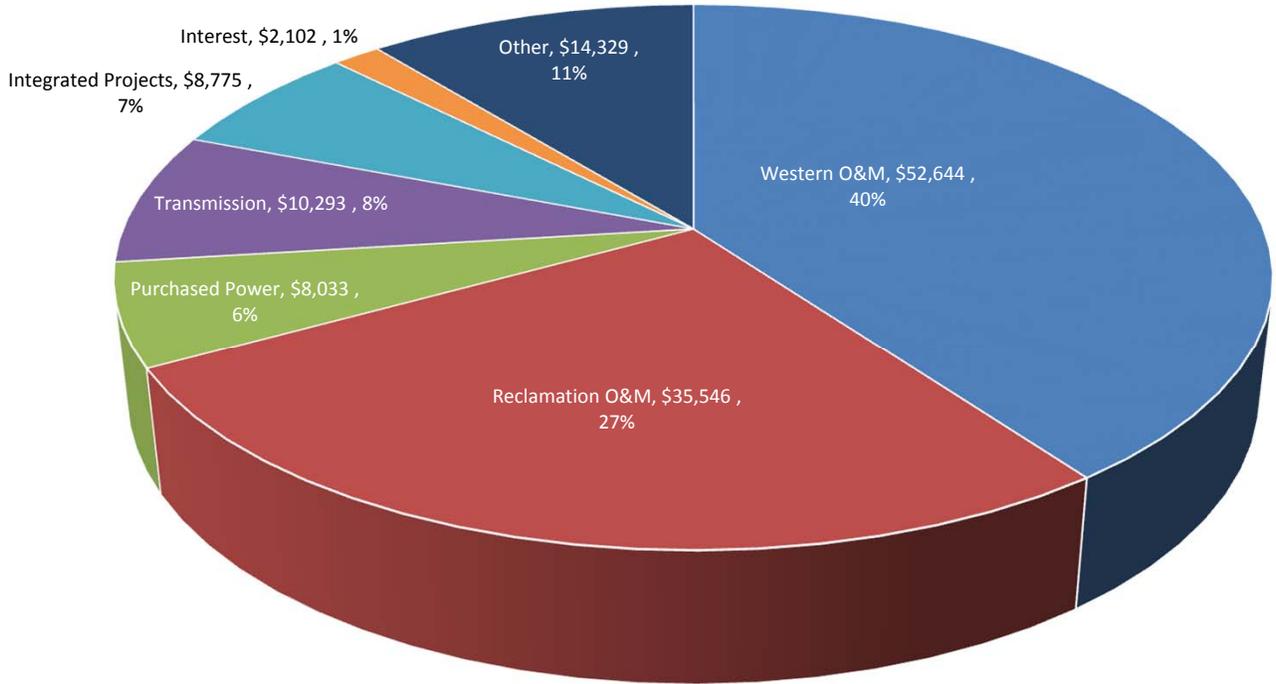
3/ Aid to Irrigation plus Aid to Participating Projects minus Annual Surplus M&I

4/ Includes transaction fees and resale energy.

5/ Other revenues include ancillary services such as spinning reserves, facility use charges, and other misc. service charges

6/ April 2016 project use estimates from Reclamation. (Average MWH Annual Sales for 2017 - 2025 minus Other Energy Sales)

**Comparison of the Revenue Requirements for the
Salt Lake City Area Integrated Projects
Unit: \$1000**



Expense Category	\$1000's
Western O&M	\$52,644
Reclamation O&M	\$35,546
Purchased Power	\$8,033
Transmission	\$10,293
Integrated Projects	\$8,775
Interest	\$2,102
Other	\$14,329
Total Rev Requirement	\$131,722

**COLORADO RIVER STORAGE PROJECT
AVERAGE O&M BUDGET PROJECTIONS COMPARISONS**

FY 2016 PRS (FY 2018 Work Plan) v. WAPA 169 (FY 2017 Work Plan)

ITEM	TYPE	WAPA 169 2016-2025	FY2018 Workplan 2017-2025	Average per year Increase	Percent Increase
WESTERN *					
DESERT SOUTHWEST					
GWA	O&M	\$1,162,134	\$630,764	(\$531,370)	-46%
O&M TRANSMISSION LINES	O&M	\$1,914,732	\$1,741,448	(\$173,284)	-9%
O&M SUBSTATIONS	O&M	\$4,857,405	\$5,344,341	\$486,936	10%
OTHER EXP (except int)	O&M	\$457,698	\$253,699	(\$203,999)	-45%
DEPRECIATION	Other	\$80,417	\$103,115	\$22,699	
RETIRE, REPLACE, ADDITIONS	Other	\$2,826,000	\$2,277,222	(\$548,778)	
POWER BILLING	O&M	\$140,198	\$21,932	(\$118,266)	-84%
C&RE	O&M	\$4,282	\$2,847	(\$1,435)	-34%
POWER MARKETING	O&M	\$14,281	\$15,542	\$1,261	9%
SYSTEM OPERATION & LOAD DISP	O&M	\$410,863	\$326,604	(\$84,259)	-21%
DSW TOTAL BUDGET		\$11,868,009	\$10,717,515	(\$1,150,494)	
DSW PRS O&M		\$8,961,593	\$8,337,178	(\$624,415)	-7%
ROCKY MOUNTAIN					
GWA	O&M	\$3,098,324	\$3,125,184	\$26,861	1%
O&M TRANSMISSION LINES	O&M	\$5,687,098	\$5,622,096	(\$65,002)	-1%
O&M SUBSTATIONS	O&M	\$13,270,951	\$13,872,541	\$601,591	5%
OTHER EXP (except int)	O&M	\$1,821,081	\$1,458,894	(\$362,187)	-20%
DEPRECIATION	Other	\$266,182	\$265,404	(\$778)	
RETIRE, REPLACE, ADDITIONS	Other	\$4,802,045	\$6,469,542	\$1,667,497	
PURCHASED POWER & WHEELING	Other	\$0	\$0	\$0	
POWER BILLING	O&M	\$148,162	\$96,431	(\$51,731)	-35%
C&RE	O&M	\$5,324	\$5,308	(\$16)	0%
POWER MARKETING	O&M	\$1,029,001	\$666,787	(\$362,214)	-35%
SYSTEM OPERATION & LOAD DISP	O&M	\$7,855,834	\$8,091,025	\$235,191	3%
RM TOTAL BUDGET		\$37,984,001	\$39,673,212	\$1,689,211	
RM PRS O&M		\$32,915,775	\$32,938,267	\$22,492	0%
CRSP MC					
GWA	O&M	\$1,559,444	\$1,108,904	(\$450,540)	-29%
O&M TRANSMISSION LINES	O&M	\$0	\$0	\$0	0%
O&M SUBSTATIONS	O&M	\$0	\$0	\$0	0%
OTHER EXP (except int)	O&M	\$46,363	\$40,962	(\$5,401)	-12%
INTEREST	Other	\$4,552,693	\$2,721,218	(\$1,831,475)	
PURCHASED POWER & WHEELING	Other	\$92,816,206	\$84,341,386	(\$8,474,820)	
RETIRE, REPLACE, ADDITIONS	Other	\$13,600	\$0	(\$13,600)	
DEPRECIATION	Other	\$82,935	\$238,203	\$155,268	
POWER BILLING	O&M	\$0	\$0	\$0	
C&RE	O&M	\$199,112	\$194,767	(\$4,345)	-2%
POWER MARKETING	O&M	\$9,089,249	\$10,290,613	\$1,201,364	13%
Grand Canyon Protection Act (Non-reimb)	Environ	\$0	\$0	\$0	
Recovery Implementation Program (Non-reimb)	Environ	\$1,869,719	\$3,755,547	\$1,885,828	
SYSTEM OPERATION & LOAD DISP	O&M	\$0	\$0	\$0	\$0
STATE OF COLORADO (RIP) LOAN	O&M	(\$886,000)	(\$886,000)	\$0	\$0
CRSP MC TOTAL BUDGET		\$109,343,321	\$101,805,601	(\$7,537,720)	
CRSP MC PRS O&M		\$10,008,167	\$10,749,246	\$741,079	7%

ITEM	TYPE	WAPA 169 2016-2025	FY2018 Workplan 2017-2025	Average per year Increase	Percent Increase
TOTAL WESTERN					
GWA	O&M	\$5,819,902	\$4,864,853	(\$955,049)	-16%
O&M TRANSMISSION LINES	O&M	\$7,601,830	\$7,363,545	(\$238,285)	-3%
O&M SUBSTATIONS	O&M	\$18,128,356	\$19,216,882	\$1,088,526	6%
OTHER EXPENSES	O&M	\$2,325,142	\$1,753,555	(\$571,587)	-25%
INTEREST	Other	\$4,552,693	\$2,721,218	(\$1,831,475)	
PURCHASED POWER & WHEELING	Other	\$92,816,206	\$84,341,386	(\$8,474,820)	
Depreciation	Other	\$429,534	\$606,722	\$177,188	
RETIRE, REPLACE, ADDITIONS	Other	\$7,641,645	\$8,746,764	\$1,105,119	
POWER BILLING	O&M	\$288,360	\$118,363	(\$169,997)	-59%
C&RE	O&M	\$208,717	\$202,922	(\$5,796)	-3%
POWER MARKETING	O&M	\$10,132,531	\$10,972,942	\$840,411	8%
GCPA(Non-reimb)	Environ	\$0	\$0	\$0	
RIP (Non-reimb)	Environ	\$1,869,719	\$3,755,547	\$1,885,828	
SYSTEM OPERATION & LOAD DISP	O&M	\$8,266,697	\$8,417,629	(\$360,953)	-4%
STATE OF COLORADO (RIP) LOAN	O&M	(\$886,000)	(\$886,000)	\$0	0%
Western Budget		\$159,195,332	\$152,196,328	(\$6,999,004)	
WESTERN TOTAL O&M		\$51,885,535	\$52,024,690	\$139,155	0%
CME DEPRECIATION		\$745,000	\$619,000	(\$126,000)	-17%
WESTERN PRS O&M		\$52,630,535	\$52,643,690	\$13,155	0%
BUREAU OF RECLAMATION **					
Water and Energy Mgmt and Dvlp	0.00%	\$1,987,771	\$1,906,756	(\$81,015)	
Land Mgmt and Dvlp	0.00%	\$659,035	\$671,455	\$12,420	
Fish and Wildlife Mgmt and Dvlp:		\$0	\$0		
GC Adaptive Mgmt Prg	0.00%	\$12,115,234	\$12,076,043	(\$39,191)	
Endangered fish (RIP) base funding	0.00%	\$9,205,899	\$9,176,120	(\$29,780)	
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	
Flaming Gorge studies	90.00%	\$0	\$0	\$0	
Glen Canyon Studies	0.00%	\$0	\$0	\$0	
Navajo studies	83.00%	\$0	\$0	\$0	0%
Aspinall studies	97.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$23,967,939	\$23,830,373	(\$137,566)	-1%
Total PRS O&M		\$0	\$0	\$0	0%
Water Operations:					
Subtotal Bureau Budget	0.00%	\$7,864,683	\$7,925,941	\$61,257	1%
Total PRS O&M		\$6,168,097	\$6,228,879	\$60,782	1%
Power Operations:					
Subtotal Bureau Budget		\$23,201,415	\$23,820,152	\$618,737	3%
Total PRS O&M		\$23,201,415	\$23,820,152	\$618,737	3%
Miscellaneous:	100.00%	\$736,588	\$755,949	\$19,361	3%
Security:	70.00%	\$2,775,699	\$2,935,672	\$159,974	6%
Extraordinary Maintenance Expensed:					
Navajo	83.00%	\$132,667	\$72,593	(\$60,074)	-45%
Blue Mesa	97.00%	\$147,764	\$148,148	\$384	0%
Morrow Point	100.00%	\$128,917	\$117,593	(\$11,324)	-9%
Crystal	100.00%	\$150,083	\$137,593	(\$12,491)	-8%
Flaming Gorge	90.00%	\$132,667	\$115,556	(\$17,111)	-13%
Glen Canyon	62.20%	\$1,222,917	\$1,629,630	\$406,713	33%
Denver	97.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$1,915,014	\$2,221,111	\$306,097	16%
Total PRS O&M		\$1,412,499	\$1,576,770	\$164,272	12%

ITEM	TYPE	WAPA 169 2016-2025	FY2018 Workplan 2017-2025	Average per year Increase	Percent Increase
Replacements Expensed:		This section expanded in FY15			
Blue Mesa	97.00%	\$0	\$1,852	\$0	0%
Morrow Point	100.00%	\$82,500	\$64,815	\$0	0%
Crystal	100.00%	\$0	\$13,889	\$0	0%
Curecanti	100.00%	\$27,500	\$34,074	\$0	0%
Flaming Gorge	100.00%	\$114,583	\$106,481	\$0	0%
Glen Canyon	62.20%	\$28,500	\$21,296	\$0	0%
Denver	50.00%	\$0	\$0	\$0	0%
Subtotal Bureau Budget		\$253,083	\$242,407	(\$10,676)	-4%
Total PRS O&M		\$238,875	\$228,746	(\$10,129)	-4%
Total Reclamation Budget		\$61,425,825	\$61,731,605	\$305,780	0%
Reclamation CME DEPRECIATION		\$0	\$0	\$0	0%
Reclamation Reimbursable by power		\$34,535,277	\$35,546,169	\$1,010,892	3%
Total PRS O&M		\$87,165,811	\$88,189,859	\$1,024,048	1%
Environmental Costs:					
Western					
GCPA (Non-reimb)	Environ	\$0	\$0	\$0	
RIP (Non-reimb)	Environ	\$1,869,719	\$3,755,547	\$1,885,828	
USBR					
Fish and Wildlife Mgmt and Dvlp:					
Nonreimbursable					
GC Adaptive Mtmt Prg	0.00%	\$12,115,234	\$12,076,043	(\$39,191)	
Endangered fish (RIP) base funding	0.00%	\$9,205,899	\$9,176,120	(\$29,780)	
Glen Canyon Studies	0.00%	\$0	\$0	\$0	
Total non-reimbursable		\$23,190,853	\$25,007,709	(\$68,971)	
Reimbursable					
Flaming Gorge studies	100.00%	\$0	\$0	\$0	0%
Navajo studies	100.00%	\$0	\$0	\$0	0%
Aspinall studies	100.00%	\$0	\$0	\$0	0%
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	0%
Total reimbursable		\$0	\$0	\$0	0%

**COLORADO RIVER STORAGE PROJECT
O&M BUDGET PROJECTIONS
FY 2018 Work Plan**

* Western budget data from FY 2018 Work Plan dated 2/24/2016
** Bureau budget data from FY 2018 Preliminary Work Program Schedules dated 4/15/2016

