Power Production In Water Distribution Systems

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Bend, Oregon

Organized by the Northwest Hydroelectric Association

Sponsored by the Energy Trust of Oregon and the Oregon Department of Energy

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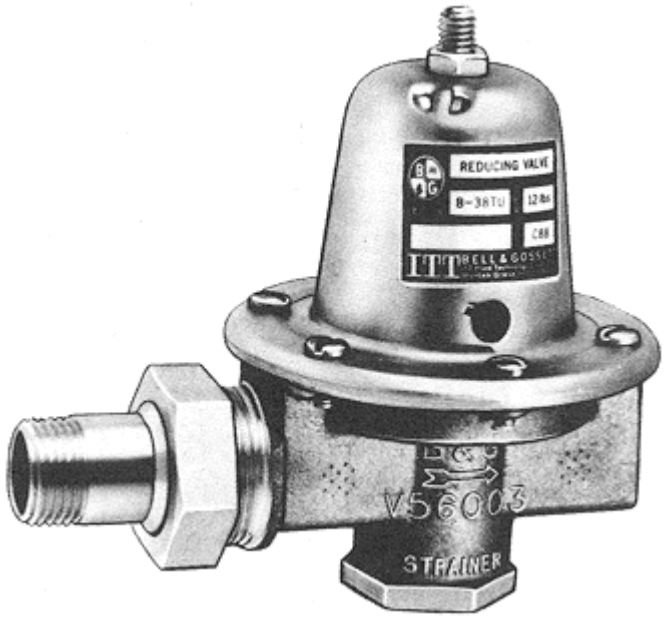
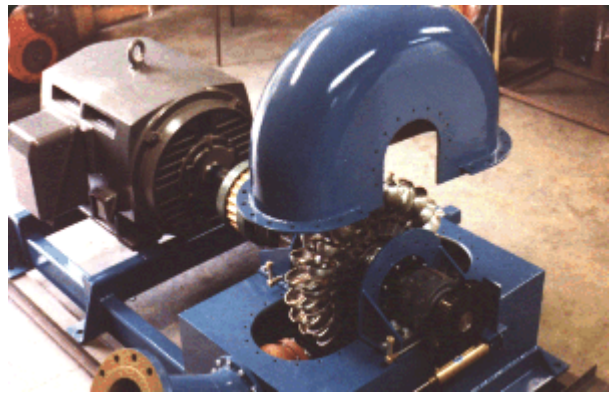
Pressure Reduction Valves

- Most water systems regulate water pressure with PRVs.
- The pressure drop across a PRV is wasted energy representing an opportunity to generate power.
- The power production system is usually installed in parallel with the PRV.
- The pressure reduction function will continue to operate even if there is an outage in the power system.



What to look for in choosing a site

- Significant pressure reduction (greater than 20 PSI).
- Significant continuous water flow.
- Vault with adequate space for power generating equipment
- Close proximity to power services.
- Generally, the bigger the pipe, the better. There is more potential with higher flow and head.

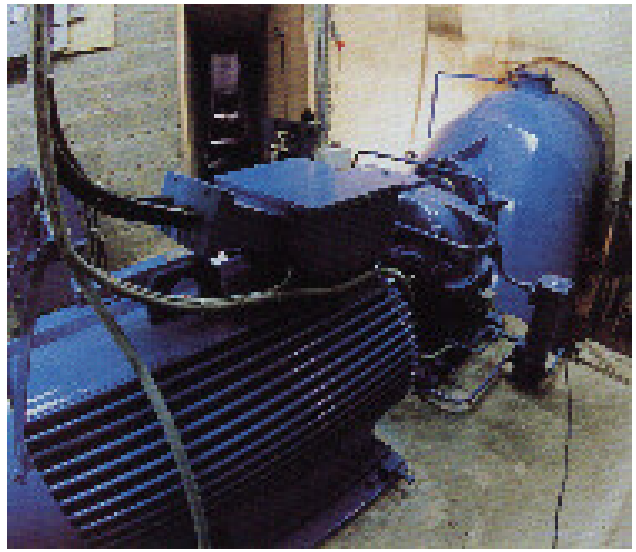


Benefits

- Emission-free power
- Can be a cost-effective source of onsite power
- One of the few opportunities to generate renewable power in an urban area
- Hydropower without fish impacts

Challenges

- Permitting paperwork (FERC exemption, Oregon Water Resources)
- Most water systems were designed to accommodate the water facilities only
- Power contracts and interconnection agreements



Challenges (cont.)

To overcome those challenges, we look for sites with:

- Extra space
- Nearby power connections
- Cooperative utilities

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