NorthWestern Energy
Delivering a Bright Future

Selling Mitigation to Operators & Management

NorthWestern’s Decision Support System:
A Madison River Thermal Pulse Program
NorthWestern Energy Hydro Projects

Map showing hydro projects in Montana:
- Thompson Falls
- Holter Dam
- Hauser Dam
- Madison Dam
- Mystic Lake Dam
- Hebgen Dam
- Great Falls Dams (5): Black Eagle, Rainbow, Cochrane, Ryan, Morony
Longstanding controversy peaked with 1988 fish kill related to elevated river temperatures.

Thermal studies started in early 90’s.

Alternatives evaluated during relicensing.

Madison DSS plan developed and finalized/filed with FERC in 2004.
• Madison River flows manipulated to maintain lower river temperatures <80°F
• Pulse volumes directed daily by an automated thermo-dynamic physics model when water temps >68°F
• Full pulse volume released from Madison Dam between 6:00 AM and Noon
• Releases from Hebgen used to balance Madison Reservoir
Madison has 1 foreman and 3 operators

- Responsible to operate and maintain Madison Project and Hebgen Dam

Directive emails sent to operators
- Preliminary at 2:30
- Final at 8:30

Operators get up early to start pulse, sometimes 2:00 AM

- Ramp pulse up hourly to final volume at 6:00 AM
- Ramp down starting at noon
Project is on the famed Madison River prized for its’ wild trout populations
- 296,000 angler days (#1 in MT)
- Total generated revenue: $146M

“Reasonable” PME Measure is relative

Madison thermal impact was the most contentious issue when relicensing the Missouri-Madison 2188 Project
- Licensed 9 facilities
What is there to sell?

• Protection of the public resource (valuable fishery)
• Protection of NWE’s image and stewardship record
• Alignment with NWE Mission & Values
• Ultimately, FERC license compliance
• Investment is significant.
• Staff time (& overtime) to implement pulses
• Lost generation from water released through bypass
• Outside contracted costs
BE TRANSPARENT

- Clearly state and communicate goals of the program
- Develop detailed standard operating procedures so everyone knows their roles and responsibilities
- Develop a communication strategy
- Openly discuss any program deficiencies
PROVIDE A FEEDBACK LOOP

• Provide an opportunity to review and discuss program status
• Solicit comments on process
• Listen intently
• Provide clear and concise responses
• Provide positive feedback and constructive criticism

How to get buy-in

• Provide resources to implement program successfully
• Facilitate communication
• Get to know everyone’s role
• Be empathetic to the challenges of the program
• Challenge everyone to identify opportunities for improvement
• Continually engage to show your invested
• Make difficult decisions and stick with them
CELEBRATE YOUR SUCCESSES!!!

• Take the time to celebrate as a team
• Acknowledge and give thanks for each member’s effort
• Focus on what was done well
• Highlight efforts to make the program better

https://medium.com/@gammons/the-importance-of-celebrating-success-with-your-team-4642a6a57f72
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