ITEM	TYPE	Current Year	1	2	3	4	5	Future	9 Year
		2016	2017	2018	2019	2020	2021	Projection	Annual
		2016	2017	2018	2019	2020	2021	2022-2025	Average
WESTERN *									
DESERT SOUTHWEST									
GWA	O&M	\$969,982	\$1,104,081	\$540,515	\$554,028	\$567,879	\$582,076	\$582,076	\$630,764
O&M TRANSMISSION LINES	O&M	\$4,259,870	\$2,232,209	\$1,588,735	\$1,628,454	\$1,669,165	\$1,710,894	\$1,710,894	\$1,741,448
O&M SUBSTATIONS	O&M	\$4,615,390	\$4,556,594	\$5,146,817	\$5,275,487	\$5,407,374	\$5,542,559	\$5,542,559	\$5,344,341
OTHER EXPENSES	O&M	\$459,376	\$426,816	\$219,439	\$224,925	\$230,548	\$236,312	\$236,312	\$253,699
DEPRECIATION	Excluded	\$70,590	\$76,040	\$100,708	\$103,226	\$105,806	\$108,452	\$108,452	\$103,115
RETIRE, REPLACE, ADDITIONS	Excluded	\$1,655,000	\$3,415,000	\$2,715,000	\$4,585,000	\$2,030,000	\$1,550,000	\$1,550,000	\$2,277,222
POWER BILLING	O&M	\$121,542	\$123,293	\$8,759	\$8,977	\$9,202	\$9,432	\$9,432	\$21,932
C&RE	O&M	\$4,328	\$3,990	\$2,557	\$2,621	\$2,686	\$2,753	\$2,753	\$2,847
POWER MARKETING	O&M	\$7,048	\$14,073	\$14,871	\$15,243	\$15,624	\$16,014	\$16,014	\$15,542
SYSTEM OPERATION & LOAD DISP	O&M	\$345,396	\$390,083	\$301,339	\$308,873	\$316,595	\$324,510	\$324,510	\$326,604
DSW TOTAL BUDGET		\$12,508,523	\$12,342,179	\$10,638,740	\$12,706,833	\$10,354,879	\$10,083,001	\$10,083,001	\$10,717,515
DSW PRS O&M		\$10,782,933	\$8,851,139	\$7,823,032	\$8,018,608	\$8,219,073	\$8,424,550	\$8,424,550	\$8,337,178
ROCKY MOUNTAIN									
GWA	O&M	\$2,765,000	\$2,925,000	\$2,946,000	\$3,034,380	\$3,125,411	\$3,219,174	\$3,219,174	\$3,125,184
O&M TRANSMISSION LINES	O&M	\$5,979,587	\$5,902,657	\$5,843,028	\$5,297,319	\$5,456,238	\$5,619,925	\$5,619,925	\$5,622,096
O&M SUBSTATIONS	O&M	\$12,277,157	\$12,483,578	\$13,135,640	\$13,529,709	\$13,935,601	\$14,353,669	\$14,353,669	\$13,872,541
OTHER EXPENSES	O&M	\$1,835,429	\$1,697,412	\$1,336,441	\$1,376,534	\$1,417,830	\$1,460,365	\$1,460,365	\$1,458,894
DEPRECIATION	Excluded	\$250,000	\$250,000	\$250,000	\$257,500	\$265,225	\$273,182	\$273,182	\$265,404
RETIRE, REPLACE, ADDITIONS	Excluded	\$5,523,251	\$6,636,020	\$6,636,857	\$7,518,000	\$6,150,000	\$6,257,000	\$6,257,000	\$6,469,542
PURCHASED POWER & WHEELING	Excluded						\$0	\$0	\$0
POWER BILLING	O&M	\$116,155	\$141,539	\$84,907	\$87,454	\$90,078	\$92,780	\$92,780	\$96,431
C&RE	O&M	\$5,000	\$5,000	\$5,000	\$5,150	\$5,305	\$5,464	\$5,464	\$5,308
POWER MARKETING	O&M	\$982,732	\$964,758	\$588,732	\$606,394	\$624,586	\$643,323	\$643,323	\$666,787
SYSTEM OPERATION & LOAD DISP	O&M	\$6,587,827	\$7,460,201	\$7,640,277	\$7,869,486	\$8,105,570	\$8,348,737	\$8,348,737	\$8,091,025
RM TOTAL BUDGET		\$36,322,138	\$38,466,165	\$38,466,881	\$39,581,926	\$39,175,843	\$40,273,619	\$40,273,619	\$39,673,212
RM PRS O&M		\$30,548,887	\$31,580,145	\$31,580,025	\$31,806,426	\$32,760,618	\$33,743,437	\$33,743,437	\$32,938,267
CRSP MC									
GWA	O&M	\$1,299,309	\$1,481,781	\$1,004,524	\$1,029,637	\$1,055,378	\$1,081,763	\$1,081,763	\$1,108,904
O&M TRANSMISSION LINES	O&M						\$0	\$0	\$0
O&M SUBSTATIONS	O&M						\$0	\$0	\$0
OTHER EXPENSES	O&M	\$50,224	\$38,467	\$38,565	\$48,880	\$39,888	\$40,572	\$40,572	\$40,962
INTEREST	Excluded	\$7,926,930	\$4,990,966	\$4,000,000	\$3,200,000	\$2,300,000	\$2,000,000	\$2,000,000	\$2,721,218
PURCHASED POWER & WHEELING	Excluded	\$90,057,495	\$96,260,507	\$80,418,996	\$83,198,996	\$83,198,996	\$83,198,996	\$83,198,996	\$84,341,386
RETIRE, REPLACE, ADDITIONS	Excluded	\$96,000	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Depreciation	Excluded	\$49,869	\$80,798	\$246,584	\$251,516	\$256,546	\$261,677	\$261,677	\$238,203
POWER BILLING	O&M						\$0	\$0	\$0
C&RE	O&M	\$165,134	\$202,059	\$184,678	\$188,678	\$192,766	\$196,944	\$196,944	\$194,767
POWER MARKETING	O&M	\$9,059,346	\$8,635,637	\$9,947,108	\$10,182,747	\$10,430,300	\$10,683,944	\$10,683,944	\$10,290,613
GCPA(Non-reimb)	Environ						\$0	\$0	\$0
RIP (Non-reimb)	Environ	\$1,810,964	\$1,750,372	\$3,819,166	\$3,900,710	\$3,984,019	\$4,069,131	\$4,069,131	\$3,755,547
SYSTEM OPERATION & LOAD DISP	O&M	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
STATE OF COLORADO LOAN	O&M	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)
MC TOTAL BUDGET		\$109,629,271	\$112,554,587	\$98,773,623	\$101,115,164	\$100,571,894	\$100,647,028	\$100,647,028	\$101,805,601
MC PRS O&M		\$9,688,013	\$9,471,944	\$10,288,876	\$10,563,942	\$10,832,333	\$11,117,223	\$11,117,223	\$10,749,246

ITEM	TYPE	Current Year					Future 9 Year Projection 2022-2025	9 Year Annual Average 2017-2025	
		2016	1 2017	2 2018	3 2019	4 2020			5 2021
TOTAL WESTERN									
GWA	O&M	\$5,034,291	\$5,510,862	\$4,491,039	\$4,618,045	\$4,748,668	\$4,883,012	\$4,883,012	\$4,864,853
O&M TRANSMISSION LINES	O&M	\$10,239,457	\$8,134,866	\$7,431,763	\$6,925,772	\$7,125,403	\$7,330,819	\$7,330,819	\$7,363,545
O&M SUBSTATIONS	O&M	\$16,892,547	\$17,040,172	\$18,282,457	\$18,805,197	\$19,342,975	\$19,896,227	\$19,896,227	\$19,216,882
OTHER EXPENSES	O&M	\$2,345,029	\$2,162,695	\$1,594,445	\$1,650,339	\$1,688,267	\$1,737,249	\$1,737,249	\$1,753,555
INTEREST	Exclude	\$7,926,930	\$4,990,966	\$4,000,000	\$3,200,000	\$2,300,000	\$2,000,000	\$2,000,000	\$2,721,218
PURCHASED POWER & WHEELING	Exclude	\$90,057,495	\$96,260,507	\$80,418,996	\$83,198,996	\$83,198,996	\$83,198,996	\$83,198,996	\$84,341,386
Depreciation	Exclude	\$370,459	\$406,838	\$597,292	\$612,242	\$627,578	\$643,310	\$643,310	\$606,722
RETIRE, REPLACE, ADDITIONS	Exclude	\$7,274,251	\$10,051,020	\$9,351,857	\$12,103,000	\$8,180,000	\$7,807,000	\$7,807,000	\$8,746,764
POWER BILLING	O&M	\$237,697	\$264,832	\$93,665	\$96,431	\$99,279	\$102,212	\$102,212	\$118,363
C&RE	O&M	\$174,462	\$211,049	\$192,235	\$196,449	\$200,757	\$205,161	\$205,161	\$202,922
POWER MARKETING	O&M	\$10,049,126	\$9,614,468	\$10,550,711	\$10,804,383	\$11,070,510	\$11,343,282	\$11,343,282	\$10,972,942
GCPA(Non-reimb)	Environ	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RIP (Non-reimb)	Environ	\$1,810,964	\$1,750,372	\$3,819,166	\$3,900,710	\$3,984,019	\$4,069,131	\$4,069,131	\$3,755,547
SYSTEM OPERATION & LOAD DISP	O&M	\$6,933,223	\$7,850,284	\$7,941,617	\$8,178,359	\$8,422,165	\$8,673,247	\$8,673,247	\$8,417,629
STATE OF COLORADO LOAN	O&M	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)	(\$886,000)
Western Budget		\$158,459,932	\$163,362,931	\$147,879,244	\$153,403,923	\$150,102,617	\$151,003,648	\$151,003,648	\$152,196,328
PRS O&M		\$51,019,833	\$49,903,228	\$49,691,933	\$50,388,975	\$51,812,025	\$53,285,210	\$53,285,210	\$52,024,690
CME Depreciation		\$619,000	\$619,000	\$619,000	\$619,000	\$619,000	\$619,000	\$619,000	\$619,000
Total WESTERN PRS O&M		\$51,638,833	\$50,522,228	\$50,310,933	\$51,007,975	\$52,431,025	\$53,904,210	\$53,904,210	\$52,643,690

BUREAU OF RECLAMATION **

Water and Egy Mgmt and Dvlp	0.00%	1,755,000	1,635,000	1,656,000	1,981,400	1,981,400	1,981,400	\$1,981,400	\$1,906,756
Land Mgmt and Dvlp	0.00%	598,000	615,940	634,418	653,451	673,054	693,246	\$693,246	\$671,455
Fish and WL Mgmt and Dvlp:								\$0	\$0
GC Adaptive Mgmt Prg	0.00%	10,754,967	11,077,616	11,409,944	11,752,243	12,104,810	12,467,954	\$12,467,954	\$12,076,043
Endangered fish (RIP) base funding	0.00%	8,172,285	8,417,454	8,669,977	8,930,076	9,197,979	9,473,918	\$9,473,918	\$9,176,120
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Flaming Gorge studies	90.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Glen Canyon Studies	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Navajo studies	83.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Aspinall studies	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$21,280,252	\$21,746,010	\$22,370,340	\$23,317,170	\$23,957,243	\$24,616,518	\$24,616,518	\$23,830,373
Total PRS O&M		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

ITEM	TYPE	Current Year					Future 9 Year Projection 2022-2025	9 Year Annual Average 2017-2025	
		2016	2017	2018	2019	2020			2021
Water Operations:									
Navajo	83.00%	1,623,477	1,672,181	1,722,347	1,774,017	1,827,238	1,882,055	\$1,750,219	\$1,764,302
Blue Mesa	97.00%	818,414	842,966	868,255	894,303	921,132	948,766	\$882,306	\$889,405
Crystal	100.00%	636,585	655,683	675,353	695,614	716,482	737,976	\$686,282	\$691,804
Morrow Point	100.00%	708,220	729,467	751,351	773,891	797,108	821,021	\$763,510	\$769,653
Flaming Gorge	90.00%	756,300	778,989	802,359	826,429	851,222	876,759	\$815,343	\$821,903
Glen Canyon	62.20%	2,515,875	2,591,351	2,669,092	2,749,165	2,831,639	2,916,589	\$2,712,285	\$2,734,108
Subtotal Budget		\$7,058,871	\$7,270,637	\$7,488,756	\$7,713,419	\$7,944,821	\$8,183,166	\$8,183,166	\$7,925,941
Total PRS O&M (88%)		\$5,731,697	\$5,903,648	\$6,080,757	\$6,263,180	\$6,451,075	\$6,644,607	\$6,179,161	\$6,228,879
Power Operations:									
Subtotal Budget		21,214,313	21,850,742	22,506,265	23,181,453	23,876,896	24,593,203	\$24,593,203	\$23,820,152
Total PRS O&M		\$21,214,313	\$21,850,742	\$22,506,265	\$23,181,453	\$23,876,896	\$24,593,203	\$24,593,203	\$23,820,152
Miscellaneous:	100.00%	673,159	693,354	714,263	735,691	757,762	780,494	\$780,494	\$755,949
Security:		3,737,416	3,845,488	3,971,429	4,086,522	4,205,068	4,327,170	\$4,327,170	\$4,193,817
Reimbursable	70.00%	\$2,616,191	\$2,691,842	\$2,780,000	\$2,860,565	\$2,943,547	\$3,029,019	\$3,029,019	\$2,935,672
Additional OM&R (MOA Revenue)	0.00%	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000	\$11,500,000
Total PRS O&M (Already in as Misc)	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Extraordinary Maintenance:									
Expensed									
Navajo	83.00%	405,000	0	230,000	0	0	0	\$105,833	\$72,593
Blue Mesa	97.00%	0	0	25,000	755,000	20,000	0	\$133,333	\$148,148
Morrow Point	100.00%	0	60,000	200,000	30,000	345,000	0	\$105,833	\$117,593
Crystal	100.00%	20,000	60,000	0	35,000	640,000	0	\$125,833	\$137,593
Flaming Gorge	90% / 100%	1,060,000	0	50,000	150,000	0	0	\$210,000	\$115,556
Glen Canyon	62.20%	\$0	\$200,000	0	2,000,000	3,500,000	3,100,000	\$1,466,667	\$1,629,630
Denver	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$1,485,000	\$320,000	\$505,000	\$2,970,000	\$4,505,000	\$3,100,000	\$2,147,500	\$2,221,111
Total PRS O&M		\$1,416,150	\$244,400	\$460,150	\$2,176,350	\$3,181,400	\$1,928,200	\$1,550,108	\$1,576,770
Capitalized									
Navajo	83.00%	235,000	800,000	0	0	900,000	900,000	\$472,500	\$498,889
Blue Mesa	97.00%	0	0	0	0	0	0	\$0	\$0
Morrow Point	100.00%	0	100,000	342,000	0	0	0	\$73,667	\$81,852
Crystal	100.00%	0	0	0	0	0	0	\$0	\$0
Flaming Gorge	90% / 100%	550,000	580,000	1,000,000	0	0	0	\$355,000	\$333,333
Glen Canyon	62.2% / 100%	0	1,400,000	750,000	300,000	450,000	700,000	\$600,000	\$666,667
Denver	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$785,000	\$2,880,000	\$2,092,000	\$300,000	\$1,350,000	\$1,600,000	\$1,501,167	\$1,580,741
Total PRS O&M		\$740,050	\$2,698,200	\$2,023,100	\$186,600	\$1,026,900	\$1,333,600	\$1,385,342	\$1,423,307

ITEM	TYPE	Current Year	1	2	3	4	5	Future	9 Year
		2016	2017	2018	2019	2020	2021	Projection	Annual
		2022-2025	2017-2025						
Replacements:									
Expensed									
Blue Mesa	97.00%	25,000	0	0	0	0	0	\$4,167	\$1,852
Morrow Point	100.00%	0	50,000	300,000	0	0	0	\$58,333	\$64,815
Crystal	100.00%	0	0	75,000	0	0	0	\$12,500	\$13,889
Curecanti	100.00%	85,000	150,000	0	0	0	0	\$39,167	\$34,074
Flaming Gorge	90% / 100%	0	0	10,000	565,000	0	0	\$95,833	\$106,481
Glen Canyon	62.20%	175,000	45,000	0	0	0	0	\$36,667	\$21,296
Denver	50.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Subtotal Budget		\$285,000	\$245,000	\$385,000	\$565,000	\$0	\$0	\$246,667	\$242,407
Total PRS O&M		\$218,100	\$227,990	\$385,000	\$515,000	\$0	\$0	\$232,682	\$228,746
Capitalized									
Blue Mesa	100.00%	4,550,000	4,560,000	4,145,000	1,440,000	155,000	1,600,000	\$2,741,667	\$2,540,741
Morrow Point	100.00%	950,000	1,150,000	1,130,000	5,450,000	6,000,000	5,000,000	\$3,280,000	\$3,538,889
Crystal	100.00%	0	0	980,000	540,000	2,250,000	0	\$628,333	\$698,148
Curecanti	100.00%	90,000	435,000	40,000	255,000	290,000	0	\$185,000	\$195,556
Flaming Gorge	90% / 100%	100.00%	325,000	115,000	515,000	640,000	2,425,000	\$1,245,000	\$1,347,222
Glen Canyon	62.2% / 100%	100.00%	16,360,000	19,260,000	10,950,000	17,485,000	3,235,000	\$11,990,000	\$11,504,444
Denver	50.00%							\$0	\$0
UCPO Modernize Plant Controls	100.00%	\$500,000	\$2,200,000	\$9,500,000	\$3,550,000	\$3,350,000	\$0	\$3,183,333	\$3,481,481
Subtotal Budget		\$22,775,000	\$27,720,000	\$27,260,000	\$29,360,000	\$17,705,000	\$14,700,000	\$23,253,333	\$23,306,481
Total PRS O&M		\$22,530,970	\$26,454,370	\$25,740,400	\$27,114,470	\$17,317,670	\$13,962,900	\$22,186,797	\$22,148,555
Total Reclamation Budget		\$79,294,011	\$86,571,231	\$87,293,053	\$92,229,254	\$84,301,790	\$81,900,552	\$89,649,218	\$87,876,973
Reclamation CME DEPRECIATION		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total USBR O&M Reimbursable by power		\$31,869,610	\$31,611,976	\$32,926,435	\$35,732,239	\$37,210,680	\$36,975,524	\$36,364,667	\$35,546,169
Total WAPA and USBR PRS O&M		\$83,508,443	\$82,134,204	\$83,237,368	\$86,740,214	\$89,641,705	\$90,879,734	\$90,268,877	\$88,189,859

Environmental Costs:

Western									
GCPA (Non-reimb)	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
RIP(Non-reimb)	0.00%	\$1,810,964	\$1,750,372	\$3,819,166	\$3,900,710	\$3,984,019	\$4,069,131	\$4,069,131	\$3,755,547
USBR									
Fish and Wildlife Mgmt and Dvlp:									
Nonreimbursable									
GC Adaptive Mgmt Prg	0.00%	\$10,754,967	\$11,077,616	\$11,409,944	\$11,752,243	\$12,104,810	\$12,467,954	\$12,467,954	\$12,076,043
Endangered fish (RIP) base funding	0.00%	\$8,172,285	\$8,417,454	\$8,669,977	\$8,930,076	\$9,197,979	\$9,473,918	\$9,473,918	\$9,176,120
Glen Canyon Studies	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total non-reimbursable		\$20,738,216	\$21,245,442	\$23,899,088	\$24,583,029	\$25,286,808	\$26,011,004	\$26,011,004	\$25,007,709
Reimbursable									
Flaming Gorge studies	90.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Navajo studies	97.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Aspinall studies	83.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Endangered fish (RIP) capital	0.00%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Total reimbursable as O&M		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0

Note: Gray Shaded amounts are not included in PRS O&M.

