

WESTERN AREA POWER ADMINISTRATION

CRSP 10-Plan Presentations

November 9, 2015



Rocky Mountain Region Ten Year Plan Version Control

- **R0**-version of Ten Year Plan submitted to customers and to headquarters for consolidation of Western-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 Western-wide budget submission to the Dept. of Energy; April

FY 15 Rocky Mountain Region Maintenance Projects

- New System Operation Methodology
- Completed Projects
- New Projects
- Changed Projects
- Ongoing Projects

Transmission Operator Methodology Changes

- September 2011 Western grid outage
- Revised System Operating Limit (SOL) Methodology-August 2013
 - If the next single contingency will result in a voltage or thermal overload, PEAKRC requires pre-mitigation:
 - Load shedding
 - Generation curtailment (or increase); reactive device changes including generation redispatch
 - Reduction of scheduled power, may require purchase of power at spot market prices

Transmission Operator Methodology Changes

- Western plans and designs its system to operate through a single contingency without loss of load (TPL standards).
- Western Operations studies and controls the system to perform through multiple contingencies. (TOP standards)
- Potential projects to address operational compliance standards
 - Curecanti 2nd 230/115 kV transformer
 - Midway 230 kV bus configuration

FY 15 Rocky Mountain Region Maintenance-Completed Projects

- Flaming Gorge 69 kV Switch Replacements
 - Replaced 7 switches, 1963 vintage
 - In-Service Date: Q2 2015
 - Total Cost: \$195k, excludes IDC
 - Budget: \$243k
- Gore Pass-Hayden 230 kV Uprate Term Eqmnt
 - Replaced 2 switches, 2 CTs to 2000 A rating
 - In-Service Date: Q4 2015
 - Total Cost: \$58k JJCR, \$257k JJCR/Trust, excludes IDC
 - Budget: \$69k JJCR, \$291k JJCR/Trust

FY 15 Rocky Mountain Region Maintenance-Completed Projects

- Hayden KZ2A 230/138 kV, 250 MVA Transformer
 - Replaced 150 MVA to match KZ1A at 250 MVA
 - In-Service Date: Q4 2015
 - Total Cost: \$7,374k, excludes IDC
 - Budget: \$6,909k
- Montrose Digger Derrick
 - Replaced 1981 digger truck, 26k miles, worn/dysfunctional outriggers, hazardous use
 - Budget/total cost: \$610k

FY 15 Rocky Mountain Region Maintenance-Completed Projects

- Buffalo Pass Communications Building Replacement
 - Replaced aging end of life building
 - In-Service Date: Q4 2015
 - Total Cost: \$1,010k, excludes IDC
 - Budget: \$350k

New JJCR Projects in the FY16-25 TYP

- Archer Station Service Replacement
 - Replace 1964 vintage switchgear and controls; auto-throw over switch non-functional
 - Est. Cost: \$585k
 - Est. In-Service Date: Q2 2018
- Ault Station Service Replacement
 - Replace 1980 vintage station switchgear, controls, and transformers which has a history of failures and nonfunctional equipment
 - Est. Cost: \$940k (JJCR \$183k)
 - Est. In-Service Date: Q4 2016

New JJCR Projects in the FY16-25 TYP

- Ault KW1F/KW1G, 2-25 MVAR Reactor Replacement
 - Replace failed KW1F and twin KW1G prior to KU1A replacement (AM supported)
 - Est. Cost: \$711k (JJCR cost \$455k)
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2017
- Ault 345 kV Surge Arrestors (AU-CRG 345 kV line)
 - Needed for minimum approach distances(new OSHA) and aids in fault location determination
 - Est. Cost: \$50k (JJCR cost \$18k)
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2016

New JJCR Projects in the FY16-25 TYP

- Shiprock Substation-new Control Building
 - Existing building has full cable trays, is at maximum capacity, and has asbestos; includes 345 kV yard and transformer; batteries, air control, communication
 - Est. Cost: \$2,581k potential trust of \$500k
 - Mitigation: Replacement, with/without Trust support
 - Est. In-Service Date: Q4 2019

New JJCR Projects in the FY16-25 TYP

- Shiprock Substation-Move 230 kV Eqmnt & Controls
 - Purchase panels and controls, install in new building
 - Est. Cost: \$1,861
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2020
- Shiprock Substation-Move 115 kV Eqmnt & Controls
 - Purchase panels and controls, install in new building
 - Est. Cost: \$1,158
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2021

New JJCR Projects in the FY16-25 TYP

- Weld Substation 230 kV Breaker & Half
 - Modify the four terminal main/transfer configuration to breaker and half to increase system reliability for the N-1 that overloads 2-115 kV lines.
 - Est. Cost: \$2,580k
 - Est. In-Service Date: Q4 2023
- UHF Radio Replacements
 - Replace existing polling radios at the end of their useful life.
 - Est. Cost: \$850k, JJCR \$35k
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2021

New JJCR Projects in the FY16-25 TYP

- MOC Pressure Digger Truck Replacement
 - Replace 1994 pressure digger truck, 15k miles and low usage as incorrect truck for high voltage t-lines; will trade in
 - Est. Cost: \$325k
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2018
- SHR 72 ft Manlift Aerial Elbow Bucket Truck(Repl. 40 ft)
 - Replace 1979 elbow bucket truck, worn/sloppy hydraulics, 21k miles, at end of life
 - Est. Cost: \$125k
 - Mitigation: Replacement
 - Est. In-Service Date: Q4 2018

