

COPPER VALLEY ELECTRIC ASSOCIATION

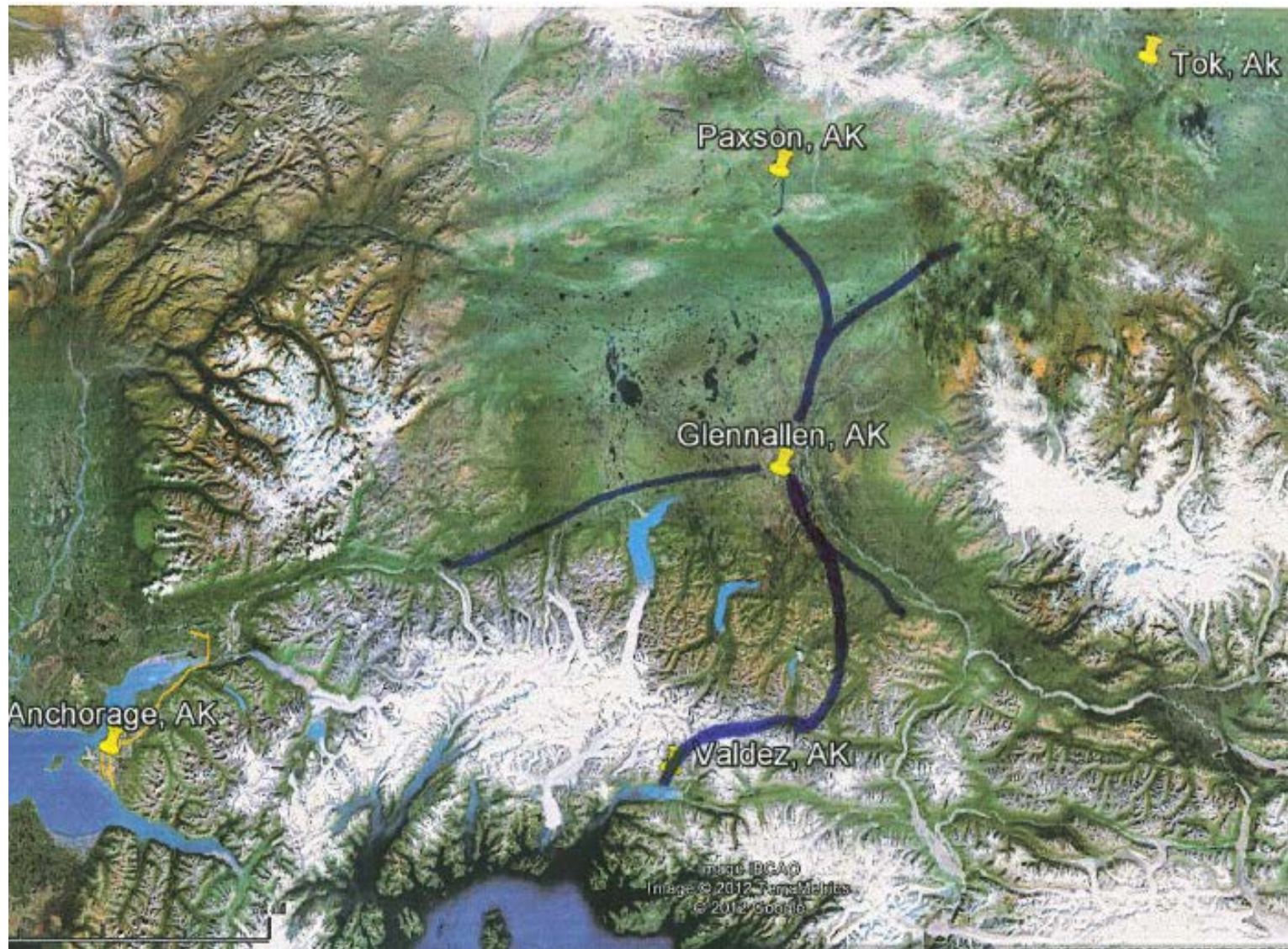
Travis Million
Chief Operating Officer

March 9, 2017

CVEA FACTS

- Cooperative Model
- 3750 Meters
- Assets \$150M
- Annual Revenues of \$20M
- Service Areas Copper Basin and Valdez
- 600 miles of Transmission and Distribution
- Staff of 44 employees