FY2017 SLCA/IP WORKPLAN SUMMARY

POWER SYS	Project Number	FUND	Data						
			Sum of FY16	Sum of FY17	Sum of FY18	Sum of Out Yr 1	Sum of Out Yr 2	Sum of Out Yr 3	Sum of Out Yr 4
LLCO	%WES M-WMA	WMA	\$ 5,408	\$ 5,199	\$ 41,690	\$ 42,524	\$ 43,376	\$ 44,244	\$ 45,130
	CLB 001B	VMF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	N/FLCO GWAMM-WMA	WMA	\$ 1,593	\$ 1,667	\$ 1,194	\$ 1,224	\$ 1,255	\$ 1,286	\$ 1,318
	N/FLCO MRKTM-WMA	WMA	\$ 6,096	\$ 6,470	\$ 7,882	\$ 8,084	\$ 8,291	\$ 8,503	\$ 8,721
	N/FLCO NDUE1	WMA	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	UM LM WES M-WMA	WMA	\$ 17,662	\$ 18,046	\$ 28,869	\$ 29,620	\$ 30,392	\$ 31,183	\$ 31,995
	UMW WES M-WMA	WMA	\$ 10,754	\$ 11,347	\$ 750	\$ 770	\$ 790	\$ 811	\$ 832
LLCO Total			\$ 41,513	\$ 42,728	\$ 80,384	\$ 82,222	\$ 84,103	\$ 86,027	\$ 87,996
LLCR	MOC%	VMF	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	N/FLCR CAREM	VMF	\$ 165,134	\$ 192,059	\$ 184,678	\$ 188,678	\$ 192,766	\$ 196,944	\$ 201,214
	N/FLCR DEPR-M	VMF	\$ 49,869	\$ 80,183	\$ 246,584	\$ 251,516	\$ 256,546	\$ 261,677	\$ 266,911
	N/FLCR GWAMM	VMF	\$ 1,299,309	\$ 1,481,781	\$ 1,004,524	\$ 1,029,637	\$ 1,055,378	\$ 1,081,763	\$ 1,108,807
	N/FLCR KPPWW	RPF	\$ 20,350,000	\$ 25,030,000	\$ 20,036,866	\$ 21,036,866	\$ 20,036,866	\$ 20,036,866	\$ 20,036,866
	N/FLCR MOV P1	VMF	\$ 96,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	N/FLCR MRKTM	VMF	\$ 8,689,510	\$ 8,340,491	\$ 9,571,286	\$ 9,797,851	\$ 10,036,108	\$ 10,280,229	\$ 10,530,357
	N/FLCR NDUE1	VMF	\$ 7,926,930	\$ 7,000,000	\$ 4,000,000	\$ 3,200,000	\$ 2,300,000	\$ 2,000,000	\$ 2,000,000
	N/FLCR NRMBM	VMF	\$ 1,806,441	\$ 1,750,372	\$ 3,819,166	\$ 3,900,710	\$ 3,984,019	\$ 4,069,131	\$ 4,156,087
	N/FLCR PPW1W	VMF	\$ 80,390,000	\$ 85,840,000	\$ 70,300,000	\$ 73,080,000	\$ 73,080,000	\$ 73,080,000	\$ 73,080,000
	N/FLCR PPW4W	VMF	\$ 9,657,495	\$ 10,420,507	\$ 10,118,996	\$ 10,118,996	\$ 10,118,996	\$ 10,118,996	\$ 10,118,996
	N/FLCR PWMKT	VMF	\$ 391,118	\$ 295,146	\$ 375,822	\$ 384,896	\$ 394,192	\$ 403,716	\$ 413,472
	N/FLCR SAFEM	VMF	\$ 30,224	\$ 18,467	\$ 18,565	\$ 28,480	\$ 19,080	\$ 19,348	\$ 29,283
	N/FLCR TRANM	VMF	\$ 20,000	\$ 20,000	\$ 20,000	\$ 20,400	\$ 20,808	\$ 21,224	\$ 21,649
LLCR Total			\$ 130,872,030	\$ 140,469,005	\$ 119,696,489	\$ 123,038,030	\$ 121,494,761	\$ 121,569,894	\$ 121,963,642
LLDO	%WESM	VMF	\$ 44,182	\$ 44,658	\$ 16,321	\$ 16,730	\$ 17,148	\$ 17,576	\$ 18,016
	GCT WESM	VMF	\$ 21,000	\$ 20,000	\$ 27,400	\$ 27,948	\$ 28,507	\$ 29,077	\$ 29,659
	GCTMPE WESM	VMF	\$ 42,676	\$ 46,260	\$ 117,689	\$ 120,390	\$ 123,154	\$ 125,982	\$ 128,877
	N/FLDO GWAMM	VMF	\$ 1,593	\$ 2,024	\$ 1,194	\$ 1,224	\$ 1,255	\$ 1,286	\$ 1,318
	N/FLDO MRKTM	VMF	\$ 6,096	\$ 6,470	\$ 7,882	\$ 8,084	\$ 8,291	\$ 8,503	\$ 8,721
	N/FLDO NDUE1	VMF	\$ 1,784,490	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	various	VMF	\$ 1,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	(blank)	VMF	\$ 588,200	\$ -	\$ 9,524	\$ 9,774	\$ 10,032	\$ 10,295	\$ 10,566
LLDO Total			\$ 2,489,237	\$ 119,412	\$ 180,011	\$ 184,150	\$ 188,386	\$ 192,721	\$ 197,157
LLGF	N/FLGF AAGEA	RAF	\$ 1,301,812	\$ 1,997,967	\$ 2,257,038	\$ 2,105,747	\$ 2,156,049	\$ 2,207,572	\$ 2,260,346
	N/FLGF DATAA	RAF	\$ 62,800	\$ 104,200	\$ 160,194	\$ 163,398	\$ 166,666	\$ 169,999	\$ 173,399
LLGF Total			\$ 1,364,612	\$ 2,102,167	\$ 2,417,232	\$ 2,269,145	\$ 2,322,715	\$ 2,377,571	\$ 2,433,745
LLRG	ELB WES M-WMA	WMA	\$ 6,585	\$ 6,783	\$ 18,078	\$ 18,479	\$ 18,889	\$ 19,309	\$ 19,738
	N/FLRG GWAMM-WMA	WMA	\$ 1,593	\$ 2,024	\$ 1,194	\$ 1,224	\$ 1,255	\$ 1,286	\$ 1,318
	N/FLRG MRKTM-WMA	WMA	\$ 6,096	\$ 6,470	\$ 7,882	\$ 8,084	\$ 8,285	\$ 8,493	\$ 8,705
	N/FLRG NDUE1	WMA	\$ 9,498	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
	N/FLRG SUBSM-WMA	WMA	\$ 970	\$ 899	\$ -	\$ -	\$ -	\$ -	\$ -
LLRG Total			\$ 24,742	\$ 16,176	\$ 27,154	\$ 27,787	\$ 28,430	\$ 29,088	\$ 29,761
LLSE	% WES1M or WESM	VMF	\$ 5,815	\$ 5,399	\$ -	\$ -	\$ -	\$ -	\$ -
	FON WES M	VMF	\$ 24,507	\$ 25,695	\$ 36,890	\$ 37,826	\$ 38,786	\$ 39,771	\$ 40,781
	GNR WES1M	VMF	\$ 3,000	\$ 4,000	\$ 4,500	\$ 4,590	\$ 4,682	\$ 4,775	\$ 4,871
	N/FLSE COMMM	VMF	\$ 28,322	\$ 28,094	\$ -	\$ -	\$ -	\$ -	\$ -
	N/FLSE GWAMM	VMF	\$ 1,489	\$ 2,143	\$ 1,779	\$ 1,824	\$ 1,869	\$ 1,916	\$ 1,964
	N/FLSE MRKTM	VMF	\$ 8,845	\$ 9,081	\$ 10,983	\$ 11,265	\$ 11,553	\$ 11,849	\$ 12,153
	N/FLSE NDUE1	VMF	\$ 8,101	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
LLSE Total			\$ 80,079	\$ 74,412	\$ 54,152	\$ 55,504	\$ 56,891	\$ 58,312	\$ 59,769
Grand Total			\$ 134,872,213	\$ 142,823,899	\$ 122,455,422	\$ 125,656,838	\$ 124,175,284	\$ 124,313,612	\$ 124,772,070

Salt Lake City Area Integrated Projects

Purchased Power Comparisons

FY	WAPA-169 1/			FY 2016 Preliminary 2/			Expense Difference (\$1,000)
	Purchases (MWH)	Price (\$/MWH)	Expense (\$1,000)	Purchases (MWH)	Price (\$/MWH)	Expense 3/ (\$1,000)	
2016	1,030,922	\$ 27.59	28,440	450,821	\$ 26.95	\$ 12,150	\$ (16,290)
2017	609,284	\$ 29.54	18,000	558,660	\$ 27.33	\$ 15,268	\$ (2,732)
2018	518,408	\$ 31.13	16,140	410,977	\$ 30.03	\$ 12,342	\$ (3,798)
2019	490,748	\$ 33.03	16,210	410,977	\$ 30.03	\$ 12,342	\$ (3,868)
2020	N/A	N/A	4,000	410,977	\$ 30.03	\$ 12,342	\$ 8,342
2021	N/A	N/A	4,000	N/A	N/A	\$ 4,000	\$ -
2022	N/A	N/A	4,000	N/A	N/A	\$ 4,000	\$ -
2023	N/A	N/A	4,000	N/A	N/A	\$ 4,000	\$ -
2024	N/A	N/A	4,000	N/A	N/A	\$ 4,000	\$ -
2025	N/A	N/A	4,001	N/A	N/A	\$ 4,001	\$ -
Average 2016-2025			10,279	Average 2017-2025		8,033	\$ (2,246)

1/ 2016-2019 projections based on Reclamation's 2015 median hydrology.

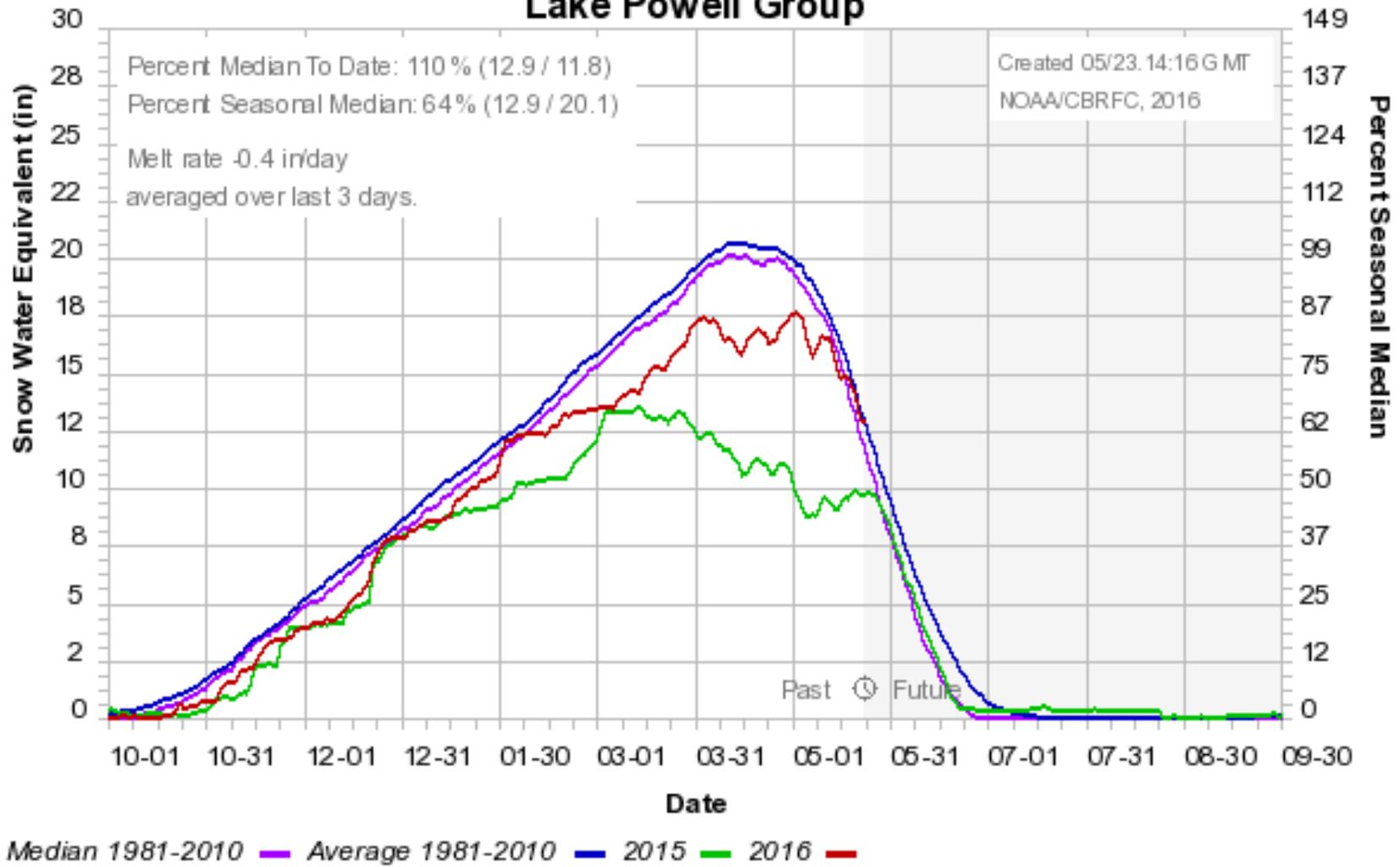
2/ 2016-2018 is based on projected costs using the April 2016 24-month study.

Data not available so carried 2018 projection into 2019-20120

2019 on included \$4 million for administrative merchant function activities.

3/ Expenses are net of sales above SHP.

Colorado Basin River Forecast Center Lake Powell Group



Salt Lake City Integrated Projects

unit: 1,000

Average Annual Transmission Expense Comparison

Item	WAPA-169 / SLIP-F10	FY 2016 Preliminary	Difference
Total Transmission Expense	\$ 10,421	\$ 10,293	\$ (128)

PROJECTED CRSP TRANSMISSION EXPENSE

Table consistently reviewed and updated. Last review April 2016

Customer	Contract Number	Contract Expiration Date	Unit	2016	2017	2018	2019	2020
DSWR (Intertie) 4/	88-BCA-10149	9/30/2017. However, CRSP MC can terminate with 30 days notice. Transmission charge is as set at the Intertie rate schedule (INT-FT4).	kW	134,000	134,000	134,000	134,000	134,000
			\$	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880	\$ 2,588,880
El Paso Electric	05-SLC-0578	9/30/2024 This is a pass-through for both rev & exp. through Holloman AFB	kW	2,000	2,000	2,000	2,000	2,000
			\$	\$ -	\$ -	\$ -	\$ -	\$ -
Empire Electric	91-SLC-0170	11/22/2041 Cost based rate revised yearly. Western pays an annual charge: 1/6 of the total each month from April to September.	kW	12,000	12,000	12,000	12,000	12,000
			\$	\$ 25,180	\$ 25,180	\$ 25,180	\$ 25,180	\$ 25,180
	7-07-40-P0752	5/15/2037 Cost based rate revised yearly. Western pays an annual charge: 1/6 of the total each month from April to September.	kW	7,666	7,666	7,666	7,666	7,666
			\$	\$ 69,429	\$ 69,429	\$ 69,429	\$ 69,429	\$ 69,429
Public Service Company of NM 6/	8-07-40-P0695	Contract expired on 6/1/1987. (Subject to 10 yr ext up to 2047) Western has option of six 10-year extensions. Western provides notice 3 years prior to the expiration of the contracts. This contract has been extended to 2017.	kW	99,000	99,000	99,000	99,000	99,000
			\$	\$ 1.37	\$ 1,627,560	\$ 1,627,560	\$ 1,627,560	\$ 1,627,560
Rate is set in contract at PNM's tariff rate. Various credits are provided for seasonal scheduling diversity and credit for Western providing 50 MW of Intertie transmission. Rate revised based on current PNM formula rate which is updated in June of each year. Currently @ \$1.37/KW-month with an avg. of 107MW for Winter and 97MW for summer giving an avg. of 99MW for the year.			\$	\$ 1,627,560	\$ 1,627,560	\$ 1,627,560	\$ 1,627,560	\$ 1,627,560

PROJECTED CRSP TRANSMISSION EXPENSE

Table consistently reviewed and updated. Last review April 2016

Customer	Contract Number	Contract Expiration Date	Unit	2016	2017	2018	2019	2020
PacifiCorp 7/ - Looked through the last years invoices. Nothing over 330MW.	14-06-400-2436	Contract expired on 6/1/1987. (Subject to 10 yr ext up to 2047) Western has option of six 10-year extensions. Western provides notice 3 years prior to the expiration of the contracts. This contract has been extended to 2017.						
		Flat Charge	\$	600,000	600,000	600,000	600,000	600,000
		First Tier	kW	230,000	230,000	230,000	230,000	230,000
			\$ 4.20	966,000	966,000	966,000	966,000	966,000
		Second Tier	kW	100,000	100,000	100,000	100,000	100,000
			\$ 15.83	1,583,000	1,583,000	1,583,000	1,583,000	1,583,000
Third Tier	kW	0	0	0	0	0		
	\$	-	-	-	-	-		
Total UP&L		kW	330,000	330,000	330,000	330,000	330,000	
		\$	3,149,000	3,149,000	3,149,000	3,149,000	3,149,000	
Salt River Project	08-SLC-0615	6/30/2018	kW	50,000	50,000	50,000	50,000	50,000
			\$	-	-	-	-	-
Total transmission expense			\$	10,292,757	10,292,757	10,292,757	10,292,757	10,292,757

- 1/ Bridger Valley wheels power @ \$.00227/kWh. Number of kWh in a year varies.
- 2/ Delta Montrose wheels power to the Montrose Operations Center @ \$27.96/kW-year (new rate 10/01/03). Since this line serves both power and transmission operations its costs are allocated between power and transmission on the same basis as O&M is allocated.
- 3/ Deseret G&T provides Western 22,048 KW to Bonanza @ \$2.22/kW-year and 118,510 kW between Bonanza and Vernal and 1,000 kW between Bonanza and UPALCO @ \$30.88/kW-year.
- 4/ 134,000 kW is wheeled between Westwing and Pinnacle Peak for SLCA/IP @ \$15.24/kW-year.
- 5/ PNM wheels from Four Corners to Albuquerque @ \$1.38 per kW/Month.

