

**Lake Elsinore  
Advanced Pumped Storage (LEAPS)  
Project  
◆  
Talega-Escondido / Valley-Serrano  
(TE/VS)  
Transmission Project**

Presentation to  
**STEP Meeting**  
January 24, 2006



**THE NEVADA HYDRO COMPANY, INC.**



# LEAPS and TE/VIS

- Innovative, private-sector solution to State's electrical generation and transmission needs
- 500-MW renewable energy resource storage
- Public lands solution with Forest Service support
- Expands interstate grid and reliability
- Draft EIS due from FERC in February 2006
- In-service 2007 (transmission) and 2009 (generation)
- Strong local, regional, and federal support
- State agencies may impede performance



# Project Location

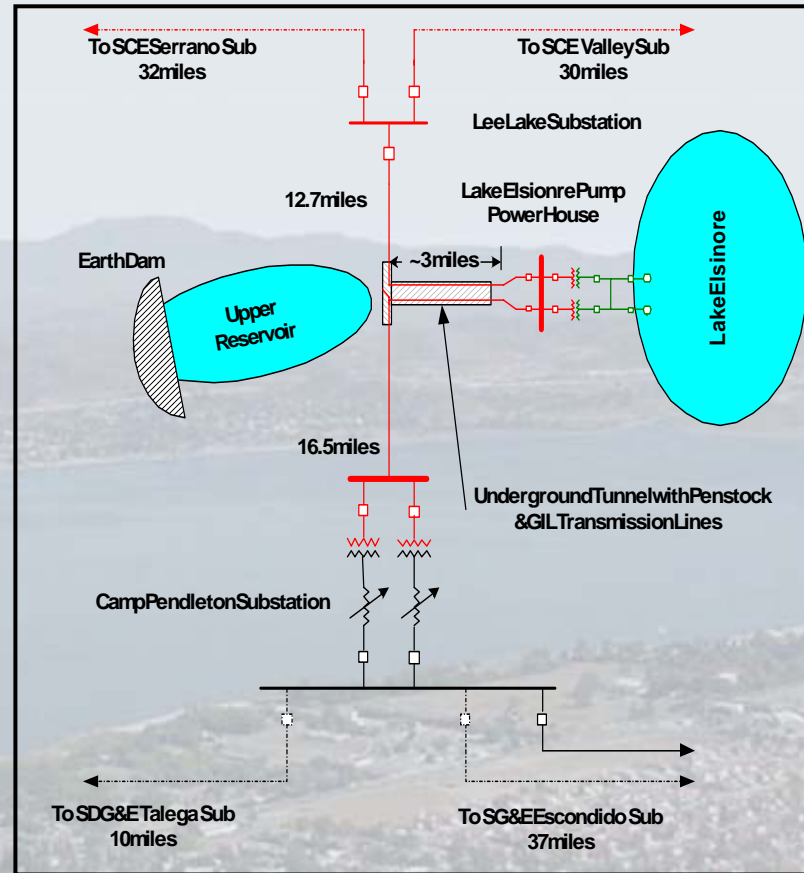
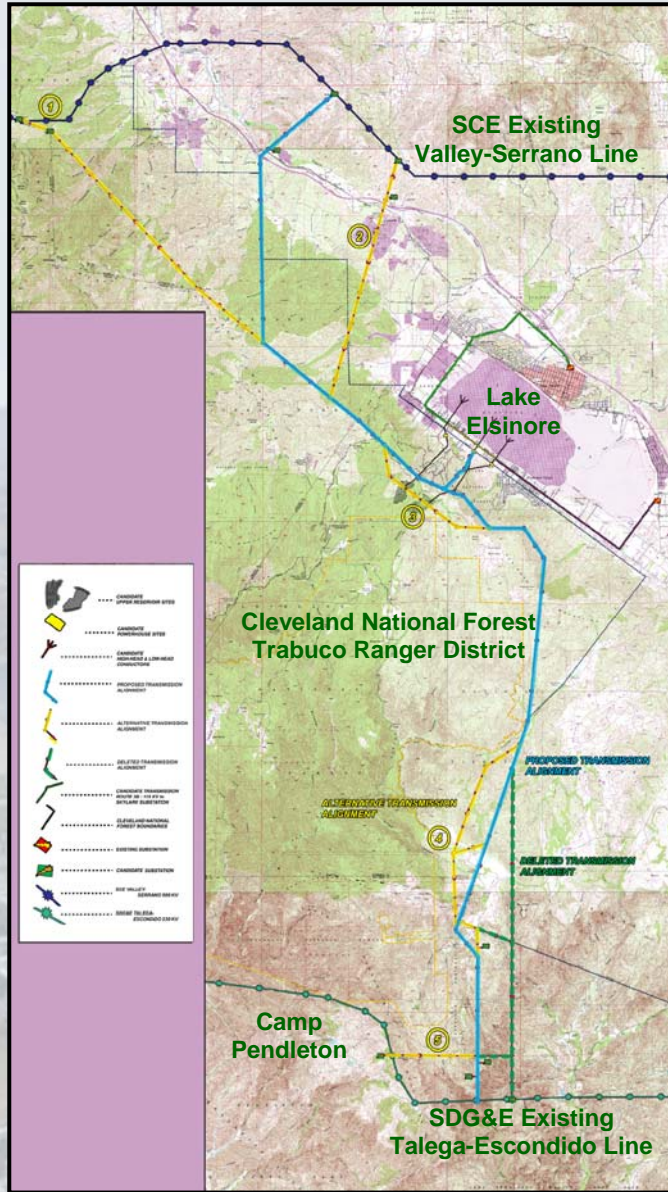


