## 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

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Presenter(s)</th>
</tr>
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<tbody>
<tr>
<td>8:30 – 8:40</td>
<td>Welcome / Introductions / Logistics</td>
<td>Lynn Jeka</td>
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<td>8:40 - 8:50</td>
<td>Audience Preliminary Questions/Concerns/Etc.</td>
<td>All</td>
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<tr>
<td>8:50 – 11:00</td>
<td>CRSP 10-Year Plan Review</td>
<td>Lynn Jeka, Jason Groendyk, Nancy Ruiz and Cole Shinaman</td>
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<td>11:00 – 11:15</td>
<td>Power Marketing Updates</td>
<td>Brent Osiek</td>
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<td>11:15 - 11:30</td>
<td>Review Action Items</td>
<td>Amy Cutler/All</td>
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<td>11:30</td>
<td>Meeting Adjourn</td>
<td>All</td>
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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

FY 17-26 Rocky Mountain Region
Ten Year Plan

- Completed Projects
- Changed/Ongoing Projects
- New Projects
Completed Projects

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

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
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

- **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

- **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

- **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

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

Changes in Programmatic Improvements
**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

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**New Substation Projects**

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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 JICR
  - Anticipated ISD: FY19

- MOC Video Surveillance Upgrade
  - Construction underway
  - Overall budget $263k - $228k JICR
  - 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 JICR
  - 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 JICR
  - Anticipated ISD: FY20

Questions?
### Table: Transmission Lines

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<tr>
<th>Fund Type</th>
<th>Project</th>
<th>Region</th>
<th>Type</th>
<th>Project Code</th>
<th>Fund</th>
<th>Weighting</th>
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<tbody>
<tr>
<td>T-Line Equipment Replacements - General (CRSP)</td>
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<td>Ault 345 kV Surge Arrestors (AU-CRG 345 kV line)</td>
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<td>Ault 230kV Breaker Replacement (1282)</td>
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<td>Ault 230kV Breaker Replacement (1582)</td>
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### Table: Control, Protection and Metering

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### Table: Mobile and Heavy Equipment

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*Note: Weighting factors reflect project ranking criteria.*
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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
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

Desert Southwest Region
Integrated Vegetation Program

INSERT VIDEO

Desert Southwest Region
Integrated Vegetation Management
Next Steps

Example of a Category 2 Danger Tree that needs to be removed
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

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

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
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

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

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
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

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
- PFF $42,637; GCS $50,886; JHV $15,515; KWF $21,133
- FY17 budget: $32,000
- Total estimated budget: $190,656

Desert Southwest Region
Active Projects

Microwave System Upgrades
Project establishes a new communication path and increases reliability
- Preston Mesa – Jacks Peak
  - Significantly 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
    - DSW is analyzing the existing tower at Glen Canyon for potential utilization with the upgraded equipment
  - Anticipated ISD: TBD
Desert Southwest Region
Active Projects

APS tower site at Jack's Peak

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

Desert Southwest Region
Active Projects

Mingus Mountain Communication Building
- Building was analyzed by engineer and deemed structurally unsound.
- DSW repurposed the existing EDS 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
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

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
Desert Southwest Region FY17 New Starts

Glen Canyon Erosion and Waterline Project – Phase II
Project conceptual budget
- Hydrology Study & design: $300,000
- Construction contract: $2,300,000
- Total estimated budget: $2,600,000

Desert Southwest Region FY17 New Starts

Glen Canyon Warehouse/Workspace
- Bureau of Reclamation is planning a new warehouse building project
- Control Building Space constraints (Control Panels, Comm/IT Racks, & scanners as well as CIP Requirements (CIP-6 Physical Security of BES Cyber Systems)
- Stand alone Service Center for Protection, Station, Communication as well as external storage space for materials & equipment. Est. 10,836 sq. ft. footprint
- Total estimated budget: $3,800,000
- Anticipated ISD: Q1 FY20
Desert Southwest Region Project Plan FY18 and Out Years

Substations Project
Test Equipment (FY18-FY26)
• Total Estimated Budget $60,000 per FY

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
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

Desert Southwest Region
FY18 and Out Years

Protection Projects
WIN/CIP 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: Powell, Sigurd, Slavens, Garkane

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
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

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

Desert Southwest Region
Analysis of Alternatives Studies
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

Desert Southwest Region Analysis of Alternatives Studies

Shiprock – Glen Canyon Reactor Project
- Currently in the Analysis of Alternatives Study phase

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.
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.

Questions for Desert Southwest Region Office?

Thank you
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

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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
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 – CRSIP Management Center, SLC, UT
    • December 6 – CSO/HQ Office, Lakewood, CO