Changed JJCR Projects in the FY16-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Dolores Transformer Project (TRUST)	\$1350	\$0	Slid a year to FY 16-17
Shiprock 230 & 345 kV POD (TRUST TSGT Interconnection and 3 Rivers)	\$3,781	\$0*	Slid a year to FY 20; *land use
Ault 230 kV CB 1482 & 1586	\$564	\$285	Project slid to FY18 to align replacement with Ault KU1A (high/low side CBs)
Shiprock (3262, 3362, 3462) PCB 115- kV Replacement	\$577	\$577	Breakers purchased in FY15, ISD FY16
Ault-Weld West OPGW	\$566	\$566	\$38k increase with updated estimate

Changed JJCR Projects in the FY16-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Island Lake Comm Building	\$750	\$750	\$250k increase of estimate based on recent bid openings
IT General Support Systems	\$622	\$622	\$155k increase in JJCR costs spread over FY14-23
Mobile Radio Infrastructure Replacements	\$1,300	\$650	Slid to FY17 to accommodate shifting COMM projects

Changed and Ongoing JJCR Projects in the FY16-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Ault 345 kV CB 692, 696, 1096 <ul style="list-style-type: none"> • In design, CB ordered • ISD Q4 FY16 	\$1,802	\$270	Customer funding slid schedule and in-service date, shifted ISD to 2017
Shiprock Stage 07 230 kV Main and Transfer Bus Uprate <ul style="list-style-type: none"> • In construction • ISD Q3 FY16 	\$1,208	\$1,208	\$720k decrease with bid; \$400k shifted to FY16 for project completion
Waterflow PST KU1A-KU1B and CB replacement <ul style="list-style-type: none"> • In construction • Delay of PST delivery to 1/16 • ISD Q2 FY16 	\$15,058	\$15,058	\$450k shifted to FY16 for project completion and closeout.

Changed and Ongoing JJCR Projects in the FY18-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Weld 362,1262 (115-kV) CB, 182, 286, 482 (230kV) Replacement <ul style="list-style-type: none"> • In design • ISD 	\$1,669	\$1,669	\$954k increase added construction contract for installation in FY16 due to maintenance resource limitations
Archer KV2A 230/115 kV, 200 MVA Xfmr <ul style="list-style-type: none"> • 90% spec review • Delay-xfmr procurement • ISD Q1 FY17 	\$3,200	\$3,200	\$282k increase to include high/low side CB 482 & 1762; 1980 vintage, high PCB bushings
Curecanti KZ1A 230/115 kV 150 MVA Replacement <ul style="list-style-type: none"> • In construction • ISD Q4 FY16 	\$2,287	\$2,287	\$471k decrease, utilizing a used xfmr from Hayden.

Changed and Ongoing JJCR Projects in the FY18-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Montrose-Mexican Hat MW Rep. <ul style="list-style-type: none"> Resource limited ISD Q4 FY16 	\$1,601	\$1,601	\$132k increase, funds shifted for FY16 completion and closeout
Poncha-Midway OPGW <ul style="list-style-type: none"> Raptor nesting delayed construction ISD Q2 FY16 	\$3,156	\$1,598	\$566k increase due to assembly issue in design and raptor delays; shift in ISD and funds to FY16 for completion/closeout
Blue Mesa-Montrose OPGW <ul style="list-style-type: none"> Restriction in construction due to sage grouse/bird nesting ISD Q1 FY16 	\$1,883	\$758	Shifted \$25k to FY16 for project completion and closeout.

Changed and Ongoing JJCR Projects in the FY18-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
MOC Station Service Upgrade <ul style="list-style-type: none"> In design ISD Q1 FY17 	\$909	\$909	\$469k increase for stage 3 & 4, construction contract, excavation of 1965 vintage conduit for replacement, transformer installation
Central PMOC Communications Loop <ul style="list-style-type: none"> Resource limited delayed completion ISD Q3 FY16 	\$2,713	\$666	\$126k increase, funds shifted to FY16 for completion and closeout

Changed and Ongoing JJCR Projects in the FY18-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Collbran 115 kV CB 362 Replacement <ul style="list-style-type: none"> • Delay from underground cable issue • Resource limited • ISD Q4 FY16 	\$231	\$231	\$90k increase, underground conduits were asbestos, required new conduit/excavation installation; funds in FY16 for completion and closeout
Blue Mesa 115 kV CB 1066,1162 Replacement <ul style="list-style-type: none"> • ISD Q4 FY15 	\$357	\$357	\$63k increase, difficulty with removal due to tight physical layout of substation; funds in FY16 for closeout

Changed and Ongoing JJCR Projects in the FY18-25 TYP

Project	Total Cost x1000	JJCR Shared Cost x1000	Change
Archer KV1A 230/115 kV, 200 MVA Xfmr Replacement <ul style="list-style-type: none"> • Xfmr delays due to procurement, radiator damage and replacement time (x2) • Resource limited • ISD Q1 FY16 	\$3,203	\$3,203	\$477k increase due to contract delays, correction of as-built conditions of control panels and building

Questions for RMR Maintenance Office



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