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Elsinore Valley Municipal Water District

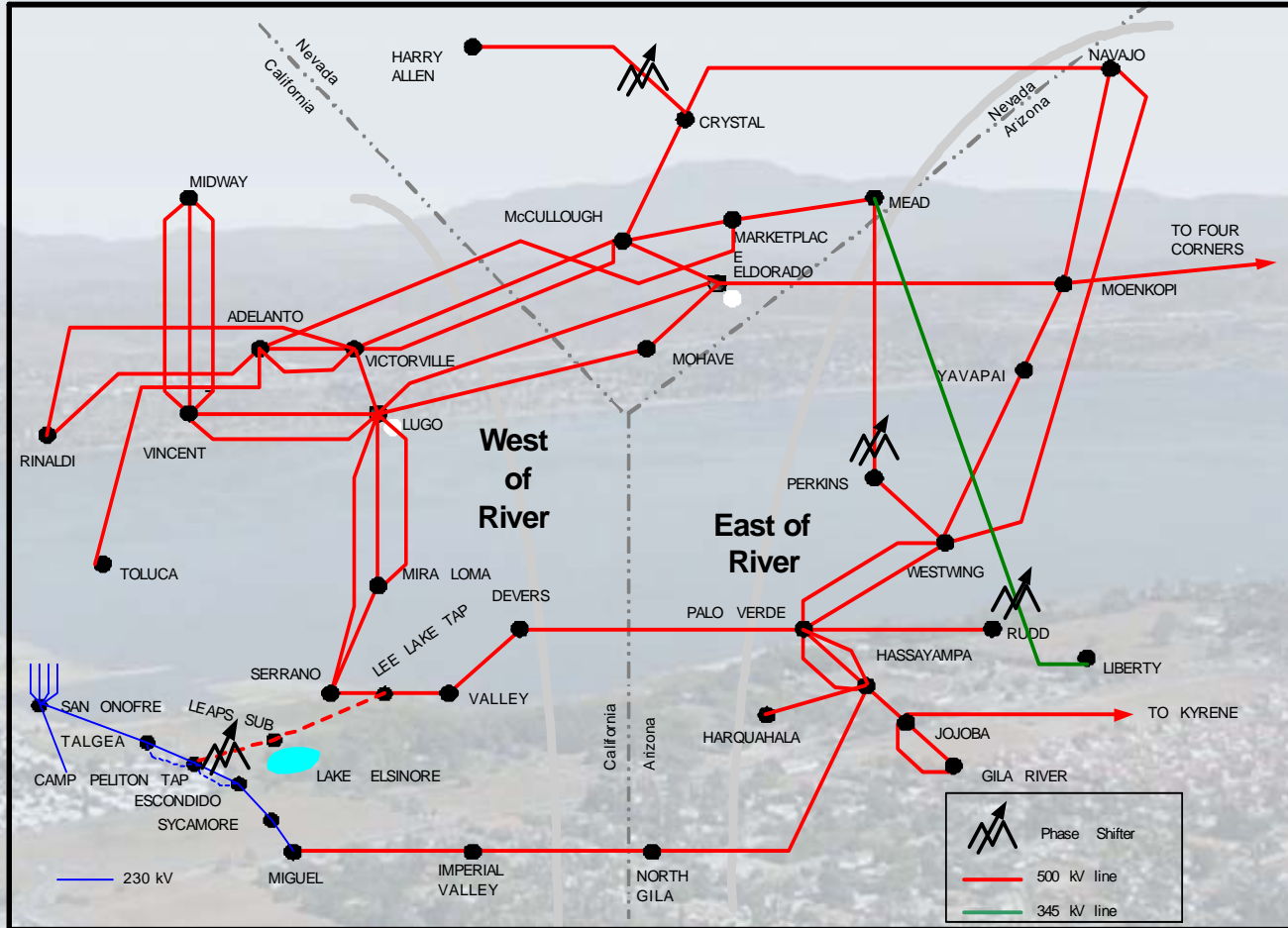
# Transmission Line



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# System Map and Connection



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# LEAPS Performance

- 83.3% wire-to-wire efficiency
- Daily maximums:
  - Generation: 12 hours at 500 MW
  - Storage: 12 hours at 600 MW
  - Nominal Storage: 6,000 MW Hours
- Fully dispatchable in 15 seconds
- Operates for up to 18 continuous hours in response to an emergency



# Project Status

- Final License Application accepted by FERC February 2005
- System Impact Study (SDG&E/SCE/CAISO) initiated September 2005
- Engineering is under way on 500 kV transmission system and substations. Two design teams presently are in the field
- Draft FERC joint EIS is being printed, and will be published by February 6, 2006
- Negotiations on the final 4(e) license conditions will begin on March 10, 2006
- Final EIS, and license conditions are expected in June 2006
- Siemens must receive NTP by July 2006, to make in-service date of late 2007. Long lead items will be placed on order prior to NTP.



# Public Benefits

- Private investment solution to regional energy needs
- Authorized use of public lands with minimal impacts on private property
- Federally permitted outside of CPUC process
- Improve water quality and stabilize level of Lake Elsinore
- Provides added recreational benefits
- Provides electricity without creating air emissions
- Storage of renewable energy resources
- Substantial local and regional economic benefits
- Major cost savings to ratepayers