The 99000 KW represents the average of 107,000kW for the Winter and 91,000kW for the summer @\$1.30/kW-month times 12 months.

- 6/ UP&L principles for amending 2436 in effect 10-1-87 include a flat charge and a three tier rate. The charges are as follows:
 - a) \$600,000 flat charge
 - b) \$4.20/kW-year for the first 230 MW
 - c) \$15.83/kW-year for the next 100 MW
 - d) Formula PTP Rate for over 330 MW

Non-Participating Integrated Projects

Year UNIT-->	Collbran							RGP						
	Sales MWH	Revenues \$	Expenses \$	Interest \$	Repayment \$	RR \$	Surplus \$	Sales MWH	Revenues \$	Expenses \$	Interest \$	Repayment \$	RR \$	Surplus \$
1995	49,418	1,619,956	979,296	320,192	257,963	1,557,451	62,505	144,598	2,807,736	1,429,510	76,916	1,316,297	2,822,723	-14,987
1996	47,255	1,822,698	833,478	326,890	666,447	1,826,815	-4,117	97,292	2,730,425	1,370,024	6,346	1,354,054	2,730,424	1
1997	51,515	2,184,703	714,133	286,148	1,173,331	2,173,612	11,091	116,457	2,469,771	51,853	(17,779)	1,831,944	1,866,018	603,753
1998	64,534	2,122,891	773,033	48,886	1,347,654	2,169,573	-46,682	115,861	1,780,683	2,457,506	5,767	0	2,463,273	-682,590
1999	48,599	2,521,388	763,164	176,089	1,582,135	2,521,388	0	102,195	2,110,804	1,782,481	19,555	304,316	2,106,352	4,452
2000	38,889	2,361,787	921,524	146,797	1,293,457	2,361,778	9	91,607	1,710,559	1,858,839	22,026	(106,285)	1,774,580	-64,021
2001	31,196	1,846,106	978,267	110,536	757,303	1,846,106	0	96,851	1,443,003	1,163,199	16,752	299,145	1,479,096	-36,093
2002	27,246	1,364,587	1,087,012	90,374	187,201	1,364,587	0	83,625	1,797,329	1,739,513	55,269	70,281	1,865,063	-67,734
2003	26,439	1,614,561	1,081,057	95,878	437,703	1,614,638	-77	31,935	2,032,800	1,721,227	36,717	278,182	2,036,126	-3,326
2004	40,404	2,136,600	874,673	80,550	1,181,745	2,136,968	-368	27,631	2,045,939	1,611,105	57,455	109,698	1,778,258	267,681
2005	53,054	2,119,102	1,039,370	51,770	1,028,034	2,119,174	-72	45,957	1,862,960	1,998,228	(23,511)	155,925	2,130,642	-267,682
2006	48,100	2,349,819	917,640	31,200	1,400,979	2,349,819	0	33,856	1,921,691	1,906,946	86,768	0	1,993,714	-72,023
2007	44,339	2,335,119	1,029,796	10,129	1,295,194	2,335,119	0	56,003	2,700,055	1,581,069	61,000	1,002,971	2,645,040	55,015
2008	45,007	1,953,509	1,012,119	9,129	466,750	1,487,998	465,511	62,980	2,006,292	1,919,414	35,790	51,088	2,006,292	0
2009	32,000	1,567,035	909,015	(194)	1,123,724	2,032,545	-465,509	55,539	2,666,287	1,840,081	47,002	779,204	2,666,287	0
2010	37,095	2,685,104	1,006,212	9	1,678,883	2,685,104	0	67,489	1,813,739	2,204,217	7,971	(398,449)	1,813,739	0
2011	46,871	1,672,016	1,231,060	24,072	321,944	1,577,076	94,940	33,863	2,718,866	3,401,171	49,999	398,449	3,849,619	-1,130,753
2012	35,180	1,478,448	1,123,375	(1,534)	451,547	1,573,388	-94,940	28,881	4,021,042	2,548,637	76,118	1,808,321	4,433,076	-412,034
2013	13,158	1,590,619	1,040,305	(6,735)	(408,168)	624,401	966,218	9,377,318	2,341,428	2,589,615	16,190	(0)	2,605,805	-264,377
2014	41,566	960,953	1,608,925	6,257	313,989	1,927,171	-966,218	12,768	2,526,616	2,080,496	116,193	329,927	2,526,616	0
2015	37,286	1,911,997	1,074,102	158,205	679,690	1,911,997	0	37,642	2,753,699	2,901,600	108,678	0	3,010,278	-256,579
2016	58,254	2,214,265	1,711,694	144,111	358,460	2,214,265	0	122,640	2,045,635	1,838,425	119,739	87,471	2,045,635	0
2017	58,254	2,214,265	1,703,910	133,348	377,007	2,214,265	0	122,640	2,045,635	1,815,357	116,787	113,491	2,045,635	0
2018	58,254	2,214,265	1,947,094	122,038	145,133	2,214,265	0	122,640	2,045,635	1,824,744	112,509	108,382	2,045,635	0
2019	58,254	2,214,265	1,972,824	117,684	123,757	2,214,265	0	122,640	2,045,635	1,825,528	109,671	110,437	2,045,635	0
2020	58,254	2,214,265	1,985,874	113,971	114,420	2,214,265	0	122,640	2,045,635	1,826,334	107,539	111,762	2,045,635	0
2021	58,254	2,214,265	2,009,116	110,539	94,611	2,214,265	0	122,640	2,045,635	1,827,162	105,205	113,269	2,045,635	0
2022	58,254	2,214,265	2,009,116	107,700	97,449	2,214,265	0	122,640	2,045,635	1,827,162	101,961	116,512	2,045,635	0
2023	58,254	2,214,265	2,009,116	104,777	100,372	2,214,265	0	122,640	2,045,635	1,827,162	98,763	119,710	2,045,635	0
2024	58,254	2,214,265	2,009,116	101,766	103,384	2,214,265	0	122,640	2,045,635	1,827,162	95,533	122,941	2,045,635	0
2025	58,254	2,214,265	2,009,116	98,664	106,485	2,214,265	0	122,640	2,045,635	1,827,162	92,238	126,236	2,045,635	0
2026	58,254	2,214,265	2,009,116	95,470	109,680	2,214,265	0	122,640	2,045,635	1,827,162	89,010	129,464	2,045,635	0
2027	58,254	2,214,265	2,009,116	92,179	112,970	2,214,265	0	122,640	2,045,635	1,827,162	85,577	132,896	2,045,635	0
2028	58,254	2,214,265	2,009,116	88,819	116,331	2,214,265	0	122,640	2,045,635	1,827,162	83,500	134,973	2,045,635	0
2029	58,254	2,214,265	2,009,116	85,405	119,745	2,214,265	0	122,640	2,045,635	1,827,162	81,248	137,226	2,045,635	0
2030	58,254	2,214,265	2,009,116	82,432	122,717	2,214,265	0	122,640	2,045,635	1,827,162	77,300	141,174	2,045,635	0
2031	58,254	2,214,265	2,009,116	79,511	125,638	2,214,265	0	122,640	2,045,635	1,827,162	73,368	145,106	2,045,635	0
2032	58,254	2,214,265	2,009,116	75,930	129,219	2,214,265	0	122,640	2,045,635	1,827,162	69,249	149,224	2,045,635	0
2033	58,254	2,214,265	2,009,116	72,053	133,096	2,214,265	0	122,640	2,045,635	1,827,162	64,906	153,567	2,045,635	0
2034	58,254	2,214,265	2,009,116	68,061	137,089	2,214,265	0	122,640	2,045,635	1,827,162	62,835	155,639	2,045,635	0
2035	58,254	2,214,265	2,009,116	63,967	141,182	2,214,265	0	122,640	2,045,635	1,827,162	60,668	157,805	2,045,635	0
2036	58,254	2,214,265	2,009,116	59,751	145,398	2,214,265	0	122,640	2,045,635	1,827,162	55,955	162,518	2,045,635	0
2037	58,254	2,214,265	2,009,116	55,390	149,760	2,214,265	0	122,640	2,045,635	1,827,162	51,360	167,114	2,045,635	0
2038	58,254	2,214,265	2,009,116	51,124	154,025	2,214,265	0	122,640	2,045,635	1,827,162	68,265	150,209	2,045,635	0
2039	58,254	2,214,265	2,009,116	46,731	158,418	2,214,265	0	122,640	2,045,635	1,827,162	85,939	132,534	2,045,635	0
2040	58,254	2,214,265	2,009,116	41,979	163,171	2,214,265	0	122,640	2,045,635	1,827,162	84,514	133,959	2,045,635	0
2041	58,254	2,214,265	2,009,116	37,084	168,066	2,214,265	0	122,640	2,045,635	1,827,162	82,525	135,948	2,045,635	0
2042	58,254	2,214,265	2,009,116	35,114	170,036	2,214,265	0	122,640	2,045,635	1,827,162	78,447	140,027	2,045,635	0
2043	58,254	2,214,265	2,009,116	60,430	144,720	2,214,265	0	122,640	2,045,635	1,827,162	74,246	144,227	2,045,635	0
2044	58,254	2,214,265	2,009,116	83,433	121,716	2,214,265	0	122,640	2,045,635	1,827,162	69,919	148,554	2,045,635	0
2045	58,254	2,214,265	2,009,116	82,273	122,876	2,214,265	0	122,640	2,045,635	1,827,162	65,463	153,011	2,045,635	0
2046	58,254	2,214,265	2,009,116	81,078	124,072	2,214,265	0	122,640	2,045,635	1,827,162	64,630	153,843	2,045,635	0
2047	58,254	2,214,265	2,009,116	77,356	127,794	2,214,265	0	122,640	2,045,635	1,827,162	63,846	154,628	2,045,635	0
2048	58,254	2,214,265	2,009,116	73,522	131,627	2,214,265	0	122,640	2,045,635	1,827,162	59,279	159,194	2,045,635	0
2049	58,254	2,214,265	2,009,116	69,573	135,576	2,214,265	0	122,640	2,045,635	1,827,162	55,475	162,998	2,045,635	0
2050	58,254	2,214,265	2,009,116	65,506	139,644	2,214,265	0	122,640	2,045,635	1,827,162	62,509	155,965	2,045,635	0
2051	58,254	2,214,265	2,009,116	61,317	143,833	2,214,265	0	122,640	2,045,635	1,827,162	68,781	149,692	2,045,635	0
2052	58,254	2,214,265	2,009,116	57,002	148,148	2,214,265	0	122,640	2,045,635	1,827,162	64,330	154,143	2,045,635	0
2053	58,254	2,214,265	2,009,116	52,557	152,592	2,214,265	0	122,640	2,045,635	1,827,162	59,797	158,676	2,045,635	0
2054	58,254	2,214,265	2,009,116	47,979	157,170	2,214,265	0	122,640	2,045,635	1,827,162	55,088	163,386	2,045,635	0
2055	58,254	2,214,265	2,009,116	43,264	161,885	2,214,265	0	122,640	2,045,635	1,827,162	50,186	168,287	2,045,635	0
2056	58,254	2,214,265	2,009,116	43,434	161,716	2,214,265	0	122,640	2,045,635	1,827,162	45,138	173,335	2,045,635	0
2057	58,254	2,214,265	2,009,116	43,608	161,542	2,214,265	0	122,640	2,045,635	1,827,162	39,967	178,507	2,045,635	0
2058	58,254	2,214,265	2,009,116	38,762	166,388	2,214,265	0	122,640	2,045,635	1,827,162	36,082	182,391	2,045,635	0
2059	58,254	2,214,265	2,009,116	33,770	171,379	2,214,265	0	122,640	2,045,635	1,827,162	32,217	186,256	2,045,635	0
2060	58,254	2,214,265	2,009,116	28,629	176,521	2,214,265	0	122,640	2,045,635	1,827,162	26,848	191,626	2,045,635	0
2061	58,254	2,214,265	2,009,116	23,324	181,825	2,214,265	0	122,640	2,045,635	1,827,162	21,217	197,256		

