Red Mountain Bar Pumped Storage Project

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Energy Strategy Manager



Red Mountain Bar

- Located 10 miles south of Sonora in Tuolumne County
- Utilizes Don Pedro Reservoir as a lower pool
- Primary Components
 - Upper Reservoir
 - Water Conveyance System
 - Underground Power Complex
 - Transmission Lines





Red Mountain Bar



Main Dam Site



Footprint of the Main Dam Site

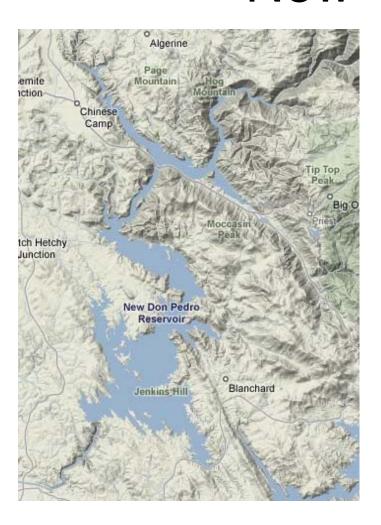


Upper Reservoir

- Main Dam
 - Concrete Faced Rockfill Dam (CFRD)
 - 430 ft Max Height
 - 1,800 ft long across the crest
- Four Saddle Dikes
 - Roller Compacted Concrete (RCC)
 - Ranging in size:
 - 30 ft 70 ft Max Height
 - 200 ft 600 ft Length
- Storage 42,144 AF



Lower Reservoir "New" Don Pedro



- Owned by TID and MID
- Operated by TID
- Storage 2,030,000 AF
 - 830 ft Elevation
- For Planned Pumped Storage Operations
 - Max Elevation 830 ft
 - Min Elevation 750 ft
- 50% Exceedance Elevation
 796 ft

Powerhouse

- Single Speed
 - 900 MW total capacity
 - 232 MW 288 MW Capacity/Unit
 - 303 MW Pump Input Power
 - Average Energy
 Storage Capacity of
 15,000 MWh to
 18,800 MWh
 depending on Don
 Pedro Elevation
 - \$1.7 Billion

- Variable Speed
 - 1,000 MW total capacity
 - 260 MW Capacity/Unit
 - 310 MW Pump Input Power
 - Average Energy
 Storage Capacity of
 19,000 MWh to
 22,000 MWh
 depending on Don
 Pedro Elevation
 - \$2.1 Billion



Why Pumped Storage?

- Renewable Integration
 - Renewable Portfolio Standard Requirements
 - Green House Gas Legislation
- Direct Energy Transfer
 - 75% to 82% Turnaround Efficiency
- Capacity Benefit
- Operational Efficiency Enhancements
- Grid Stability



Process

- Feasibility Study
 - Completed August 2008
- Economic Analysis
 - Spring 2009
- Pilot Tunnel
- License Application



Questions?

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