

CRSP Management Center

Annual 10-Year Plan Meeting

Wednesday, November 2, 2016

8:30 to 11:30 a.m. MDT

Meeting coordinator – Amy Cutler – 801-524-4012

WebEx Information:

[join the meeting](#)

Meeting password: DiMaw78@

Join by phone

1-650-479-3208 Call-in toll number (US/Canada)

Meeting number (access code): 809 136 212

Agenda

8:30 – 8:40	Welcome / Introductions / Logistics	Lynn Jeka
8:40 - 8:50	Audience Preliminary Questions/Concerns/Etc.	All
8:50 – 11:00	CRSP 10-Year Plan Review <ul style="list-style-type: none">▪ CRSP RMR Maintenance Office▪ CRSP DSW Maintenance Office	Jason Groendyk Nancy Ruiz and Cole Shinaman
11:00 – 11:15	Power Marketing Updates	Brent Osiek
11:15 - 11:30	Review Action Items	Amy Cutler/All
11:30	Meeting Adjourn	All



CRSP 10-Year Capital Improvement Plan
Rocky Mountain Region

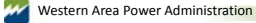
November 2, 2016
Salt Lake City, UT



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Rocky Mountain Region Ten Year Plan Version Control


- **R0**-version of Ten Year Plan submitted to customers and to headquarters for consolidation of WAPA-wide budget; late October-November
- **R1**-version of Ten Year Plan with any corrections or changes after customers and senior management review; mid-January
- **RFINAL**-final version submitted to headquarters for consolidation of WAPA-wide budget submission to the Dept. of Energy; April



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FY 17-26 Rocky Mountain Region Ten Year Plan

- Completed Projects
- Changed/Ongoing Projects
- New Projects



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Completed Projects



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FY 17-26 Rocky Mountain Region Completed Projects


- Archer KV1A Transformer Replacement
 - Replaced failed KV1A 167 MVA with 200 MVA
 - In-Service Date: Q1 2016
 - Total Cost: \$3.289M, excludes IDC
 - Budget: \$3.8M
- Shiprock Stage 07
 - Replaced 230/115 kV Transformer and associated breakers and switches
 - Actual: \$849k, excludes IDC
 - Budget: \$1.2M
 - ISD: Q2 FY16



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FY 17-26 Rocky Mountain Region Completed Projects

- PMOC Roof Replacements
 - Actual: \$1.4M
 - Budget: \$1.412M; 31% JJCR and 69% JJPS
 - ISD: Q3 FY16
- Midway-Poncha OPGW
 - Actual: \$3.541M
 - Budget: \$2.590M; 51% JJCR and 49% Trust
 - ISD: Q2 FY16



Western Area Power Administration 6

FY 17-26 Rocky Mountain Region Completed Projects

- Blue Mesa-Montrose OPGW
 - Actual: \$1.485M
 - Budget: \$1.883M
 - ISD: Q1 FY16
- Montrose-Mexican Hat MW replacement
 - Actual: \$1.601M
 - Budget: \$1.469M
 - ISD: Q4 FY16

FY 17-26 Rocky Mountain Region Completed Projects

- Collebran 115-kV breaker replacement
 - Actual: \$230k
 - Budget: \$182k
 - ISD: Q4 FY16
- Montrose Truck/Tractor Replacement
 - Actual: \$177k
 - Budget: \$150k
 - ISD: Q1 FY16

Changes in Transmission Line Projects

FY 17-26 Rocky Mountain Region Changes in Transmission Line Projects

- **Pleasant View 24.9-kV line replacement**
 - Construction contract award Q4 FY16
 - Overall budget reduced from \$750k to \$440k
 - Anticipated ISD: Q3 FY17

Changes in Substation Projects

FY 17-26 Rocky Mountain Region Changes in Substation Projects

- **Archer KV2A Transformer Replacement**
 - Construction contract award Q3 FY16
 - Overall budget reduced from \$3.056M to \$2.622M
 - Anticipated ISD: Q3 FY17
- **Archer Station Service Replacement**
 - Construction contract award anticipated Q3 FY17
 - Overall budget increased from \$585k to \$680k
 - Anticipated ISD: Q2 FY18