Participating Projects

Year UNIT---->	Dolores							Seedskaadee						
	Sales	Revenues	Expenses	Interest	Repayment	RR	Surplus	Sales	Revenues	Expenses	Interest	Repayment	RR	Surplus
	MWH	\$	\$	\$	\$	\$	\$	MWH	\$	\$	\$	\$	\$	\$
1995	11,950	1,876,736	347,666	1,340,258	188,813	1,876,737	-1	52,322	1,424,991	504,249	(438,442)	1,360,841	1,426,648	-1,657
1996	18,923	2,920,220	426,124	2,297,879	196,217	2,920,220	0	66,451	1,217,656	394,596	538,407	13,857	946,860	270,796
1997	9,052	3,084,638	469,106	2,210,948	446,717	3,126,771	-42,133	66,024	1,206,283	392,247	536,887	277,982	1,207,116	-833
1998	17,337	2,911,559	178,317	2,484,812	164,256	2,827,385	84,174	74,063	2,248,405	384,985	470,580	1,392,442	2,248,007	398
1999	21,373	3,235,465	238,424	2,360,057	636,984	3,235,465	0	70,862	1,510,537	303,630	234,116	887,112	1,424,858	85,679
2000	28,127	2,894,923	269,973	2,269,738	355,212	2,894,923	0	59,144	1,384,025	413,142	236,187	767,744	1,417,073	-33,048
2001	23,456	2,766,549	432,606	2,449,206	0	2,881,812	-115,263	27,335	937,996	445,909	188,663	402,868	1,037,440	-99,444
2002	5,959	2,948,763	335,235	2,306,448	307,080	2,948,763	0	22,579	1,301,665	398,287	153,559	778,599	1,330,445	-28,780
2003	6,294	2,874,934	392,962	2,260,611	221,246	2,874,819	115	38,252	1,124,598	463,975	33,965	626,659	1,124,599	-1
2004	17,885	2,988,795	251,627	2,237,649	499,634	2,988,910	-115	42,331	1,014,123	639,547	1,378	373,199	1,014,124	-1
2005	20,005	2,921,844	399,570	2,179,516	342,758	2,921,844	0	63,356	1,154,975	621,122	9,269	510,308	1,140,699	14,276
2006	15,431	2,845,475	213,197	2,151,507	480,771	2,845,475	0	47,027	1,705,213	674,556	(8,638)	307,231	975,151	730,062
2007	8,249	2,959,291	207,826	2,096,781	654,684	2,959,291	0	37,494	1,082,246	702,400	(3,969)	(282,000)	406,431	675,815
2008	24,028	2,784,627	539,065	2,025,898	219,664	2,784,627	0	45,688	1,184,425	680,755	3,870	26,155	710,780	473,645
2009	19,152	3,214,372	446,834	2,169,152	598,386	3,214,372	0	55,245	(408,052)	601,098	(319)	(12,790)	587,989	-996,841
2010	18,391	3,850,995	800,106	2,090,005	960,884	3,850,995	0	34,348	929,572	673,746	187	1,152,596	1,826,529	-896,957
2011	21,019	3,158,541	1,010,691	2,189,874	0	3,200,565	-42,024	52,076	1,389,147	999,594	(31,308)	41,816	1,010,102	379,045
2012	19,660	3,328,365	2,355	2,019,915	1,304,912	3,327,182	1,183	53,693	455,410	918,833	(3,399)	(80,379)	834,455	-379,045
2013	9,545	3,047,401	862,788	1,829,803	333,875	3,026,466	20,935	33,461	3,002,908	931,825	2,673	318,497	1,252,995	1,749,913
2014	20,297	3,067,909	416,411	1,930,353	701,239	3,048,003	19,906	55,659	1,136,350	934,423	184,921	0	1,119,344	17,006
2015	20,253	8,061,201	4,989,415	1,798,702	1,273,084	8,061,201	0	71,781	1,384,595	920,683	(11,758)	368,989	1,277,913	106,682
2016	53,169	2,914,739	706,220	1,741,892	466,627	2,914,739	0	41,610	1,599,905	1,050,034	(2,935)	480,000	1,532,099	67,806
2017	53,169	2,914,739	727,944	1,764,414	422,381	2,914,739	0	41,610	1,599,905	1,084,433	6,726	508,745	1,599,905	0
2018	53,169	2,914,739	810,072	1,740,518	364,148	2,914,739	0	41,610	1,599,905	1,490,996	26,408	82,500	1,599,905	0
2019	53,169	2,914,739	833,634	1,718,485	362,620	2,914,739	0	41,610	1,599,905	1,283,027	84,156	232,722	1,599,905	0
2020	53,169	2,914,739	857,898	1,696,569	360,272	2,914,739	0	41,610	1,599,905	1,214,914	128,701	256,289	1,599,905	0
2021	53,169	2,914,739	882,885	1,674,821	357,033	2,914,739	0	41,610	1,599,905	1,266,833	185,827	147,245	1,599,905	0
2022	53,169	2,914,739	882,885	1,652,517	379,336	2,914,739	0	41,610	1,599,905	1,266,833	241,450	91,621	1,599,905	0
2023	53,169	2,914,739	882,885	1,628,821	403,033	2,914,739	0	41,610	1,599,905	1,266,833	238,020	95,052	1,599,905	0
2024	53,169	2,914,739	882,885	1,603,644	428,209	2,914,739	0	41,610	1,599,905	1,266,833	236,169	96,903	1,599,905	0
2025	53,169	2,914,739	882,885	1,605,959	425,894	2,914,739	0	41,610	1,599,905	1,266,833	234,229	98,842	1,599,905	0
2026	53,169	2,914,739	882,885	1,608,419	423,434	2,914,739	0	41,610	1,599,905	1,266,833	229,502	103,569	1,599,905	0
2027	53,169	2,914,739	882,885	1,581,968	449,886	2,914,739	0	41,610	1,599,905	1,266,833	224,622	108,449	1,599,905	0
2028	53,169	2,914,739	882,885	1,553,865	477,989	2,914,739	0	41,610	1,599,905	1,266,833	226,204	106,867	1,599,905	0
2029	53,169	2,914,739	882,885	1,524,006	507,848	2,914,739	0	41,610	1,599,905	1,266,833	232,405	100,667	1,599,905	0
2030	53,169	2,914,739	882,885	1,493,858	537,996	2,914,739	0	41,610	1,599,905	1,266,833	232,311	100,761	1,599,905	0
2031	53,169	2,914,739	882,885	1,461,827	570,027	2,914,739	0	41,610	1,599,905	1,266,833	227,596	105,475	1,599,905	0
2032	53,169	2,914,739	882,885	1,426,218	605,635	2,914,739	0	41,610	1,599,905	1,266,833	222,552	110,519	1,599,905	0
2033	53,169	2,914,739	882,885	1,388,385	643,468	2,914,739	0	41,610	1,599,905	1,266,833	221,860	111,212	1,599,905	0
2034	53,169	2,914,739	882,885	1,348,189	683,665	2,914,739	0	41,610	1,599,905	1,266,833	221,134	111,938	1,599,905	0
2035	53,169	2,914,739	882,885	1,305,482	726,372	2,914,739	0	41,610	1,599,905	1,266,833	215,781	117,291	1,599,905	0
2036	53,169	2,914,739	882,885	1,260,107	771,747	2,914,739	0	41,610	1,599,905	1,266,833	210,404	122,667	1,599,905	0
2037	53,169	2,914,739	882,885	1,215,112	816,741	2,914,739	0	41,610	1,599,905	1,266,833	204,770	128,301	1,599,905	0
2038	53,169	2,914,739	882,885	1,167,528	864,326	2,914,739	0	41,610	1,599,905	1,266,833	198,676	134,395	1,599,905	0
2039	53,169	2,914,739	882,885	1,113,561	918,293	2,914,739	0	41,610	1,599,905	1,266,833	192,291	140,781	1,599,905	0
2040	53,169	2,914,739	882,885	1,056,197	975,657	2,914,739	0	41,610	1,599,905	1,266,833	192,254	140,818	1,599,905	0
2041	53,169	2,914,739	882,885	1,030,692	1,001,162	2,914,739	0	41,610	1,599,905	1,266,833	192,795	140,277	1,599,905	0
2042	53,169	2,914,739	882,885	1,005,480	1,026,374	2,914,739	0	41,610	1,599,905	1,266,833	199,787	133,284	1,599,905	0
2043	53,169	2,914,739	882,885	943,268	1,088,586	2,914,739	0	41,610	1,599,905	1,266,833	210,309	122,763	1,599,905	0
2044	53,169	2,914,739	882,885	876,728	1,155,125	2,914,739	0	41,610	1,599,905	1,266,833	214,566	118,505	1,599,905	0
2045	53,169	2,914,739	882,885	807,137	1,224,717	2,914,739	0	41,610	1,599,905	1,266,833	215,253	117,819	1,599,905	0
2046	53,169	2,914,739	882,885	733,727	1,298,127	2,914,739	0	41,610	1,599,905	1,266,833	209,618	123,453	1,599,905	0
2047	53,169	2,914,739	882,885	651,901	1,379,952	2,914,739	0	41,610	1,599,905	1,266,833	204,244	128,828	1,599,905	0
2048	53,169	2,914,739	882,885	566,772	1,465,081	2,914,739	0	41,610	1,599,905	1,266,833	198,613	134,459	1,599,905	0
2049	53,169	2,914,739	882,885	478,570	1,553,283	2,914,739	0	41,610	1,599,905	1,266,833	193,340	139,731	1,599,905	0
2050	53,169	2,914,739	882,885	384,897	1,646,957	2,914,739	0	41,610	1,599,905	1,266,833	187,815	145,256	1,599,905	0
2051	53,169	2,914,739	882,885	282,068	1,749,786	2,914,739	0	41,610	1,599,905	1,266,833	181,021	152,051	1,599,905	0
2052	53,169	2,914,739	882,885	177,162	1,854,691	2,914,739	0	41,610	1,599,905	1,266,833	180,597	152,474	1,599,905	0
2053	53,169	2,914,739	882,885	82,079	1,949,775	2,914,739	0	41,610	1,599,905	1,266,833	180,001	153,071	1,599,905	0
2054	53,169	2,914,739	882,885	17,741	1,860,596	2,761,222	153,516	41,610	1,599,905	1,266,833	172,681	160,391	1,599,905	0
2055	53,169	2,914,739	882,885	0	0	882,885	2,031,854	41,610	1,599,905	1,266,833	170,579	162,493	1,599,905	0
2056	53,169	2,914,739	882,885	0	0	882,885	2,031,854	41,610	1,599,905	1,266,833	168,377	164,695	1,599,905	0
2057	53,169	2,914,739	882,885	0	0	882,885	2,031,854	41,610	1,599,905	1,266,833	170,928	162,144	1,599,905	0
2058	53,169	2,914,739	882,885	0	0	882,885	2,031,854	41,610	1,599,905	1,266,833	173,601	159,470	1,599,905	0
2059	53,169	2,914,739	882,885	0	23,921	906,806	2,007,933	41,610	1,599,905	1,266,833	168,670	164,402	1,599,905	0
2060	53,169	2,914,739	882,885	0	34,061	916,946	1,997,793	41,610	1,599,905	1,266,833	163,797	169,275	1,599,905	0
2061	53,169	2,914,739	882,885	0	106,045	988,930	1,925,808	41,610	1,599,905	1,266,833	156,491	176,581		

COLORADO RIVER BASIN SALINITY CONTROL PROGRAM TITLE II
Upper Colorado River Basin Fund
As of 9/30/2015

A Fiscal Year	B-G Up-front Cost Sharing							I Total Repayment Transfer to Treasury	J Total Annual Requirement
	B Paradox Valley O&M	C Grand Valley O&M	D McElmo Creek (Dolores) O&M	E Lower Gunnison O&M	F Basinwide SCP	G USDA NRCS BSP	H Total Transfer to UC Region		
1987								6,918	6,918
1988								90,088	90,088
1989								110,531	110,531
1990								156,936	156,936
1991								200,047	200,047
1992								301,475	301,475
1993								451,325	451,325
1994								357,687	357,687
1995								1,934,454	1,934,454
1996								2,750,148	2,750,148
1997					222,505	(254,648)	0	285,643	253,500
1998	65,752	126,103	\$26,036	25,622	487,341	131,146	862,000	135,666	997,666
1999	80,561	50,013	21,423	17,195	803,533	244,275	1,217,000	87,604	1,304,604
2000	122,523	42,997	17,817	20,513	773,201	1,611,949	2,589,000	0	2,589,000
2001	104,192	25,425	19,707	20,202	693,579	(863,105)	0	0	0
2002	97,249	49,402	14,879	11,045	738,660	318,765	1,230,000	0	1,230,000
2003	73,375	42,882	23,278	(161)	549,268	271,358	960,000	0	960,000
2004	88,788	37,100	21,859	(89)	613,687	1,200,655	1,962,000	0	1,962,000
2005	95,089	32,359	27,996		529,948	1,256,756	1,942,148	0	1,942,148
2006	90,822	45,863	33,206		544,650	1,469,355	2,183,896	0	2,183,896
2007	98,721	50,252	18,809		574,676 1/	3,274,556	4,017,014 2/	0	4,017,014
2008	135,786	42,183	25,118		513,236	(2,541,323)	(1,825,000)	0	(1,825,000)
2009	117,029	65,919	27,105		1,110,870	4,725,077	6,046,000	0	6,046,000
2010	141,167	38,278	30,396		430,984	1,289,302	1,930,127	0	1,930,127
2011	137,250	51,500	22,114		545,989	801,982	1,558,835	0	1,558,835
2012	121,350	48,336	21,592		533,448	861,682	1,586,408	0	1,586,408
2013	117,199	56,644	25,341		557,908	930,508	1,687,600	0	1,687,600
2014	131,600	70,700	21,536		450,964	1,603,400	2,278,200	0	2,278,200
2015	212,622	94,100	44,293		639,793	1,009,181	1,999,989	0	1,999,989
Subtotal	1,818,453	875,956	398,212	94,327	10,674,447	16,331,690	30,193,085	6,868,522	37,061,607
2016	168,800	110,450	35,679		541,479	835,714	1,692,122	0	1,692,122
2017	175,000	75,550	25,714		524,700	771,429	1,572,393	0	1,572,393
2018	137,500	75,550	25,000		500,000	580,000	1,318,050	0	1,318,050
2019	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2020	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2021	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2022	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2023	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2024	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2025	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2026	138,000	75,550	25,000		500,000	580,000	1,318,550	1,384,314	2,702,864
2027	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2028	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2029	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2030	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2031	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2032	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2033	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2034	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2035	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2036	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2037	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2038	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2039	138,000	75,550	25,000		500,000	580,000	1,318,550	3,200,008	4,518,558
2040	138,000	75,550	25,000		500,000	580,000	1,318,550	64,747	1,383,297
2041	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2042	138,000	75,550	25,000		500,000	580,000	1,318,550	347,605	1,666,155
2043	138,000	75,550	25,000		500,000	580,000	1,318,550	158,454	1,477,004
2044	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2045	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
2046	138,000	75,550	25,000		500,000	580,000	1,318,550	1,071,189	2,389,739
2047	138,000	75,550	25,000		500,000	580,000	1,318,550	1,919,584	3,238,134
2048	138,000	75,550	25,000		500,000	580,000	1,318,550	0	1,318,550
Total	6,439,753	3,404,006	1,234,605	94,327	27,240,626	35,918,833	106,525,223	15,014,423	128,408,168

1/ In FY2003 \$1,103,000 was transferred from the Upper Basin Fund, but was not transferred into the Salinity Program until FY 2007.

The total amount was accounted for in the Basinwide Program portion.

2/ The actual amount transferred from the Upper Basin Fund to the UC Region for the Salinity Program was \$2,038,000, of which \$573,000 was for the Basinwide Program. Please see footnote 1/ for the explanation of the difference.

Unfunded Benefits

CRSP

	FERS			FERS TOTAL	CSRS			CSRS TOTAL	TOTAL (FERS+CSRS)
	JJCR	GGCR	LLCR		JJCR	GGCR	LLCR		
2011	133,612	50,658	44,354	228,624	268,390	112,946	112,849	494,185	722,809
2012	105,572	47,284	38,591	191,447	219,125	98,178	110,926	428,229	619,676
2013	99,807	44,369	39,062	183,238	179,272	82,306	104,690	366,268	549,506
2014	180,385	61,364	70,598	312,347	132,029	46,837	77,101	255,967	568,314
2015	130,280	42,348	45,152	217,780	156,931	46,568	100,329	303,828	521,608
5YR AVG	129,931	49,205	47,551	226,687	191,149	77,367	101,179	369,695	596,383

Other Integrated and Participating Projects

	Collbran			Dolores			Rio Grande			Seedskaadee		
	FERS	CSRS	Total									
2011	62.19	158.23	220.42	62.19	158.23	220.42	62.19	158.23	220.42	87.06	221.48	308.54
2012	44.19	127.03	171.22	44.19	127.03	171.22	44.19	127.03	171.22	61.87	177.85	239.72
2013	45.78	122.70	168.48	45.78	122.70	168.48	45.78	122.70	168.48	64.10	171.78	235.88
2014	82.74	90.37	173.11	82.74	90.37	173.11	82.74	90.37	173.11	115.84	126.51	242.35
2015	52.91	117.56	170.47	52.91	117.56	170.47	52.91	117.56	170.47	21.16	47.03	68.19
5YR AVG	57.56	123.18	180.74	57.56	123.18	180.74	57.56	123.18	180.74	70.01	148.93	218.94

Aid to Irrigation data for the FY 2015 CRSP PRS

Aid to irrigation 1/

Irrigation allocation		108,649,187
Less other credits:		
Contributions		257,691
CRDF		118,265
Non-reimbursable		
Due from surplus power & M&I for 2015		<u>108,273,231</u>
Due from surplus power & M&I for 2014		<u>107,589,788</u>
Increase for FY 2015 (goes in PRS IFI)		<u>683,443</u>
M&I payments through 2015		19,763,135
M&I payments through 2014		17,134,339
FY15 Increase to Surplus M&I Revenues for PRS		<u>2,628,796</u>
Anticipated power repayment		<u>88,510,096</u>

Aid to Part Proj Irr

Construction	2/	770,299,000
Apportionment	3/	<u>297,622,000</u>
Total	FY 2015	<u>1,067,921,814</u>
	FY 2014	<u>1,095,061,070</u>
	FY 2015 increase for PRS	<u>(27,139,256)</u>

Total Non-power (2015) for SOR

2015	1,156,431,910
2014 /4	1,185,516,519
Increase	<u>(29,084,609)</u>

1/ Based on the 2014 SPCCR.

2/ Based on the USBR FY 2014 (58th Annual Report) revenues required by Basin States for irrigation assistance. From Mike Loring (Malcolm Wilson)

3/ Based on the apportionment table.

4/ Based on the 2014 SOR.

ENTERED IN PRS

ENTERED IN SOR

Colorado River Storage Project (Initial Units) Irrigation

SPCCR for FY 2014

	Schedule	0622 Aspinall	0591 Flaming	0557 Glen	0594 O&M	0711 Navajo	0864 Trans	Total
<u>Costs</u>								
Multipurpose Land and Rights (SGL 1711)	A	1,415,126	2,730,057	2,940,104		3,855,874		10,941,161
Plant in Service (SGL 1740)	A	1,744,469	13,967,461	49,620,899		26,691,559		92,024,388
Property Transfers	B	18,779	1,728,356	2,249,103				3,996,238
Expensed	B					52,429		52,429
Non-reimbursable	B							-
Retirements and Abandoned Plant	B		18,510	1,599,722		16,739		1,634,971
Transfer to Western	B							-
IDC Multipurpose	D							-
IDC Power	D							-
IDC Transferred to Western	D							-
Total Costs		3,178,374	18,444,384	56,409,828	-	30,616,601	-	108,649,187
<u>Repayment</u>								
Contributions	E	3,451	142,562	111,678				257,691
CRDF	E	9,305	34,398	18,842		55,720		118,265
Western	E							-
Surplus M&I Applied to Repayment	E		19,763,135					19,763,135
Future Power Repayment	F	3,195,812	(1,475,711)	60,694,131		30,826,587		93,240,819
Total Repayment		3,208,568	18,464,384	60,824,651	-	30,882,307	-	113,379,910

Salt Lake City Area Integrated Projects
 Irrigation Cumulative Repayment Obligations Comparisons
 Unit: \$1,000

Item	WAPA-169	FY 2015 Preliminary	2/	Difference
Aid to Main-stem Irrigation	107,590	108,273	2/	683
Aid to Participating Projects Irrigation: 1/				
Construction	778,431	770,299		(8,132)
Apportionment	316,630	297,622		(19,008)
Total aid to Participating Projects	1,095,061	1,067,921	2/	(27,140)

1/ Includes only projects meeting the criteria of the 1983 CREDA agreement. Increase in construction mostly due to revision to cost allocations for Utah's Bonneville Unit. Decrease in apportionment due to MOA between BOR, WAPA, Upper Basin States & CREDA.

