

NHA/NWHA Northwest Regional

Seattle

October 4 2011

Small Hydro Projects: Getting Projects Planned and Implemented

Steve Johnson

Central Oregon Irrigation District

Redmond, Oregon

**“ I want to stand as close to the edge as I can
without going over.**

**Out on the edge you see all the kinds of things
you can't see from the center.”**

Kurt Vonnegut, Jr.

Why Do Another Hydro?

➤ **Siphon Power Plant**

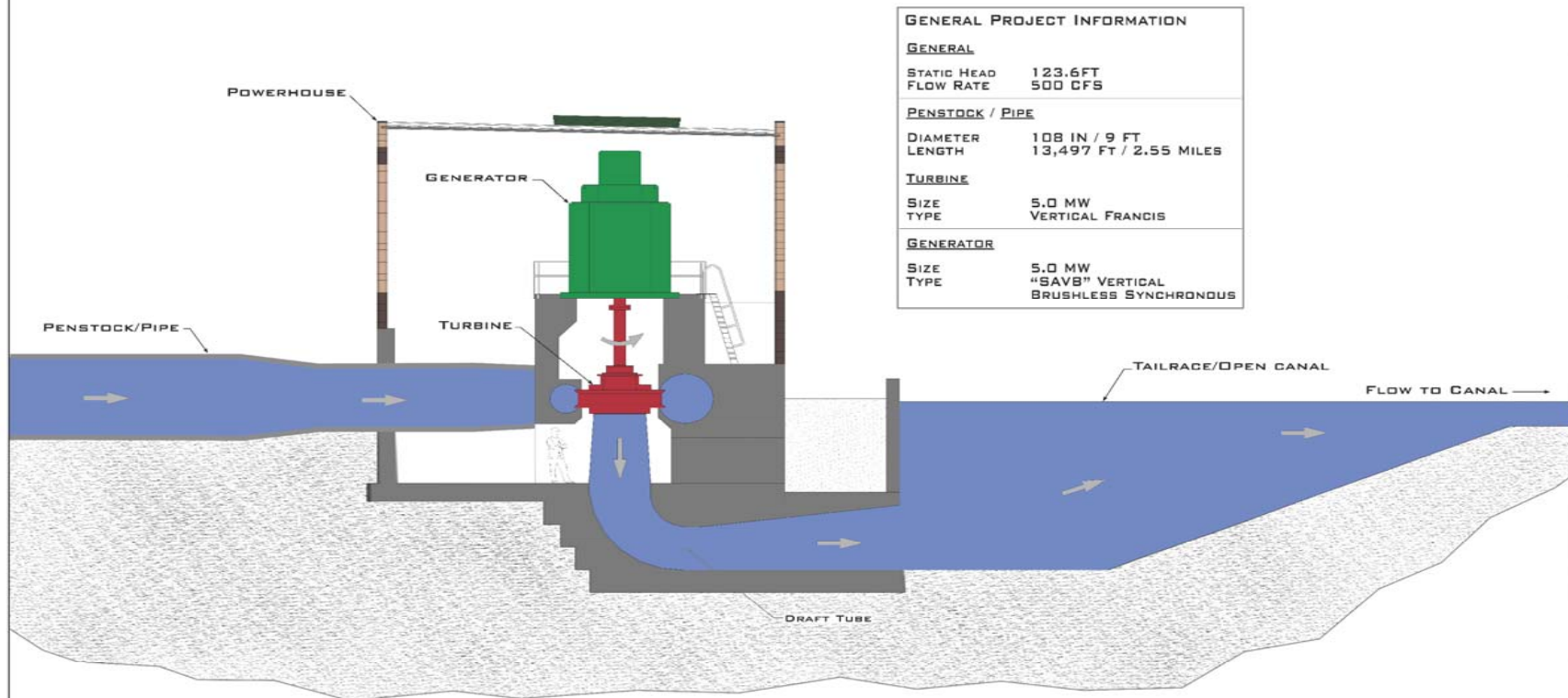
- Fully owned by District
- On line producing revenue since 1989
- Funded through ODOE SELP
- Debt obligation paid off in 2014
- Total revenue to date \$41MM
- Average revenue per year \$2MM
- Average “surplus” to COID per year \$400K
 - Offsets assessment increases to patrons
 - Funds irrigation infrastructure capital projects
 - After debt paid off – annual surplus to be \$1.5MM+

The Simple Beginning

- Project Feasibility Economics
 - 2.5 mile Penstock, Water conservation
- Site Location
- Interconnection Distance
- Financing Requirement
- FERC

JUNIPER RIDGE HYDRO PROJECT

JUNIPER RIDGE HYDROELECTRIC POWER GENERATION PROJECT



13277 S. BUSINESS PARK DRIVE, SUITE 220
DRAPER, UT 84020
TEL: 801.523.0100 • FAX: 801.523.0990
WWW.SUNRISE-ENG.COM

The Journey

- **FERC** – Conduit Exemption (8 months) Construction approval (2 weeks)
- **Site Location** – Acquire Fee Simple from State (2 years)
- **Zoning for Hydro-** County Code Change (2 years)
- **State License** – Legislative change for expedited process (7 months)
- **Hydro > 1 Meg** – Legislative change for Qualified Facility (7 months)
- **Cost Estimates** – Initial, Revised, RFP, Accepted Bid, Changes (Ongoing)
- **Funding** – SELP, BETC, OWEB, BOR, EPA/DEQ (Ongoing/Simultaneous)
 - Proformas, Presentations, Partners, Applications, Approvals
- **Utility** – Power Purchase Agreement (13 months)
- **Utility** – Interconnection Agreement (13 months)
 - + Interconnection Design Studies (6 months)
- **Contractor Selection & Award** – EPC Structure, Rank Bids, Award
 - Public Sector Contracting Statutes (6 months)
- **Legal Counsel** – 3 Different Firms for Specific Expertise (Ongoing)
- **Owner's Rep** – Mental Savior, Fellow Juggler, Comrade (Ongoing)
- **Synchronize All of the Above**

JUNIPER RIDGE HYDRO PROJECT

TIME FRAME:

October 6, 2009 Construction Begins
April 1, 2010 Piping Complete
September 30, 2010 Hydroelectric Complete & Online

MANUFACTURERS:

James Leffel & Company, Ohio
NW Pipe Company, Oregon
Ideal Electric Company, Ohio

CONTRACTORS:

Slayden Construction
Robinson & Sons, Sunrise Engineering, CF Malm Engineers

CONSULTANTS:

BlackRock – Owner's Representative
Black & Veatch

JOBS:

115 Jobs Created or Sustained

TOTAL PROJECT COST:

\$24,000,000

JUNIPER RIDGE HYDRO PROJECT

PARTNERS

STATE OF OREGON

Department of Energy

Department of Environmental Quality

Oregon Watershed Enhancement Board

DESCHUTES RIVER CONSERVANCY

U.S. BUREAU OF RECLAMATION

ENERGY TRUST OF OREGON

CITY OF BEND

PELTON FUND

Portland General Electric/

Confederated Tribes of Warm Springs

JUNIPER RIDGE HYDRO PROJECT

ENVIRONMENTAL PROFILE

WATER:

19.6 CFS of Water Permanently into The Deschutes River

Improved Water Quality (river temperature decreases)

POWER:

13 Million KWH of Green Power Produced Per Year

Which annually displaces 4,550 tons of carbon dioxide produced by Coal Plants and 2,600 tons of carbon dioxide produced by Natural Gas

1,300 Homes will receive electricity from this project

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