FY 17-26 Rocky Mountain Region Changes in Substation Projects

- **Ault KU1A Transformer Replacement**
 - Construction contract award anticipated Q4 FY17
 - Overall budget reduced from \$7.85M to \$5.481M
 - CRSP capital funds reduced from \$2.826M to \$1.973M (\$853k)
 - Anticipated ISD: Q3 FY19
- **Ault KW1F & KW1G**
 - Construction contract award anticipated Q4 FY17
 - Overall budget increased from \$711k to \$800k
 - 100% Trust funded (Basin)
 - Anticipated ISD: Q3 FY19

FY 17-26 Rocky Mountain Region Changes in Substation Projects

- **Ault 230 kV Breaker Replacements**
 - Construction contract award anticipated Q4 FY17
 - Overall budget reduced from \$1.692M to \$1.560M
 - CRSP capital funds reduced from \$708K to \$554k (\$154k)
 - Anticipated ISD: Q3 FY19
- **Ault Station Service**
 - Construction contract award Q4 FY16
 - Schedule moved up from FY17 award
 - Anticipated ISD: Q4 FY17

FY 17-26 Rocky Mountain Region Changes in Substation Projects

- **Curecanti KZ1A Transformer Replacement**
 - Construction contract award FY15, complete Q4 FY16
 - Overall budget increased from \$2.287M to \$2.308M
 - Anticipated ISD: Q2 FY17
- **Hayden 230 kV breaker replacements**
 - Installation by force account
 - Overall budget increased from \$448k to \$539k
 - Anticipated ISD: Q2 FY17

FY 17-26 Rocky Mountain Region Changes in Substation Projects

• Waterflow Phase Shifter and breaker replacements

- Construction contract award FY15, completed FY16
- Overall budget increased from \$15.058M to \$16.060M
- Anticipated ISD: Q1 FY17

• Weld 115-kV breaker replacements

- Construction contract award Q4 FY16
- Overall budget reduced from \$727 to \$564k
- Anticipated ISD: Q4 FY17

FY 17-26 Rocky Mountain Region Changes in Substation Projects

• Weld 230-kV breaker replacements

- Construction contract award Q4 FY16
- Overall budget reduced from \$942k to \$760k
- Anticipated ISD: Q4 FY17

Changes in Communication Projects

FY 17-26 Rocky Mountain Region Changes in Communication Projects

- **Ault-Weld West OPGW**
 - Construction contract award Q4 FY16
 - Overall budget increased from \$566k to \$774k
 - Anticipated ISD: Q3 FY17
- **CRSP/WCMO spurs**
 - Projects pushed from FY19-21 to FY20-22

FY 17-26 Rocky Mountain Region Changes in Communication Projects

- **Digital Crossconnect replacements**
 - Overall budget increased from \$125k to \$261k
 - CRSP sites account for \$148k
 - Anticipated ISD: moved from FY17 to FY18
- **Colorado Fiber Ring**
 - Overall budget increased from \$1,297M to \$1,473M
 - CRSP sites account for \$592k
 - Anticipated ISD: moved from FY17 to FY18

FY 17-26 Rocky Mountain Region Changes in Communication Projects


- **Island Lake Comm Building**
 - Construction contract award anticipated Q4 2017
 - Overall budget increased from \$750k to \$986k
 - Anticipated ISD: Q4 FY18
- **Shiprock SCADA RTU**
 - Overall budget increased from \$84k to \$111k
- **UHF radio replacements**
 - Projects pushed from FY19 to FY20

Changes to Mobile and Heavy Equipment


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FY 17-26 Rocky Mountain Region Changes to Mobile and Heavy Equipment

- **Craig 72' bucket truck**
 - Formerly request for 85' bucket truck in FY17
 - Current request for FY19
 - Overall budget increased from \$320k to \$475k

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Changes in Programmatic Improvements

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FY 17-26 Rocky Mountain Region Changes in Programmatic Improvements

• **IT General Support Systems**

- Overall budget reduced from \$1.347M to \$610k
- Western capital funds reduced by \$379k
 - Reflects move of budget to the IT Infrastructure line in FY20

• **MOC Station Service Upgrade**

- Construction contract award Q4 FY16
- Overall budget increased from \$909k to \$1.113M
- Anticipated ISD: Q4 FY17