2/ Totals are equal to Historical Subtotals for Principle Payment plus Unpaid Balance in the Executive Summary

Colorado River Storage Project

Aid to Participating Projects Irrigation Repayment Obligations and Apportioned Revenues Applied

FY 2015 PRS

Unit: \$ 1,000

year	Colorado 46%				New Mexico 17%				Utah 21.5%				Wyoming 15.5%				Total			
	Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative		Incremental		Cumulative	
	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor	Obligation	Available W/Appor
2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2016	-	3,961	-	3,961	-	1,464	-	1,464	8,610	1,851	8,610	1,851	-	1,335	-	1,335	8,610	8,610	8,610	8,610
2017	3,192	2,017	3,192	5,977	-	745	-	2,209	-	943	8,610	2,794	1,192	680	1,192	2,014	4,384	4,384	12,994	12,994
2018	-	-	3,192	5,977	-	-	-	2,209	-	-	8,610	2,794	-	-	1,192	2,014	-	-	12,994	12,994
2019	-	-	3,192	5,977	-	-	-	2,209	-	-	8,610	2,794	-	-	1,192	2,014	-	-	12,994	12,994
2020	-	2,941	3,192	8,918	-	1,087	-	3,296	6,393	1,374	15,003	4,168	-	991	1,192	3,005	6,393	6,393	19,387	19,387
2021	13,651	6,279	16,843	15,197	-	2,321	-	5,616	-	2,935	15,003	7,103	-	2,116	1,192	5,121	13,651	13,651	33,038	33,038
2022	-	-	16,843	15,197	-	-	-	5,616	-	-	15,003	7,103	-	-	1,192	5,121	-	-	33,038	33,038
2023	-	10,886	16,843	26,084	23,666	4,023	23,666	9,640	-	5,088	15,003	12,191	-	3,668	1,192	8,789	23,666	23,666	56,704	56,704
2024	-	-	16,843	26,084	-	-	23,666	9,640	-	-	15,003	12,191	-	-	1,192	8,789	-	-	56,704	56,704
2025	-	46,259	16,843	72,342	-	17,096	23,666	26,735	100,562	21,621	115,565	33,812	-	15,587	1,192	24,376	100,562	100,562	157,266	157,266
2026	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157,266	157,266
2027	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157,266	157,266
2028	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	157,266	157,266
2029	5,483	37,031	5,483	37,031	-	13,686	-	13,686	-	17,308	-	17,308	12,478	12,478	12,478	12,478	17,961	80,503	175,227	237,769
2030	-	-	5,483	37,031	-	-	-	13,686	-	-	-	17,308	-	-	12,478	12,478	-	-	175,227	237,769
2031	-	-	5,483	37,031	-	-	-	13,686	-	-	-	17,308	-	-	12,478	12,478	-	-	175,227	237,769
2032	-	-	5,483	37,031	7,658	-	7,658	13,686	-	-	-	17,308	-	-	12,478	12,478	7,658	-	182,885	237,769
2033	-	-	5,483	37,031	-	-	7,658	13,686	-	-	-	17,308	-	-	12,478	12,478	-	-	182,885	237,769
2034	-	-	5,483	37,031	-	-	7,658	13,686	5,005	-	5,005	17,308	-	-	12,478	12,478	5,005	-	187,890	237,769
2035	-	70,415	5,483	107,447	-	26,023	7,658	39,709	-	32,912	5,005	50,220	23,727	23,727	36,205	36,205	23,727	153,077	211,617	390,846
2036	-	-	5,483	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	211,617	390,846
2037	-	-	5,483	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	211,617	390,846
2038	50,534	-	56,017	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	50,534	-	262,151	390,846
2039	-	-	56,017	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	262,151	390,846
2040	5,164	-	61,181	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	5,164	-	267,315	390,846
2041	-	-	61,181	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	267,315	390,846
2042	4,736	-	65,917	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	4,736	-	272,051	390,846
2043	-	-	65,917	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	272,051	390,846
2044	-	-	65,917	107,447	-	-	7,658	39,709	-	-	5,005	50,220	-	-	36,205	36,205	-	-	272,051	390,846
2045	101,967	60,438	167,884	167,884	-	22,336	7,658	62,044	-	28,248	5,005	78,468	-	20,365	36,205	56,570	101,967	131,386	374,018	522,232
2046	-	-	167,884	167,884	-	-	7,658	62,044	-	-	5,005	78,468	-	-	36,205	56,570	-	-	374,018	522,232
2047	-	-	167,884	167,884	-	-	7,658	62,044	-	-	5,005	78,468	-	-	36,205	56,570	-	-	374,018	522,232
2048	78,644	78,644	246,528	246,528	-	29,064	7,658	91,108	-	36,757	5,005	115,225	-	26,500	36,205	83,069	78,644	170,965	452,662	693,197
2049	23,301	23,301	269,829	269,829	-	8,611	7,658	99,719	-	10,891	5,005	126,116	-	7,851	36,205	90,921	23,301	50,654	475,963	743,851
2050	-	-	269,829	269,829	-	-	7,658	99,719	70,957	-	75,962	126,116	-	-	36,205	90,921	70,957	-	546,920	743,851
2051	-	-	269,829	269,829	-	-	7,658	99,719	-	-	75,962	126,116	-	-	36,205	90,921	-	-	546,920	743,851
2052	80,847	80,847	350,676	350,676	-	29,878	7,658	129,598	-	37,787	75,962	163,903	-	27,242	36,205	118,163	80,847	175,754	627,767	919,605
2053	-	-	350,676	350,676	-	-	7,658	129,598	-	-	75,962	163,903	-	-	36,205	118,163	-	-	627,767	919,605
2054	-	12,929	350,676	363,605	-	4,778	7,658	134,376	93,984	6,043	169,946	169,946	-	4,357	36,205	122,519	93,984	28,107	721,751	947,712
2055	-	30,161	350,676	393,766	-	11,146	7,658	145,522	14,097	14,097	184,043	184,043	-	10,163	36,205	132,682	14,097	65,567	735,848	1,013,279
2056	-	-	350,676	393,766	-	-	7,658	145,522	-	-	184,043	184,043	-	-	36,205	132,682	-	-	735,848	1,013,279
2057	22,703	25,135	373,379	418,901	-	9,289	7,658	154,811	11,748	11,748	195,791	195,791	-	8,470	36,205	141,152	34,451	54,642	770,299	1,067,921
2058	-	-	373,379	418,901	-	-	7,658	154,811	-	-	195,791	195,791	-	-	36,205	141,152	-	-	770,299	1,067,921
2059	-	-	373,379	418,901	-	-	7,658	154,811	-	-	195,791	195,791	-	-	36,205	141,152	-	-	770,299	1,067,921
2060	-	-	373,379	418,901	-	-	7,658	154,811	-	-	195,791	195,791	-	-	36,205	141,152	-	-	770,299	1,067,921
Total	390,222	491,244			31,324	181,547			311,356	229,603			37,397	165,528			770,299	1,067,921		

Note: Boxed yellow amounts trigger apportionment. Boxed green amounts indicate total available with apportionment. Boxed blue amounts indicate apportionment under MOA agreement

REVENUES REQUIRED BY THE UPPER COLORADO RIVER BASIN STATES
FOR IRRIGATION ASSISTANCE OF PARTICIPATING PROJECTS
USING FULL 50-YEAR REPAYMENT PERIOD FOR EACH BLOCK

Fiscal Year 2014 - 58th Annual Report
(Units = \$1,000)

Fiscal Year	Colorado		New Mexico		Utah		Wyoming		Total of Four States
	Project or Block	Amount Required	Project or Block	Amount Required	Project or Block	Amount Required	Project or Block	Amount Required	
2016					Vernal Unit	8,610			8,610
2017	Smith Fork	3,192					Seedskadee	1,192	4,384
2020					Emery County	6,393			6,393
2021	Florida	7,710							7,710
2021	Silt	5,941							5,941
2023			San Juan-Chama 1	23,666					23,666
2025					Duchesne	100,562			100,562
2029	Bostwick Park	5,483					Eden	12,478	17,961
2032			San Juan-Chama 2	1,021					1,021
2032			Hammond	6,637					6,637
2034					Jensen Unit	5,005			5,005
2035							Lyman	23,727	23,727
2038	Dolores 1	50,534							50,534
2040	Paonia	5,164							5,164
2042	Dallas Creek	4,736							4,736
2045	Dolores 4	101,967							101,967
2048	Dolores 6	78,644							78,644
2049	Dolores 7	23,301							23,301
2050					Heber-Francis	70,957			70,957
2052	Dolores 8	80,847							80,847
2054					Utah County	93,984			93,984
2055					Starvation Reservoir	14,097			14,097
2057	Animas-La Plata 1/	22,703			UBRP	11,748			34,451
SUBTOTAL:		390,222		31,324		311,356		37,397	770,299
2110	Fruitland Mesa				Uintah Unit		Savery-Pot Hook		
2110	West Divide				Upalco Unit		LaBarge		
2110	San Miguel								
2110	Savery-Pot Hook								
SUBTOTAL: 2/		0		0		0		0	0
TOTAL:		390,222		31,324		311,356		37,397	770,299

1/ Legal waiver of assistance for irrigation investigation costs still not available. Timing dated 50 years from construction completion estimated at year 2007.

2/ Apportioned revenues associated with those projects indefinitely deferred pursuant to the 1983 CREDA Agreement.

Salt Lake City Integrated Projects

unit: 1,000

Average Annual Transmission Revenue Comparison

Item	WAPA-169 / SLIP-F10	FY 2016 Preliminary	Difference
Total Transmission Revenue	\$ 16,357	\$ 18,292	\$ 1,935

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table constantly reviewed and updated. Last review April 2016

Customer	Contract Number	Contract Expiration Date	R--> Unit	\$1.49					
					2016	2017	2018	2019	2020
Firm Wheeling Contracts									
APS		6/1/2046	kW		150,000	150,000	150,000	150,000	150,000
	14-06-400-3654		\$		\$	\$	\$	\$	\$
APS Network contract	09-SLC-0628	12/31/2020	kW		56,234	56,234	56,234	56,234	56,234
			\$	varies	\$ 807,745	\$ 807,745	\$ 807,745	\$ 807,745	\$ 807,745
Basin Electric Power Cooperation	15-SLC-0707	10/31/2015	kW		20,000	20,000	20,000	20,000	20,000
			\$	\$1.49	\$ 357,600	\$ 357,600	\$ 357,600	\$ 357,600	\$ 357,600
Black Hills/Colorado Electric Utility Company, LP Network contract	11-SLC-0661	12/31/2022	kW		14,420	14,420	14,420	14,420	14,420
			\$	varies	\$ -	\$ -	\$ -	\$ -	\$ -
CRSP Energy Mngt. & Mktg Office (EMMO)	07-SLC-0610 - 1507 MW	9/30/2024	kW		3,513,000	3,513,000	3,513,000	3,513,000	3,513,000
	98-SLC-0372 - 130MW								
	00-SLC-0439 - 440MW								
	11-SLC-0659 - 1436MW	9/30/2024	\$	\$1.49	\$ -	\$ -	\$ -	\$ -	\$ -
Delta Montrose Electric Assoc.	99-SLC-0407	3/31/2008	kW		20	20	20	20	20
			\$	\$1.49	\$ 358	\$ 358	\$ 358	\$ 358	\$ 358
Deseret G&T (Exhibit B)	2-07-40-P0716	6/1/2022	kW		129,000	129,000	129,000	129,000	129,000
	New Exhibit - Rev. 8 effec. 10/1/13 thru 9/30/16	Can be terminated w/5yrs prior notice	\$	\$1.49	\$ 2,306,520	\$ 2,306,520	\$ 2,306,520	\$ 2,306,520	\$ 2,306,520
Farmington, NM			kW		100,000	100,000	100,000	100,000	100,000
	3-07-40-P0715	6/30/2022	Per Yr Charg						
			\$	\$1.975	\$ 197,500	\$ 197,500	\$ 197,500	\$ 197,500	\$ 197,500
Fredonia, AZ 3/ Network contract	08-SLC-0620	9/30/2028	kW		1,688	1,688	1,688	1,688	1,688
		Can be terminated w/5yrs prior notice	\$	varies	\$ 24,246	\$ 24,246	\$ 24,246	\$ 24,246	\$ 24,246

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table consistently reviewed and updated. Last review April 2016

Customer	Contract Number	Contract Expiration Date	R--> Unit	\$1.49	2016	2017	2018	2019	2020
Holloman Air Force Base 2/ \$2.42/kWh = \$2.31 + .07Ans. Svs + .04 Sch. 2 Chg.	05-SLC-0578	9/30/2024	kW		2,000	2,000	2,000	2,000	2,000
			\$	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Los Alamos County	14-RMR-2495	9/30/2024	kW		10,000	10,000	10,000	10,000	10,000
			\$	\$1.49	\$ 178,800	\$ 178,800	\$ 178,800	\$ 178,800	\$ 178,800
Municipal Energy Agency of NE 3/ Network contract	12-RMR-2321	9/30/2022	kW		4,800	4,800	4,800	4,800	4,800
			\$	varies	\$ 68,950	\$ 68,950	\$ 68,950	\$ 68,950	\$ 68,950
Municipal Energy Agency of NE	13-RMR-2411	5/1/2019	kW		2,000	2,000	2,000	2,000	2,000
			\$	\$1.49	\$ 35,760	\$ 35,760	\$ 35,760	\$ 35,760	\$ 35,760
Navajo Tribal Utility Authority 4/	14-06-400-4537	6/1/2023	kW		0	0	0	0	0
			\$	\$1.49	\$ -	\$ -	\$ -	\$ -	\$ -
PacifiCorp/APS	94-SLC-0276	5/31/2022	kW		250,000	250,000	250,000	250,000	250,000
			\$	\$1.49	\$ 4,470,000	\$ 4,470,000	\$ 4,470,000	\$ 4,470,000	\$ 4,470,000
Page, City of 3/ Network contract	12-DSR-12368	12/31/2022	kW		5,983	5,983	5,983	5,983	5,983
			\$	varies	\$ 85,937	\$ 85,937	\$ 85,937	\$ 85,937	\$ 85,937
Public Service Company of New Mexico 1/ (Rate established by Farmington's Transformation)	06-SLC-0586	6/30/2016	Per Yr Chg		10,000	0	0	0	0
			\$	\$1.975	\$ 177,750	\$ -	\$ -	\$ -	\$ -
Salt River Project (OATT)	09-SLC-0641	12/31/2015	kW		9,000	9,000	9,000	9,000	9,000
			\$	\$1.49	\$ 160,920	\$ 160,920	\$ 160,920	\$ 160,920	\$ 160,920
Tri-State G&T	03-SLC-0503	10/28/2037	kW		100,000	100,000	100,000	100,000	100,000
			\$	\$1.49	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000
Tri-State G&T (Colorado-Ute)	91-SLC-0178	9/30/2053	kW		100,000	100,000	100,000	100,000	100,000
			\$	\$1.49	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000	\$ 1,788,000
Deseret	12-RMR-2324	12/31/2017	kW		6,000	6,000	6,000	6,000	6,000
			\$	\$1.49	\$ 107,280	\$ 107,280	\$ 107,280	\$ 107,280	\$ 107,280
Total Firm Wheeling Revenues			kW		4,493,145	4,483,145	4,483,145	4,483,145	4,483,145
			\$	\$1.49	\$ 12,555,366	\$ 12,377,616	\$ 12,377,616	\$ 12,377,616	\$ 12,377,616

PROJECTED CRSP FIRM AND NON-FIRM WHEELING AND EXCHANGE REVENUE

Table consistently reviewed and updated. Last review April 2016

Customer	Contract Number	Contract Expiration Date	R--> Unit	\$1.49					
					2016	2017	2018	2019	2020
Exchange Contracts									
Salt River Project	14-06-400-2468	9/30/2024	kW		250,000	250,000	250,000	250,000	250,000
			\$	Set	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500
			kW		0	0	0	0	0
			\$	\$1.49	\$ -	\$ -	\$ -	\$ -	\$ -
Salt River Project	08-SLC-0615	6/30/2018	kW		25,000	25,000	25,000	25,000	25,000
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
Navajo Tribal Utility Authority	14-06-400-4537	6/1/2023	kW		30,000	30,000	30,000	30,000	30,000
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
Public Service Company of New Mexico	14-06-400-2425	6/1/2047	kW		84,000	84,000	84,000	84,000	84,000
	8-07-40-P0695				50,000	50,000	50,000	50,000	50,000
			kW						
			\$		\$ -	\$ -	\$ -	\$ -	\$ -
			\$		\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500	\$ 4,432,500
Palo Verde Nuclear Generating Station Shutdown Power & Blackstart Services									
	09-DSR-12008	12/31/2018	\$		\$ 549,019	\$ 549,019	\$ 549,019	\$ 549,019	\$ 549,019
Provo River Project (UAMPS, UMPA & Heber)*	94-SLC-0253 & 0254, 07-SLC-0601	9/30/2024	\$		\$ 29,788	\$ 29,788	\$ 29,788	\$ 29,788	\$ 29,788
*This is phase shifter revenue, assumed to be 1/2 of past average annual revenue until 2017 due to the failure of the Waterflow Phase Shifting Transformer (PSTS). Assume replacement Waterflow PSTS will not be in service until FY 2017.									
Western Systems Coordination Council			\$		\$ 702,772	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Total Firm Transmission Revenue			\$		\$ 18,269,445	\$ 18,888,923	\$ 18,888,923	\$ 18,888,923	\$ 18,888,923
*Revenue CRSP charges UAMPS and UMPA to wheel PRP power, which is marketed separately from Integrated Projects Power.									

1/ Farmington, NM, PNM, and Williams Energy Services all use the Shiprock Transformer. These contracts are listed on the PO&M under Firm Transmission.

2/ This contract is a pass-through expense - through El Paso Electric

3/ Avg. 12-CP for the past 12mos.

4/ Because NTUA received additional CROD capacity in the Post-2004 allocation process and additional capacity from the native American Power Pool/Benefit Crediting, they have no need for transmission capacity under this contract for the time being. Per Brent 7/26/05

Salt Lake City Area Integrated Projects

Offsetting Revenues Projections Comparisons

Unit: \$1,000

Revenue	WAPA-169 3/		FY 2016 Preliminary	Difference
Firm Transmission	\$	15,565	\$ 16,044	\$ 479
Non-firm Transmission	\$	2,935	\$ 3,122	\$ 187
Resale Energy 1/	\$	7,467	\$ 8,042	\$ 575
Transaction fees 1/	\$	2,131	\$ 2,193	\$ 62
Other 2/	\$	4,934	\$ 5,101	\$ 167
Total	\$	33,032	\$ 34,502	\$ 1,470

1/ Merchant function.

2/ Includes revenues from ancillary services, auxiliary services, spinning reserves, admin charges for WRP and CDP transactions, facility use, energy imbalance, and other misc. revenues.