- Project can be completed in a real time frame



# Grid Benefits

- Store off peak to sell on peak (renewables management)
- Dispatchable in 15 seconds (with units spinning)
- Black start in 10 minutes
- Full range of ancillary services
- Provides regulation, load following and voltage support
- Increased system reliability
- Management and conservation of renewable resources
- CAISO-operated facility operated for public benefit
- Advanced Transmission Technology under Energy Policy Act



# Partial List of Supporters

- Congressman Darrell Issa
- Congressman Ken Calvert
- Congresswoman Mary Bono
- Senator Dennis Hollingsworth
- Senator John Benoit
- Assemblyman Ray Haynes
- City of Lake Elsinore
- City of Canyon Lake
- Temecula Chamber of Commerce
- Murrieta Chamber of Commerce
- Lake Elsinore Chamber of Commerce
- Canyon Lake Chamber of Commerce



# Cost Summary

- LEAPS total cost  $\approx$  \$470 million
- TE/VS total cost  $\approx$  \$250 million
- Combined project cost  $\approx$  \$700 million



# Labor Benefits

- Daily labor force of between 300 – 600 workers
- 2,460 man-years of direct employment
- Over \$150 million in construction payroll
- \$2 billion in benefits to regional economy
- 6,400 man-years to direct and induced employment
- Partial list of construction trades required:

Carpenters

Crane Operators

Labor

Millwright

Plumbing

Steel

Civil

Electrical

Mechanical

Miners

Rigging

Trucking



# Key Team Members

- Elsinore Valley Municipal Water District
- Nevada Hydro Company
- Voith Siemens Hydro
- Siemens Power Transmission & Distribution



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