FY 17-26 Rocky Mountain Region Changes in Programmatic Improvements

• **PMOC UPS Upgrade**

- Construction contract award Q4 FY16
- Overall budget reduced from \$2.5M to \$1.314M
- CRSP capital funds reduced by \$355k
- Anticipated ISD: Q4 FY17

• **SCADA Upgrades**

- Overall budget reduced from \$4.932M to \$2.631M
- Western capital funds reduced by \$515k
 - Reflects budget move to SCADA EMS upgrade in FY19

New Substation Projects

FY 17-26 Rocky Mountain Region New Substation Projects

- **Midway Transformer and Reactor Replacements**

- Construction start anticipated for FY19
- Overall budget \$2.25M
- Anticipated ISD: FY21

- **Shiprock 345-kV breaker replacements**

- Construction start anticipated for FY20
- Overall budget \$2.545M
- Anticipated ISD: FY21

FY 17-26 Rocky Mountain Region New Substation Projects

- **Clean Path Energy Interconnection**

- Construction start anticipated for FY19
 - Includes control building addition for additional panels and separate battery room
- Overall project budget \$7.5M (Trust funded)
- CRSP responsible for 33% of building expansion
 - Budget \$250k
- Anticipated ISD: FY20

New Communication Projects

FY 17-26 Rocky Mountain Region New Communication Projects

- **Maintenance Communications network**

- Construction start anticipated for FY17
- Overall budget \$160k - \$54k JJCR
- Anticipated ISD: FY17

New Mobile and Heavy Equipment

FY 17-26 Rocky Mountain Region New Mobile and Heavy Equipment

- **MOC Heavy-duty Semi Tractor**

- Purchase anticipated for FY19
- Overall budget \$130k

- **MOC Hogg-Davis Reel Puller replacement**

- Purchase anticipated for FY19
- Overall budget \$135k

FY 17-26 Rocky Mountain Region New Mobile and Heavy Equipment

• **WCMO Snow Cat and Trailer**

- Purchase anticipated for FY17
- Overall budget \$150k

New Programmatic Improvements

FY 17-26 Rocky Mountain Region New Programmatic Improvements

• **IT Cyber Security**

- Network Security Operations Center – 5-year upgrade schedule
- Next upgrade scheduled for FY21
- Overall budget \$153k - \$76k JJCR
- Anticipated ISD: FY21

• **IT Infrastructure**

- Start anticipated for FY20 – replaces General Support Systems budget line
- Overall budget \$220k - \$110k JJCR
- Anticipated ISD: FY20

FY 17-26 Rocky Mountain Region New Programmatic Improvements

- **Ault Security Camera Replacement**
 - Construction start anticipated for FY18
 - Overall budget \$425k - \$83k JJCR
 - Anticipated ISD: FY19
- **MOC Video Surveillance Upgrade**
 - Construction underway
 - Overall budget \$265k - \$228k JJCR
 - Anticipated ISD: FY17

FY 17-26 Rocky Mountain Region New Programmatic Improvements

- **Security Camera Replacement**
 - Construction start anticipated for FY19
 - Overall budget \$2.7M - \$2.25M JJCR
 - Anticipated ISD (all sites completed): FY23
- **SCADA EMS Upgrades**
 - Upgrade anticipated for FY19
 - Replaces incremental upgrades with a major upgrade
 - Overall budget \$2.949M - \$828k JJCR
 - Anticipated ISD: FY20

Questions?



Western Area Power Administration

CRSP Management Center

Annual 10-Year Plan Meeting

November 2nd, 2016



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Desert Southwest Region FY16 Accomplishments



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Desert Southwest Region FY16 Accomplishments

Glen Canyon Emergency Erosion Mitigation Project Phase I - Drainage and Waterline

- Emergency temporary upgrades at Glen Canyon Substation due to microburst storm
- ISD: September 2016
- Financials
 - Total cost to date: \$359,053
 - FY17 budget: \$20,000
 - Total estimated budget: \$650,000
- Project in close-out



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Desert Southwest Region FY16 Accomplishments

Glen Canyon Emergency Erosion Mitigation Project
Phase I - Drainage and Waterline



Desert Southwest Region FY16 Accomplishments


Glen Canyon Emergency Erosion Mitigation Project
Phase I - Drainage and Waterline