SERVICE TERRITORY



GENERATION PLANTS

- Solomon Gulch
 - Operational in 1982
 - 12 MW hydroelectric dam storage
 - 2 – 6MW Fuji Francis turbines
 - Overhauled in 2010 and 2012
 - Serves as the dispatch center
 - Manned 24/7
 - 55% of energy needs



GENERATION PLANTS

○ Allison Creek Hydroelectric Plant

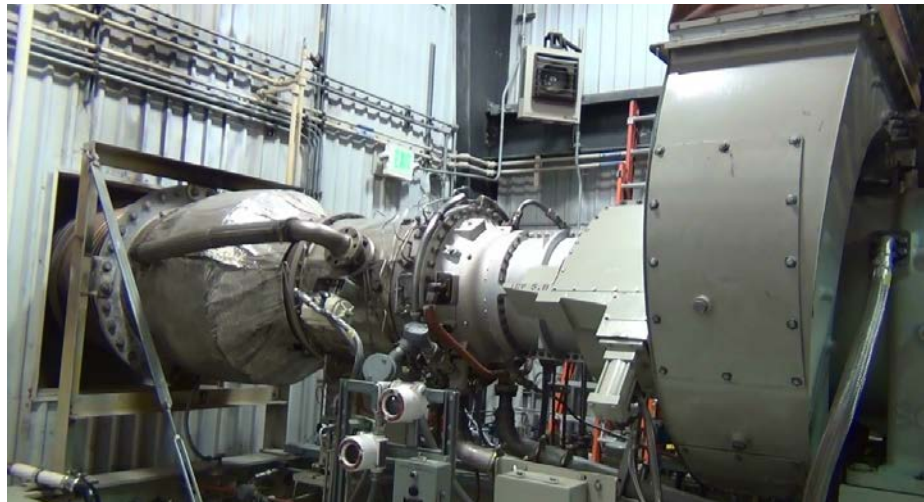
- Commissioned October 2016
- \$55M
- 6.5 MW Capacity
- Add 14% to Hydro Portfolio
- 1.2 Miles of Penstock
- Dual Valve Pelton Turbine
- 1200 feet of elevation
- 520 psi
- Peak production at 80 cfs



GENERATION PLANTS

◦ Cogeneration Project

- Operational in 2000
- 5.2 MW gas turbine
 - Solar Taurus 60
- Operates on Light Straight Run (LSR)
- Exhaust heat sold to Petro Star (crude heater)
- 25% of energy needs



GENERATION PLANTS

○ Valdez Diesel Plant

- Operational in 1964
- 5 – Diesel reciprocating units 600 kW – 2.4 MW
 - 2 – Units remotely operated from Solomon Gulch
- Replaced 4 units oldest units with (2) 2001 CAT-3516B units
- 3-5% of energy needs