3/ From WAPA-169 FRN Customer binder

CRSP Offsetting Revenues Projections

as of May 2016

Year	Transmission Revenues			Merchant Function Revenue			Other Revenues 5/	Total Offsetting Revenues
	Firm 1/	Non-firm 2/	Total	Resale 3/	Transaction Fee 4/	Total		
2012		2,341,214		8,242,461	2,150,078	10,392,539	4,746,016	
2013		3,835,128		4,263,741	2,111,987	6,375,728	5,409,049	
2014		4,115,659		3,484,655	2,357,833	5,842,488	4,493,975	
2015		2,442,020		8,743,061	2,209,529	10,952,590	5,664,585	
2016		2,754,098		4,834,618	2,289,961	7,124,579	5,070,518	
5-yr AVG	18,964,046	3,097,624	22,061,670	5,913,707	2,223,878	8,137,585	5,076,829	35,276,083
		6/				7/	8/	

1/ Based on average-firm transmission contracts in the PRS, from 2016 through the "pinchpoint"

2/ Non-firm transmission revenues are taken off of the PO&M 60's

3/ Resale revenue is the difference between monthly sales and purchases. Does not include WRP sales or purchases.

4/ Transaction fees reflect the cost of real time merchant services, management and energy accounting support, and information technology costs.

5/ Includes revenues from ancillary services, auxiliary services, spinning reserves, admin charges for WRP and CDP transactions, facility use, energy imbalance, and other misc. revenues.

6/ Entered as Non-Firm Transmission column (S) in PRS

7/ Entered in Merchant Function column (U) in PRS

8/ Entered in Other Revs column (V) in PRS

CRSP STORAGE UNITS - HISTORIC AND PROJECT NET REVENUES FROM M&I WATER SALES - FY2015
(After Paying OM&R Costs -- Units = \$1,000)

Year	Blue Mesa Reservoir		Navajo Reservoir		Glen Canyon Reservoir		Flaming Gorge Reservoir		CRSP Total		Year
	Acre-Feet	Revenue	Acre-Feet	Revenue	Acre-Feet	Revenue	Acre-Feet	Revenue	Acre-Feet	Revenue	
1974										291.0	1974
1975										492.5	1975
1976										560.6	1976
1977										560.0	1977
1978										838.8	1978
1979										733.0	1979
1980										721.9	1980
1981										638.7	1981
1982										903.2	1982
1983										676.8	1983
1984										808.9	1984
1985										677.8	1985
1986										1,110.1	1986
1987										1,018.1	1987
1988										1,168.8	1988
1989										1,024.9	1989
1990										1,004.7	1990
1991										866.3	1991
1992										1,183.9	1992
1993										1,399.6	1993
1994										458.0	1994
1995										418.5	1995
1996										423.2	1996
1997										430.3	1997
1998										311.8	1998
1999										402.3	1999
2000										348.4	2000
2001										307.6	2001
2002										382.1	2002
2003										360.2	2003
2004										313.7	2004
2005										334.3	2005
2006										279.2	2006
2007										217.5	2007
2008										216.6	2008
2009										217.0	2009
2010										379.1	2010
2011										257.4	2011
2012										245.9	2012
2013										350.0	2013
2014										2,549.0	2014
2015										3,427.0	2015
2016	970	56.2	50	0.9	43,690	3,394.8	85	3.8	44,795	3,455.8	2016
2017	1,009	59.7	50	0.9	43,690	3,460.7	85	3.9	44,834	3,525.2	2017
2018	1,053	63.7	50	0.9	43,690	3,527.9	85	4.0	44,878	3,596.5	2018
2019	1,105	68.3	50	0.9	43,690	3,617.0	85	4.0	44,930	3,690.3	2019
2020	1,165	73.5	50	1.0	43,690	3,690.5	85	4.1	44,990	3,769.1	2020
2021	1,206	77.7	50	1.0	43,690	3,761.9	85	4.2	45,031	3,844.8	2021
2022	1,175	77.9	50	1.0	43,690	3,834.8	85	4.3	45,000	3,918.0	2022
2023	1,171	79.3	50	1.0	43,690	3,909.1	85	4.4	44,996	3,993.7	2023
2024	1,166	80.6	50	1.0	43,690	4,009.6	85	4.5	44,991	4,095.7	2024
2025	1,166	82.2	50	1.1	43,690	4,113.2	85	4.5	44,991	4,201.0	2025
2026	1,136	82.1	50	1.1	43,690	4,192.9	85	4.6	44,961	4,280.7	2026
2027	1,136	83.8	50	1.1	43,690	4,274.2	85	4.7	44,961	4,363.8	2027
2028	1,136	85.4	0	0.0	43,690	4,357.1	85	4.8	44,911	4,447.3	2028
2029	1,136	87.1	0	0.0	43,690	4,471.3	85	4.9	44,911	4,563.4	2029
2030	1,038	84.9	0	0.0	43,690	4,577.4	85	5.0	44,813	4,667.3	2030
2031	1,038	86.6	0	0.0	43,690	4,666.0	85	5.1	44,813	4,757.8	2031
2032	1,038	88.3	0	0.0	43,690	4,756.5	85	5.2	44,813	4,850.0	2032
2033	1,038	90.1	0	0.0	43,690	4,848.7	85	5.3	44,813	4,944.1	2033
2034	1,038	91.9	0	0.0	43,690	4,978.5	85	5.4	44,813	5,075.8	2034
2035	1,038	93.7	0	0.0	43,690	5,086.2	85	5.5	44,813	5,185.5	2035
2036	1,038	95.6	0	0.0	43,690	5,184.5	85	5.6	44,813	5,285.8	2036
2037	1,038	97.5	0	0.0	43,690	5,284.8	85	5.8	44,813	5,388.1	2037
2038	1,038	99.5	0	0.0	43,690	5,387.2	85	5.9	44,813	5,492.5	2038
2039	1,038	101.5	0	0.0	43,690	5,534.3	85	6.0	44,813	5,641.8	2039
2040	1,038	103.5	0	0.0	43,690	5,640.9	85	6.1	44,813	5,750.5	2040
2041	1,038	105.6	0	0.0	43,690	5,763.3	85	6.2	44,813	5,875.1	2041
2042	1,038	107.7	0	0.0	43,690	5,874.6	85	6.4	44,813	5,988.7	2042
2043	1,015	107.8	0	0.0	43,690	5,988.2	85	6.5	44,790	6,102.5	2043
2044	990	107.7	0	0.0	43,690	6,155.4	85	6.6	44,765	6,269.7	2044
2045	387	46.7	0	0.0	43,690	6,273.7	85	6.8	44,162	6,327.1	2045
2046	239	31.8	0	0.0	43,690	6,410.3	85	6.9	44,014	6,449.0	2046
2047	239	32.5	0	0.0	43,690	6,533.9	85	7.0	44,014	6,573.4	2047
2048	229	31.9	0	0.0	43,690	6,660.0	85	7.2	44,004	6,699.1	2048
2049	229	32.6	0	0.0	43,690	6,850.3	85	7.3	44,004	6,890.2	2049
2050	229	33.2	0	0.0	43,690	6,981.6	85	7.5	44,004	7,022.3	2050
2051	229	33.9	0	0.0	43,690	7,115.6	85	7.6	44,004	7,157.1	2051
2052	229	34.6	0	0.0	43,690	7,066.7	85	7.8	44,004	7,109.1	2052
2053	86	12.5	0	0.0	43,690	7,200.7	85	7.9	43,861	7,221.1	2053
2054	86	12.8	0	0.0	43,690	7,411.2	85	8.1	43,861	7,432.0	2054
2055	86	13.0	0	0.0	43,690	7,550.6	85	8.2	43,861	7,571.8	2055
2056	86	13.3	0	0.0	43,690	7,692.7	85	8.4	43,861	7,714.4	2056
2057	86	13.5	0	0.0	43,690	7,837.7	85	8.6	43,861	7,859.8	2057
2058	86	13.8	0	0.0	43,690	7,985.6	85	8.7	43,861	8,008.1	2058
2059	86	14.1	0	0.0	43,690	8,225.1	85	8.9	43,861	8,248.1	2059
2060	86	14.4	0	0.0	43,690	8,378.9	85	9.1	43,861	8,402.4	2060

2016 SLIP PRS Sales Projections
(Assuming Project Use Loads Variable thru 2026, Constant Beyond 2028)

Year	Energy			Capacity			Rounded (MW)
	Proj Use-Energy /1 (MWH)	LT Firm Com /2	Total (MWH)	Proj Use-Cap /3 (MW)	LT Firm Com /4	Total (MW)	
2016	133,570	4,951,800	5,085,370	42,321	1,360,780	1,403,101	1,403,100
2017	134,190	4,951,800	5,085,990	42,556	1,360,780	1,403,336	1,403,300
2018	134,190	4,951,800	5,085,990	42,556	1,360,780	1,403,336	1,403,300
2019	136,190	4,951,800	5,087,990	44,696	1,360,780	1,405,476	1,405,500
2020	136,190	4,951,800	5,087,990	44,696	1,360,780	1,405,476	1,405,500
2021	123,490	4,951,800	5,075,290	49,446	1,360,780	1,410,226	1,410,200
2022	123,860	4,951,800	5,075,660	49,676	1,360,780	1,410,456	1,410,500
2023	125,060	4,951,800	5,076,860	49,951	1,360,780	1,410,731	1,410,700
2024	131,060	4,951,800	5,082,860	51,451	1,360,780	1,412,231	1,412,200
2025	131,060	4,951,800	5,082,860	51,451	1,360,780	1,412,231	1,412,200
2026	133,660	4,951,800	5,085,460	56,201	1,360,780	1,416,981	1,417,000
2027	136,140	4,951,800	5,087,940	56,861	1,360,780	1,417,641	1,417,600
2028	136,140	4,951,800	5,087,940	56,861	1,360,780	1,417,641	1,417,600
2029	136,140	4,951,800	5,087,940	56,861	1,360,780	1,417,641	1,417,600
2030	136,140	4,951,800	5,087,940	56,861	1,360,780	1,417,641	1,417,600
Ave, 2016-2030	132,472	4,951,800	5,084,272	50,163	1,360,780	1,410,943	1,410,900

FY 2016 Project Use Summary

Year	<u>MW</u>							<u>GWH</u>			
	<u>Summer</u>			<u>Winter</u>			<u>Average</u>	<u>Summer</u>	<u>Winter</u>	<u>Total</u>	<u>Total Used</u>
	Total	Unassigned	Use	Total	Unassigned	Use		Use	Use	Total	
2016	187	122.48	64.52	187	166.88	20.12	42,321	111.26	22.31	133.57	133,570
2017	187	122.01	64.99	187	166.88	20.12	42,556	111.88	22.31	134.19	134,190
2018	187	122.01	64.99	187	166.88	20.12	42,556	111.88	22.31	134.19	134,190
2019	187	118.43	68.57	187	166.18	20.82	44,696	113.08	23.11	136.19	136,190
2020	187	118.43	68.57	187	166.18	20.82	44,696	113.08	23.11	136.19	136,190
2021	187	113.68	73.32	187	161.43	25.57	49,446	115.58	7.91	123.49	123,490
2022	187	113.22	73.78	187	161.43	25.57	49,676	115.95	7.91	123.86	123,860
2023	187	112.67	74.33	187	161.43	25.57	49,951	117.25	7.81	125.06	125,060
2024	187	109.67	77.33	187	161.43	25.57	51,451	123.25	7.81	131.06	131,060
2025	187	109.67	77.33	187	161.43	25.57	51,451	123.25	7.81	131.06	131,060
2026	187	104.92	82.08	187	156.68	30.32	56,201	125.85	7.81	133.66	133,660
2027	187	103.98	83.02	187	156.30	30.70	56,861	127.84	8.30	136.14	136,140
2028	187	103.98	83.02	187	156.30	30.70	56,861	127.84	8.30	136.14	136,140
2029	187	103.98	83.02	187	156.30	30.70	56,861	127.84	8.30	136.14	136,140
2030	187	103.98	83.02	187	156.30	30.70	56,861	127.84	8.30	136.14	136,140



United States Department of the Interior

BUREAU OF RECLAMATION
Upper Colorado Region
Power Office
125 South State Street, Room 6107
Salt Lake City, Utah 84138-1102

May 23, 2016

IN REPLY REFER TO:

UC-620
PRJ-17.00

VIA ELECTRONIC MAIL ONLY

Ms. Lynn Jeka
CRSP Manager
Western Area Power Administration
150 E. Social Hall Avenue, Suite 300
Salt Lake City, UT 84111
jeka@wapa.gov

Subject: Estimates of Project Use Power Requirements

Dear Ms. Jeka:

Enclosed are tables showing our latest estimates of project use power requirements for the Colorado River Storage Project and Participating Projects. They have been updated starting with the year 2016. If you have any questions, please contact Mr. Michael Beckemeyer at 801-524-3782.

Sincerely,

/s/

Talmadge Oxford
Manager, Power Office

Enclosures - 3

cc: Mr. Adam Arellano
Western Area Power Administration
150 E. Social Hall Avenue, Suite 300
Salt Lake City UT 84111
arellano@wapa.gov

Continued on the next page.

Subject: Estimates of Project Use Power Requirements

cc: Continued from previous page.

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(w/encl to each)

COLORADO RIVER STORAGE PROJECT
Participating Projects
Estimated Project Power Requirements (1)
Table 1

Summer Peak Demands (MW) typically from April to September (but may vary from contract to contract)

Year	Silt	Navajo		NTUA	Paradox	CUP			Dutch	(2)		Unassigned	Total
		(NAPI/ NIIP)	Navajo/ Gallup			Jensen	(4) CUP	(3)		John	Animas- LaPlata		
2016	0.75	35		12	0.40	0.93	3.24	10.1	0.2328	1.87	(2)	122.48	187
2017	0.75	35		12	0.40	1.4	3.24	10.1	0.2328	1.87	(2)	122.01	187
2018	0.75	35		12	0.40	1.4	3.24	10.1	0.2328	1.87	(2)	122.01	187
2019	0.75	38		12	0.40	1.4	3.24	10.1	0.2328	2.45	(2)	118.43	187
2020	0.75	38		12	0.40	1.4	3.24	10.1	0.2328	2.45	(2)	118.43	187
2021	0.75	38		12	0.40	1.4	7.99	10.1	0.2328	2.45	(2)	113.68	187
2022	0.75	38		12	0.40	1.86	7.99	10.1	0.2328	2.45	(2)	113.22	187
2023	0.75	38		12	0.40	1.86	7.99	10.1	0.2328	3.00	(2)	112.67	187
2024	0.75	41		12	0.40	1.86	7.99	10.1	0.2328	3.00	(2)	109.67	187
2025	0.75	41		12	0.40	1.86	7.99	10.1	0.2328	3.00	(2)	109.67	187
2026	0.75	41		12	0.40	1.86	12.74	10.1	0.2328	3.00	(2)	104.92	187
2027	0.75	41		12	0.40	2.3	12.74	10.1	0.2328	3.50	(2)	103.98	187
2028	0.75	41		12	0.40	2.3	12.74	10.1	0.2328	3.50	(2)	103.98	187
2029	0.75	41		12	0.40	2.3	12.74	10.1	0.2328	3.50	(2)	103.98	187
2030	0.75	41		12	0.40	2.3	12.74	10.1	0.2328	3.50	(2)	103.98	187

Summer Energy Use (GWH)

Year	Silt	Navajo		NTUA	Paradox	CUP			Dutch	(2)		Total (GWH)
		(NAPI/ NIIP)	Navajo/ Gallup			Jensen	(4) CUP	Dolores		John	Animas- LaPlata	
2016	1.5	30		42	2.2	1.26	13.6	16.2	0.5	4.00	(2)	111.26
2017	1.5	30		42	2.2	1.88	13.6	16.2	0.5	4.00	(2)	111.88
2018	1.5	30		42	2.2	1.88	13.6	16.2	0.5	4.00	(2)	111.88
2019	1.5	30		42	2.2	1.88	13.6	16.2	0.5	5.20	(2)	113.08
2020	1.5	30		42	2.2	1.88	13.6	16.2	0.5	5.20	(2)	113.08
2021	1.5	30		42	2.2	1.88	16.1	16.2	0.5	5.20	(2)	115.58
2022	1.5	30		42	2.2	2.25	16.1	16.2	0.5	5.20	(2)	115.95
2023	1.5	30		42	2.2	2.25	16.1	16.2	0.5	6.50	(2)	117.25
2024	1.5	36		42	2.2	2.25	16.1	16.2	0.5	6.50	(2)	123.25
2025	1.5	36		42	2.2	2.25	16.1	16.2	0.5	6.50	(2)	123.25
2026	1.5	36		42	2.2	2.25	18.7	16.2	0.5	6.50	(2)	125.85
2027	1.5	36		42	2.2	3.14	18.7	16.2	0.5	7.60	(2)	127.84
2028	1.5	36		42	2.2	3.14	18.7	16.2	0.5	7.60	(2)	127.84
2029	1.5	36		42	2.2	3.14	18.7	16.2	0.5	7.60	(2)	127.84
2030	1.5	36		42	2.2	3.14	18.7	16.2	0.5	7.60	(2)	127.84

(1) Estimates do not include losses.

(2) Power requirements will be updated as project proponents refine their water development. Current projections assume full non-Ute Indian development after 2030. Full project development (Indian + Non-Indian) would require a Summer Peak demand of 17.0 MW and a Summer use of 42.0 GWH. Summer season now at two months.