Desert Southwest Region FY16 Accomplishments

Glen Canyon Visitor Center

- Added a demand meter at Glen Canyon Substation to meter the Visitor Center electrical load
- Load previously unmetered
- Project will result in cost savings to CRSP customers
 - ISD: November 2016
 - Financials
 - Total cost to date: \$17,027
 - Total estimated budget: \$50,000
 - Project in close-out



Desert Southwest Region FY16 Accomplishments

Pinnacle Peak KU1A Gasket Replacement


- Procurement contract awarded: December 2015
- ISD: Q2 FY16
- Three week project was extended to ten weeks due to contractor deficiencies
- Numerous issues with contractor requiring warranty claims, corrective actions, and rework
- Lessons learned were documented from procurement of lowest bidder
- Financials
 - Total cost to date: \$372,469
 - Federal labor: \$185,425
 - Total estimated budget : \$160,000



Desert Southwest Region FY16 Accomplishments

Procure 45' Bucket Truck

- Contract awarded June 2016
- Delivery date June 2017
- Total cost to date: \$130,876
- Total estimated budget: \$150,000



Desert Southwest Region Active Projects



Desert Southwest Region Integrated Vegetation Program

Five Task Orders Issued – 83 Miles of Right-of-Way
Cleared

- Contract awarded: Q4 FY14
- Total project costs to date: \$3,778,575
 - Flagstaff-Pinnacle Peak #1 - \$1,890,543
 - Flagstaff-Pinnacle Peak #2 - \$1,702,327
 - Glen Canyon –Flagstaff #1 - \$37,011
 - Glen Canyon –Flagstaff #2 - \$110,849
 - Pinnacle Peak-Rogers #1 - \$37,845
- All work completed



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Desert Southwest Region Integrated Vegetation Program

INSERT VIDEO



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Desert Southwest Region Integrated Vegetation Management Next Steps





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Desert Southwest Region Integrated Vegetation Management Next Steps

New contract to be awarded for final two task orders: Flagstaff-Pinnacle Peak-Glen Canyon 345kV lines

- Locations:
 - Verde River South to Pinnacle Peak
 - Bloody Basin Road south to Pinnacle Peak
- Work to begin: Q2 FY17
- Anticipated completion date: Q4 FY17
- Cost drivers: remote, rugged terrain requiring extensive hand clearing
- Financials
 - Task Order Six estimated costs: \$382,115
 - Task Order Seven estimated cost: \$802,182





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Desert Southwest Region Integrated Vegetation Management Next Steps

Pesticide for Flagstaff, Glen Canyon, Pinnacle Peak, and Rogers substations

- Estimated award date: Q2 FY17
- Total project cost estimated: \$46,800 (All sites)
- Anticipated completion date: Q4 FY17





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Desert Southwest Region Integrated Vegetation Management Next Steps

Herbicide and Road Access

- Estimated award date: Q2 FY17
- Total estimated budget: \$1 million for approximately 17,980 acres
- Anticipated completion date: Q4 FY17



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Desert Southwest Region Active Projects

Pinnacle Peak 230kV Disconnect Switches

Replacements Bays 23 & 33

- Switches purchased FY14
- Assemble switches FY16
- Work was delayed for outage coordination & labor resource prioritization
- Anticipated ISD: Q4 FY17
- Financials
 - Total cost to date: \$175,448
 - FY17 budget: \$200,000
 - Total estimated budget: \$460,000



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Desert Southwest Region Active Projects

Pinnacle Peak Relay Replacement – Transformer KU1A and KU2A

- Government furnished equipment contract awarded FY16
- Anticipated ISD: Q4 FY17
- Cost drivers: Increased cost in procuring the panel boards and relays
- Financials
 - Total project cost to date: \$170,642
 - FY17 budget: \$200,000
 - Total estimated budget: \$322,700



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Desert Southwest Region Active Projects

Pinnacle Peak – Rogers 230kV -Install Double Circuit Inset Structure Lines 1 & 2

- Project addresses a phase-ground clearance violation
- Install steel pole mid-span to mitigate line sag
- Construction contract signed
- Field work to start: Q1 FY17
- Anticipated ISD: Q2 FY17
- Work performed in conjunction with Parker Davis Power system
- Financials
 - Total cost to date: \$209,892
 - FY17 budget: \$300,000
 - Total estimated budget: \$500,000



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Desert Southwest Region Active Projects