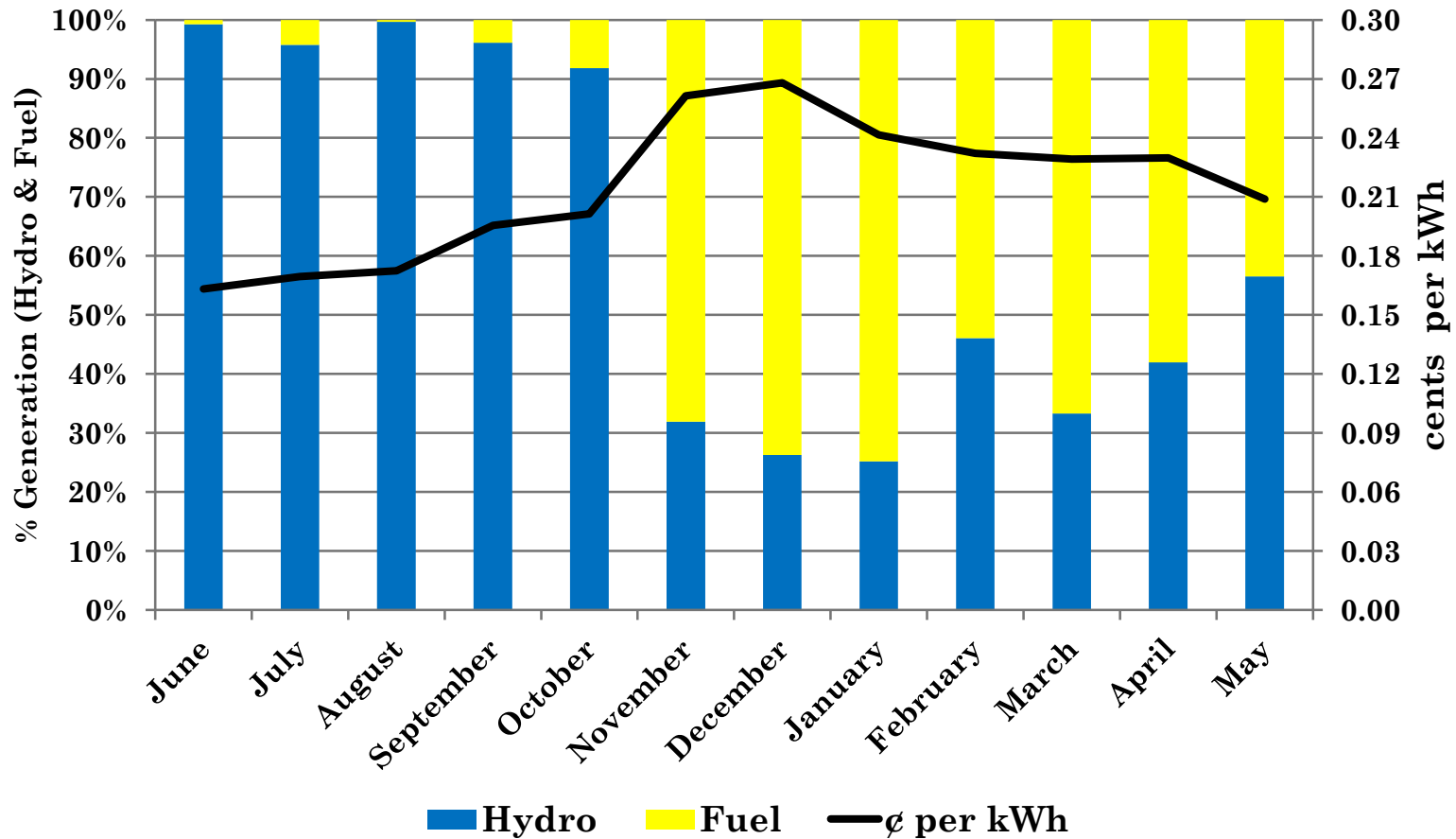
GENERATION PLANTS

○ Glennallen Diesel Plant

- Operational since 1959
- 7 – Diesel reciprocating units 600 kW – 2.8 MW
 - 4 – remotely operated from Solomon Gulch
- Age of units range from 1963 to 2008
- 3-5% of energy needs



Cost per kWh Hydro vs. Fuel (2016 Actual)



SYSTEM

- Substations

- 3 – Transmission
(P11, P12, Meals)
- 5 – Distribution
(Solomon, Allison, GDP, VDP, Heidenview)



- Transmission – 106 Miles 138kV transmission line (beginning at Meals ending at P11)
- Distribution – Over 500 miles of overhead and underground 25kV and 13.8kV distribution line

STAFFING

○ Valdez

- 8 –Power Plant Operators
- 3 – Linemen
- Office: Engineering, Operations, Customer Service

○ Glennallen

- 3 – Power Plant Operators
- 4 – Linemen
- Office: Accounting, Sr. Staff, Customer Service

MAJOR ISSUES/CHALLENGES

- Age of workforce
 - Have seen nearly 40% plant operator 33% linecrew retirement in the previous three years
 - Expecting 10-20% more in the next three to five years
- Age of diesel units
- Air quality issues and limitations
- Increasing regulations (FERC)
- Cost of liquid fuel to generate electricity
- Condition of T&D assets
- Weather and Terrain
- Rising cost of Labor and Parts
- Isolated Grid

MAJOR PROJECTS

- Communications & Controls Upgrade
 - Four year project to update current infrastructure and SCADA
 - Existing equipment is obsolete and at end of life
 - Completing in Summer 2017
- VDP Upgrade Project
- Transmission & Distribution inspection and inventory
- ROW Clearing
- New Valdez Boat Harbor
- Valdez URD Replacement

WHAT WE NEED

- Funding for Projects
- Connectivity to Railbelt Grid
- Reduced Regulatory Burden
- Streamline Permitting
- Reduction in Land Fees
- Any Support to Bring Energy Costs Down
 - Cheaper fuel
 - LNG
 - PCE
 - Debt Reimbursement

Questions