(3) The capacity for the Dolores Project includes 1.5 MW for the Ute Mt Utes. The normal Dolores summer demand is 8.6 mw and add the 1.5 mw for Mt Ute results in 10.1 mw forecasted above.

(4) The major projects for CUP's use of CRSP power are in the early planning stages.

(5) energy for NTUA computed on bases of 8 months (March 1 to Oct 31) at 60% load factor.

COLORADO RIVER STORAGE PROJECT
Participating Projects
Estimated Project Power Requirements (1)
Table 2

Winter Peak Demands (MW) typically from October to March (but may vary from contract to contract)

Year	Silt	Navajo (NAPI/ NIIP)	Navajo/ Gallup	NTUA		CUP		(4) CUP	(3)	Dutch	(2) Animas	Unassigned (MW)	Total (MW)
				*5	Paradox	Jensen	Bonneville	Dolores	John	LaPlata			
2016	0	10		0	0.40	0.09	5.71	3.5	0.22	0.20	(2)	166.88	187
2017	0	10		0	0.40	0.09	5.71	3.5	0.22	0.20	(2)	166.88	187
2018	0	10		0	0.40	0.09	5.71	3.5	0.22	0.20	(2)	166.88	187
2019	0	10		0	0.40	0.09	5.71	3.5	0.22	0.90	(2)	166.18	187
2020	0	10		0	0.40	0.09	5.71	3.5	0.22	0.90	(2)	166.18	187
2021	0	10		0	0.40	0.09	10.46	3.5	0.22	0.90	(2)	161.43	187
2022	0	10		0	0.40	0.09	10.46	3.5	0.22	0.90	(2)	161.43	187
2023	0	10		0	0.40	0.09	10.46	3.5	0.22	0.90	(2)	161.43	187
2024	0	10		0	0.40	0.09	10.46	3.5	0.22	0.90	(2)	161.43	187
2025	0	10		0	0.40	0.09	10.46	3.5	0.22	0.90	(2)	161.43	187
2026	0	10		0	0.40	0.09	15.21	3.5	0.22	0.90	(2)	156.68	187
2027	0	10		0	0.40	0.47	15.21	3.5	0.22	0.90	(2)	156.30	187
2028	0	10		0	0.40	0.47	15.21	3.5	0.22	0.90	(2)	156.30	187
2029	0	10		0	0.40	0.47	15.21	3.5	0.22	0.90	(2)	156.30	187
2030	0	10		0	0.40	0.47	15.21	3.5	0.22	0.90	(2)	156.30	187

Winter Energy Use (GWH)

Year	Silt	Navajo (NAPI/ NIIP)	Navajo Gallup	NTUA		CUP		(4) CUP	Dutch	(2) Animas	Total (GWH)	
				Paradox	Jensen	Bonneville	Dolores	John	LaPlata			
2016	0	2.0		0.0	2.2	0.04	15.2	1.37	0.5	1.00	(2)	22.31
2017	0	2.0		0.0	2.2	0.04	15.2	1.37	0.5	1.00	(2)	22.31
2018	0	2.0		0.0	2.2	0.04	15.2	1.37	0.5	1.00	(2)	22.31
2019	0	2.0		0.0	2.2	0.04	15.2	1.37	0.5	1.80	(2)	23.11
2020	0	2.0		0.0	2.2	0.04	15.2	1.37	0.5	1.80	(2)	23.11
2021	0	2.0		0.0	2.2	0.04	17.7	1.37	0.5	1.80	(2)	7.91
2022	0	2.0		0.0	2.2	0.04	17.7	1.37	0.5	1.80	(2)	7.91
2023	0	2.0		0.0	2.2	0.04	17.7	1.37	0.5	1.70	(2)	7.81
2024	0	2.0		0.0	2.2	0.04	17.7	1.37	0.5	1.70	(2)	7.81
2025	0	2.0		0.0	2.2	0.04	17.7	1.37	0.5	1.70	(2)	7.81
2026	0	2.0		0.0	2.2	0.04	20.2	1.37	0.5	1.70	(2)	7.81
2027	0	2.0		0.0	2.2	0.63	20.2	1.37	0.5	1.60	(2)	8.3
2028	0	2.0		0.0	2.2	0.63	20.2	1.37	0.5	1.60	(2)	8.3
2029	0	2.0		0.0	2.2	0.63	20.2	1.37	0.5	1.60	(2)	8.3
2030	0	2.0		0.0	2.2	0.63	20.3	1.37	0.5	1.60	(2)	8.3

(1) Estimates do not include losses.

(2) Power requirements will be updated as project proponents refine their water development. Current projections assume full non-Ute Indian development after **2030**. Full project development (Indian + Non-Indian) will require a Winter Peak Demand of 10.0 MW and a Winter use of 17.0 GWH. Winter season now at 10 months.

(3) The capacity for the Dolores Project includes 1.5 MW for the Ute Mt Utes. The normal Dolores winter demand is 2.0 mw and add the 1.5 mw for the Ute Mt Utes results in 3.5 mw forecasted above.

(4) The major projects for CUP's use of CRSP power are in the early planning stages.

(5) 12 MW transferred from NIIP to Western for NTUA under amendment 5 to 87-SLC-0013 is only from March 1 to October 31 (an 8 month period), therefore 0 demand and 0 energy is shown here for the winter season.

Colorado River Storage Project
Bureau of Reclamation and Western Area Power Administration
Glen Canyon Environmental Studies and Other Environmental Costs

Last Revised: April 15, 2016

				Other Environmental Costs								Total in PRS		
Glen Canyon Environmental Costs				Environmental Studies			Recovery Implementation Program (RIP)		Consumptive Use 6/	Water Quality 6/	Misc Non-Reimbursable			
Non-Reimbursable				Flaming Gorge	Aspinall	Navajo	Base Program	Capital 5/				Western	Reclamation	Total
Year	Western	Reclamation	Total											
1983	-	876,950	876,950	-	-	-	1,167,482	-	1,122,159	2,275,011	-	-	5,441,602	5,441,602
1984	-	1,013,434	1,013,434	-	-	-	142,781	-	103,593	250,085	-	-	1,509,893	1,509,893
1985	(94,762)	1,404,765	1,310,003	-	-	-	185,189	-	170,642	262,514	377	(94,385)	2,023,110	1,928,725
1986	390,789	2,385,455	2,776,244	-	-	-	246,606	-	108,981	232,844	609	391,398	2,973,886	3,365,284
1987	10,785	1,709,058	1,719,843	-	-	-	330,780	-	117,713	256,638	134,900	145,685	2,414,189	2,559,874
1988	-	966,780	966,780	-	-	-	400,959	-	99,160	330,562	171,435	171,435	1,797,461	1,968,896
1989	-	1,407,719	1,407,719	-	-	-	888,587	-	108,565	124,909	382,630	382,630	2,529,780	2,912,410
1990	1,885,019	4,632,949	6,517,968	-	-	-	(52,519)	-	201,295	173,458	681,645	2,566,664	4,955,184	7,521,848
1991	3,921,978	11,689,135	15,611,113	-	-	-	543,386	-	191,381	206,635	1,076,716	4,998,694	12,630,537	17,629,231
1992	4,245,939	13,043,929	17,289,868	-	-	-	1,235,641	-	160,351	204,299	655,849	4,901,788	14,644,220	19,546,008
3/	10,359,748	39,130,174	49,489,922	-	-	-	5,088,892	-	2,383,840	4,316,955	3,104,161	13,463,909	50,919,862	64,383,771
			4/											
1993	2,733,998	-	2,733,998	-	-	-	2,210,511	-	255,814	233,678	254,913	2,988,911	2,700,003	5,688,914
1994	6,292,442	12,392,105	18,684,547	209,483	149,335	-	5,663,621	-	301,640	161,975	523,401	6,815,843	18,519,341	25,335,184
1995	1,473,893	8,391,015	9,864,908	48,410	51,945	-	2,379,586	-	311,533	340,722	69,419	1,543,312	11,422,857	12,966,169
1996	3,155,770	13,032,177	16,187,947	28,157	64,982	-	(2,419,491)	-	281,453	179,236	112,444	3,268,214	11,073,375	14,341,589
1997	1,429,879	6,367,002	7,796,881	54,245	125,779	217,407	1,988,136	-	327,836	317,097	303,075	1,732,954	9,000,071	10,733,025
Sub	15,085,982	40,182,299	55,268,281	340,295	392,041	217,407	9,822,363	-	1,478,278	1,232,708	1,263,252	16,349,234	52,715,647	69,064,881
1998	130,000	4,352,747	4,482,747	122,000	171,764	535,508	2,259,778	-	243,970	252,856	201,199	331,199	7,109,351	7,440,550
1999	-	1,012,060	1,012,060	286,946	182,201	382,274	3,228,244	-	275,967	302,492	396,008	396,008	4,818,763	5,214,771
2000	-	4,939,719	4,939,719	618,257	213,726	663,719	2,056,559	-	265,736	546,476	508,440	508,440	7,808,491	8,316,931
2001	26,390,000	12,026,703	38,416,703	236,000	303,000	642,000	2,534,979	-	252,125	684,909	515,183	26,905,183	15,498,716	42,403,899
2002	30,000	13,431,462	13,461,462	-	-	-	4,555,228	-	266,796	667,745	603,073	633,073	18,921,232	19,554,305
2003	-	(1,033,336)	(1,033,336)	-	-	-	5,900,957	5,500,000	294,027	406,073	2,202,391	2,202,391	5,567,721	7,770,112
2004	-	10,790,208	10,790,208	30,000	344,000	120,000	6,322,649	-	151,389	994,295	756,803	756,803	18,258,541	19,015,344
2005	1,010,000	7,703,773	8,713,773	30,000	347,000	120,000	5,736,388	5,938,800	275,242	742,726	925,217	1,935,217	14,458,129	16,393,346
2006	-	9,072,369	9,072,369	-	327,000	64,000	7,820,465	-	(1,324,602)	737,622	734,361	734,361	16,305,855	17,040,216
2007	-	9,248,741	9,248,741	3,253	340,746	413	6,923,453	-	248,832	797,608	670,773	670,773	17,218,634	17,889,407
2008	3,830,000	8,831,479	12,661,479	-	767,721	-	7,667,499	-	308,443	599,174	1,673,955	5,503,955	17,406,595	22,910,550
2009	480,000	8,965,727	9,445,727	-	-	-	7,371,302	-	237,027	806,716	781,851	1,261,851	17,380,773	18,642,624
2010	510,000	10,010,181	10,520,181	-	-	-	7,260,131	-	222,256	848,399	1,039,791	1,549,791	18,340,967	19,890,758
2011	-	10,598,156	10,598,156	-	-	-	7,706,099	-	280,380	638,225	995,352	995,352	19,222,860	20,218,212
2012	622,000	4,236,682	4,858,682	-	-	-	10,579,096	-	201,572	846,893	1,741,284	2,363,284	15,864,243	18,227,527
2013	375,000	7,499,314	7,874,314	-	-	-	7,825,157	-	255,613	703,030	1,850,596	2,225,596	16,283,114	18,508,710
2014	1,918,000	13,137,932	15,055,932	-	-	-	7,887,889	-	305,788	755,340	3,529,837	5,447,837	22,086,949	27,534,786
2015	2,593,000	10,341,418	12,934,418	-	-	-	7,301,112	-	279,425	817,399	3,154,324	5,747,324	18,739,354	24,486,678
Sub	37,888,000	145,165,335	183,053,335	1,326,457	2,997,158	2,527,914	110,936,985	11,438,800	3,039,986	12,147,979	22,280,438	60,168,438	271,290,285	331,458,723
Total	63,333,730	224,477,808	287,811,538	1,666,752	3,389,199	2,745,321	125,848,240	11,438,800	6,902,104	17,697,642	26,647,851	89,981,581	374,925,794	464,907,375

- 1/ Costs of RIP program became non-reimbursable beginning in FY 1993 per memo from UC Regional Director on Feb 2, 1993, and further by PL 106-392--October 30, 2000. Environmental costs at Flaming Gorge, Aspinall, and Navajo are considered reimbursable but may be reclassified in the future.
- 2/ These costs are related to misc "non-compliance" environmental costs. Some costs are related to the Argonne contract for RIP and are considered non-reimbursable. Beginning in 2001 portions of Resources and Environmental staff hours were deemed non-reimbursable and included with Argonne in this column.
- 3/ Title 18, Section 1804, PL 102-575 declared all expenses incurred through FY 1992 as "non-reimbursable". Prior to the Act, Western had considered \$51,216,926 of the \$52,680,022 as reimbursable by power. This amount (\$51,216,926) was adjusted out of Western's power repayment study in 1993.
- 4/ For FY 1993-1997 as determined by the Commissioner's Office (USBR) and sent to Western on Feb 2, 2000. Costs were prorated to each agency based on each agency's proportionate share of total costs.
- 5/ RIP Loans thru the State of Colorado.
- 6/ Data for 1983 is the cumulative total for 1979-1983.



Department of Energy
Western Area Power Administration
150 East Social Hall Avenue, Suite 300
Salt Lake City, UT 84111-1580

APR 29 2016

Sent via E-mail

Dear Salt Lake City Area Integrated Projects Customer:

Under your firm electric service contract, Western assesses energy and demand charges as set forth in Rate Schedule SLIP-F10. Additionally, under this rate schedule, a Cost Recovery Charge (CRC) may also be assessed if Western determines it is necessary.

Western is required to notify its customers by May 1, 2016, if a CRC is needed in the next fiscal year. We have reviewed our financial situation compared to the anticipated hydropower generation levels and determined there will be no CRC for FY 2017. Because there is no CRC, there is no need for action on your part.

Had the CRC been necessary, each customer would have been provided with two sets of energy numbers for the next fiscal year. One set would have shown the full Sustainable Hydropower (SHP) energy allocation, and the other set would have shown a lower SHP allocation. Under this scenario, each customer would then decide whether to accept or decline the CRC. Customers accepting the CRC would receive the full SHP allocation and be charged the additional expense of the CRC. Those customers declining the CRC would avoid the charge, but receive less energy from Western in the next fiscal year.

Since a CRC is not necessary for FY 2017, Western will not be providing alternative energy and capacity allocations. Western will proceed as normal and provide your Winter Season attachment later this summer.

If there are any questions, please telephone Tony Henriquez at (801) 524-6388.

Sincerely,

A handwritten signature in black ink, appearing to read "J. Adam Arellano".

J. Adam Arellano
Acting Vice President of Power Marketing
CRSP Management Center

Enclosure

FY 2017 CRC Calculation

April 2016

		FY 2017		
Step 1	BFBB	Basin Fund Beginning Balance (\$)	\$99,779,000	Projected beginning balance for FY per financial cash flow analysis (FY Beginning Bal * 1000)
	BFTB	Basin Fund Target Balance	\$59,867,400 *	Basin Fund Target Balance is Based on "tiered" criteria.
	PAR	Projected Annual Revenue (\$) w/o CRC	\$221,408,000	Per financial cash flow analysis, (=TOTAL REV *1000)
	PAE	Projected Annual Expense (\$) (Excludes WRP)	\$249,185,000	Per financial cash flow analysis, (=TOTAL EXP *1000)
	NR	Net Revenue (\$)	(\$27,777,000)	=PAR-PAE
	NB	Net Balance (\$)	\$72,002,000	=BFBB + NR
Step 2	EA	SHP Energy Allocation (GWh)	4,951.79	FY '16 SHP energy allocation excluding project use (=SHP DELIVERIES / 1MIL)
	HE	Forecasted Hydro Energy (GWH)	4,490.90	Projected generation from the most current 24-month study, does not include project use (=NET GEN / 1MIL)
	FE	Forecasted Energy Purchase (GWh)	703	Forecasted Energy Purchase (GWh) from the most current 24-month study (=FIRMING PURCHASES / 1MIL)
	Price	Average price per MWh for purchased power	\$26.30	Average price = 60% onpeak + 40% offpeak (=COMP PRICE)
	FX	Forecasted Energy Purchase Expense (\$)	\$18,481,049	Estimated purchased power costs based upon most current 24-month study (= PURCHASE COST)
	Step 3	FA1	Basin Fund Balance Factor (\$)	\$18,481,049
FA2		Revenue Factor (\$)	\$18,481,049	If NR is greater than -(1 - tiered percent) of BFBB then FX, if NR is less than -(1 - tiered percent) of BFBB then, FX+(NR+(tiered percent *BFBB)). Formula is: =IF(NR>-(1 - tiered percent *BFBB),FX,FX+(NR+(1 - tiered percent *BFBB)))
FA		Funds Available (\$) (Lesser of FA1 or FA2)	\$18,481,049	The lesser of FA1 or FA2 but not less than zero: if (min(FA1,FA2) >= 0, MIN(FA1,FA2),0)
FARR		Additional Revenue to be Recovered (FX-FA)	\$0	=FX-FA
Step 4		WL	Waiver Level (GWH)	5,194
	WLP	Waiver level percentage of full SHP	105%	Percent of waiver level to full SHP
	CRCE	CRC Energy GWh (EA-WL)	0	= EA-WL (Does not include losses projected at 7.81%)
	CRCEP	CRC level percentage of full SHP	0%	Percent of CRCE to full SHP or CRCE/EA
	CRC	Cost Recovery Charge (mills/kWh)	-	=FARR / (EA * 1000)

Note: Cash flow projections from the:
 April 2016, 24-month study
 * BFTB based on CRC tier iii: BFBB less than \$120,000,000 but greater than \$90,000,000

Updated: April 29, 2016