Glen Canyon Remedial Action Scheme

- Design & dual communication path schemes completed
- WAPA study per NERC completed
- Install and Commission Path A – Q4 FY17
- Install and Commission Path B – Q2 FY17
- WAPA work on Path A/B is contingent upon Bureau of Reclamation portion
- Anticipated ISD: Q1 FY18
- Cost drivers: scope expanded due to NERC requirements (special protection plan to full remedial action scheme)
- Financials
 - Total cost to date: \$283,260
 - FY17 budget: \$100,000
 - Total estimated budget: \$238,700



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Desert Southwest Region Active Projects

Substation HVAC Replacement Program

- As HVAC systems approach/exceed their engineered life span assessments and replacements are initiated
- Priority units >15 years old or those with extensive maintenance/repair cost
- Replacement units are more energy efficient & lower routine maintenance
- Locations:
 - Pinnacle Peak ISD: Q4 FY16
 - Glen Canyon anticipated ISD: Q4 FY17
 - Long House Valley anticipated ISD: Q4 FY17
 - Kayenta anticipated ISD: Q4 FY17
- Financials (all locations)
 - Total cost to date: \$136,207
 - PPK \$42,637; GCS \$50,886; LHV \$21,551; KAY \$21,133
 - FY17 budget: \$32,000
 - Total estimated budget: \$190,656



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Desert Southwest Region Active Projects

Microwave System Upgrades

Project establishes a new communication path and increases reliability

- Preston Mesa – Jacks Peak
 - Significant cost savings was achieved at Jack's Peak as DSW negotiated use of existing APS tower
 - Government furnished equipment purchased for all sites
 - ISD: Q4 FY17
 - Financials
 - Total project cost to date: \$38,663
 - FY17 budget: \$50,000
- Jacks Peak – Glen Canyon
 - Work Plan/Out Years
 - WAPA is analyzing the existing tower at Glen Canyon for potential utilization with the upgraded equipment
 - Anticipated ISD: TBD



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Desert Southwest Region Active Projects



APS tower site at Jack's Peak



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Desert Southwest Region Active Projects

Radio Equipment Upgrades

- Zilner Mesa – Glen Canyon portion is on hold pending the completion of communication tower work at Glen Canyon
- Project increases bandwidth and reliability
- Bandwidth requirements in accordance with NERC
- Anticipated ISD: TBD
- Financials
 - Total cost to date: \$85,564
 - FY17 budget: \$0
 - Total estimated budget: \$90,000



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Desert Southwest Region Active Projects

Mingus Mountain Communication Building

- Building was analyzed by engineer and deemed structurally unsound.
- DSW repurposed the existing ED5 10'x24' building for relocation to Mingus Mountain, savings will be realized in the repurposing
- Work started: Q2 FY16
- Specification into Procurement: Q3 FY16
- Projected completion: Q2 FY19
- Project was pushed back based upon reprioritization of active projects
- Financials
 - Funding carried over from FY16 to FY17
 - Total cost to date: \$4,752
 - FY17 budget: \$532,000
 - Total estimated budget: \$632,000




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Desert Southwest Region Active Projects

Physical Security and Remediation Plans

- Assessments, install cameras, card readers, and upgrade physical security FIPS-201 compliance
- Locations: Glen Canyon, Flagstaff, Pinnacle Peak, and Kayenta
- Anticipated ISD: Q1 FY18
- Financials
 - Total cost to date: \$33,850 (Assessments)
 - Flagstaff \$5,615, Glen Canyon \$22,375, Pinnacle Peak \$5,860
 - FY17 Budget: \$1.3 million



Desert Southwest Region FY17 New Starts



Desert Southwest Region FY17 New Starts

**PRC-002-2 Digital Monitoring Equipment (DME)
Upgrades and Team Additions (Software)**

- Location: Pinnacle Peak
- Driven by compliance requirements
- Anticipated ISD: Q1 FY18
- Total estimated budget: \$170,000

WIN/CIP7 Security Relay Encryption

- Location: Pinnacle Peak
- Driven by compliance requirements
- Anticipated ISD: Q1 FY18
- Total estimated budget: \$110,000



Desert Southwest Region FY17 New Starts

Glen Canyon Erosion and Waterline Project – Phase II

Project Scope

- Expand on temporary emergency repairs made in Phase I
- Create 100 year flood erosion plan
- Repair & protect access road
- Add and rebuild permanent flood control structures and culverts
- Reroute new utility cables under road
- Reroute new water line under road

Work Plan

- Perform hydrology study
- Design 100 year flood drainage plan
- Solicit construction contract
- Anticipated ISD: Q3 FY2019



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Desert Southwest Region FY17 New Starts

Glen Canyon Erosion and Waterline Project – Phase II



Exposed Communication Cables Access Road Damage



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Desert Southwest Region FY17 New Starts

Glen Canyon Erosion and Waterline Project – Phase II

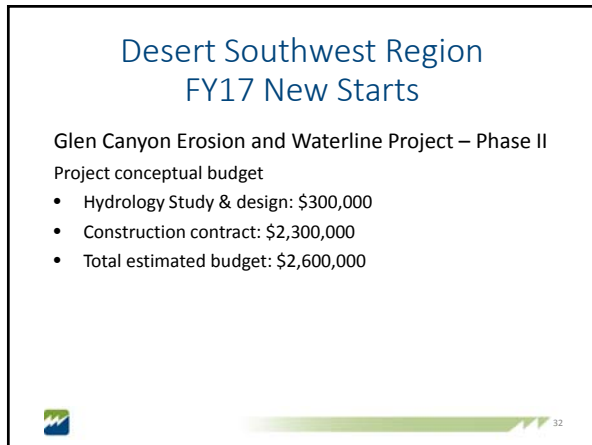


Site Erosion Drainage Culvert Washout



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Desert Southwest Region
Project Plan
FY18 and Out Years




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Desert Southwest Region
FY18 and Out Years

Substations Project
Test Equipment (FY18-FY26)

- Total Estimated Budget \$60,000 per FY




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Desert Southwest Region
FY18 and Out Years

Communication Projects

Tower Mountain Communication Building Replacement with Environmental – New Project (FY19-FY20)

- Total Estimated Budget \$870,000

Glen Canyon Microwave Tower Replacement – New Project (FY20-FY21)

- Total Estimated Budget TBD

Power System Replacement Program (FY20-FY26)

- Total Estimated Budget \$50,000 per FY

Remote Terminal Unit (RTU) Replacement Program (FY19-FY26)

- Total Estimated Budget \$85,000 per FY




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Desert Southwest Region FY18 and Out Years

Communication Projects Continued

Relay Line Replacement 69kV Glen Canyon Substation (FY18-FY19)

- Total Estimated Budget \$450,000

Relay Line Replacement Kayenta (FY20)

- Total Estimated Budget \$300,000

Pinnacle Peak Relay Replacements – Transfer Breaker and Bus Differential for (FY18-FY19)

- Total Estimated Budget \$400,000

Relay Replacement Program (FY18-FY26)

- Total Estimated Budget \$200,000 per FY

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Desert Southwest Region FY18 and Out Years

Protection Projects

WIN/CIP7 Security Encryption Relay Program (FY18 - FY20)

- Total Estimated Budget \$20,000 per FY

Glen Canyon/Powell Meter Replacement Revenue and Panel FY18 – New Project


- Total Estimated Budget \$150,000

Pinnacle Peak Meter Replacement Revenue and Panel FY19 – New Project

- FY19 Total Estimated Budget \$175,000

Meter Replacement Revenue and Panel Program (FY20 – FY26)

- Total Estimated Budget \$50,000 per FY; Reduced from \$100,000
- Locations: Powel, Sigurd, Slavens, Garkane

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Desert Southwest Region FY18 and Out Years

Protection Projects Continued

PRC-002-2 Communication Digital Monitoring Equipment Upgrades Program (FY18 - FY26)

- Total Estimated Budget \$200,000 per FY

Relay Line Replacement 69kV Glen Canyon Substation (FY18 - FY19)

- Total Estimated Budget \$450,000

Relay Line Replacement Kayenta (FY20)


- Total Estimated Budget \$300,000

Pinnacle Peak Relay Replacements – Transfer Breaker and Bus Differential for (FY18 - FY19)

- Total Estimated Budget \$400,000

Relay Replacement Program (FY18 - FY26)

- Total Estimated Budget \$200,000 per FY; Reduced from \$300,000

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Desert Southwest Region FY18 and Out Years

Construction Projects

Pinnacle Peak Replace Shunt Capacitor Bank (FY18-FY22)

- Total Estimated Budget TBD by pending AoA Study

KV2D 24/4-kV Transformer Replacement (FY18-FY19)

- Total Estimated Budget TBD by pending AoA Study

As Part of Asset Management Strategy the Evaluation of:

Replacement of 6 Bypass Breakers (FLG 194 & 594, KAY 1086 & 1386, and PPK 2192 & 2299) (FY19-FY21)

- Total Estimated Budget \$3,410,000

Replacement of GC 345kV Breakers (1292, 3492, 5596, 5682) (FY20-FY22)

- Total Estimated Budget \$2,700,000

Replacement of PPK 345kV Breakers (2199, 2292, 1196, 1492) (FY20-FY22)

- Total Estimated Budget \$2,700,000



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Desert Southwest Region FY18 and Out Years

Construction Projects Continued

Replacement of GC 230kV Breakers (7482, 7282, 8082) (FY21 - FY23)

- Total Estimated Budget \$1,500,000

Replacement of PPK 345kV Breakers (1596 & 1692) (FY21 - FY23)

- Total Estimated Budget \$1,350,000

Replacement of GC 345kV Breakers (194 & 594) (FY23 - FY25)

- Total Estimated Budget \$1,350,000

Replacement of GC 345kV Breakers (1092, 1196, 3292) (FY24 - FY26)

- Total Estimated Budget \$2,025,000

Replacement of GC 230kV Breakers (7682, 7982) (FY24 - FY26)

- Total Estimated Budget \$1,000,000



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Desert Southwest Region Analysis of Alternatives Studies



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Desert Southwest Region Analysis of Alternatives Studies

Pinnacle Peak and Flagstaff Series Capacitor Bank Maintenance Breaker (FX) Replacement

- Project scope has changed from single pole motor operated switches to a FX breaker design scheme
- Project is pending completion of an AoA Study



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Desert Southwest Region Analysis of Alternatives Studies

Shiprock – Glen Canyon Reactor Project

- Currently in the Analysis of Alternatives Study phase



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Desert Southwest Region Analysis of Alternatives Studies

Shiprock – Glen Canyon Reactor Project

- System voltage study showed voltage disturbances resulting in operational issues and station equipment risks.
- An addition of 60 MVar of shunt reactance is needed to reduce post disturbance voltages.
- Evaluating alternatives in reactor types: air coil, oil filled, and variable shunt reactors.



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Desert Southwest Region Analysis of Alternatives Studies

Shiprock – Glen Canyon Reactor Project

- Conceptual design includes installing one 30MVar shunt reactor at Kayenta and one 30MVar shunt reactor at Long house.



Kayenta – North Side



Long House Valley – West Side



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Questions for Desert Southwest Region Office?



Thank you



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CRSP 10-Year Capital Improvement Plan
Power Marketing Update

November 2, 2016
Salt Lake City, UT

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Power Marketing Update

- Staffing Updates
 - Power Marketing Manager
 - Contracts and Energy Services Manager
- 2025 Marketing Plan for SLCA/IP
 - Sent for Publication
 - Will be sent to all customers/posted on Website
 - Begin Working on SLCA/IP FES contracts
 - Drafts and comments to be posted on Website

Proposed 2025 Marketing Plan/Criteria 2

Power Marketing Update

- Olmsted Proposed Marketing Plan
 - Near Publication
 - Information Forum/Comment Forum
 - To be held on same day in January
 - Meeting at Salt Lake City Federal Building
 - 90 Day Comment Period
 - Facility currently under construction/replacement
 - Power available -- July 2018

Proposed 2025 Marketing Plan/Criteria 3

Power Marketing Update

- Customer Meetings on RTO Activities

- Sent Notice on October 13 – email to customers
- Meetings scheduled for 3 hours, all begin at 9:00 a.m.
- WAPA will give updates on RTO discussions - requests customer questions and feedback
- Meetings to be held:
 - November 29 – DSW Office in Phoenix, AZ
 - November 30 – Tri-State’s Office in Rio Rancho, NM
 - December 2 – CRSP Management Center, SLC, UT
 - December 6 – CSO/HQ Office, Lakewood, CO