WALLA WALLA DISTRICT

SURFACE BYPASS

&

REMOVABLE SPILLWAY WEIRS
INTRODUCTION

- Walla Walla District Snake and Columbia River Projects

Pacific Northwest

United States
BACKGROUND

• Endangered Species / Regional Impacts
• Recovery Plan Options
  – Dam Removals
  – System Improvements
FISH PASSAGE ROUTES

- Juvenile Fish Passage Methods
  - Multiple Paths
  - Traditional Spill Currently Favored for In-River
TRADITIONAL FISH SPILL DRAWBACKS

- Fish Passage
  - Deep Spill Gates
- Water Quality
  - Exceeds 110% TDG
- Forgone Power
  - $186 Million Annually (LCR and LSR)
  - $40 Million Annually (LSR)
SURFACE BYPASS
SPILL ALTERNATIVE

• Fish Goals
  – Increase Passage Non-Turbine Routes
  – Increase Survival
  – Reduce Delay

• Water Quality Goals
  – Lower Dissolved Gas Levels

• Power Goals
  – Higher Revenues
SURFACE BYPASS DEVELOPMENT

• Columbia and Snake River Projects
  – Numerous Prototypes (mid 1990’s / early 2000’s)
  – Lower Granite Dam
LOWER GRANITE
PRE-RSW DEVELOPMENT

Site Plan
(1998-2000)

Powerhouse / SBC – Side View

BGS – Isometric View
LOWER GRANITE RSW DESCRIPTION
LOWER GRANITE RSW
OPERATING POSITION

Side View

Isometric View
LOWER GRANITE RSW
FLOOD CONTROL POSITION

Side View

Isometric View
HYDRAULIC EVALUATIONS

Field Measurements

Numeric Models

Physical Models
BIOLOGICAL EVALUATIONS

• Biological Methods
  – Radio Tracking
  – Hydroacoustics
  – Balloon Tags
  – Acoustic Tags / 3D Tracking
RESULTS AND BENEFITS

- Improved Fish Passage
  - Highly Efficient
  - Less Delay
  - Greater Survival Potential
- Better Water Quality
  - 120% to 110% TDG
- Increased Power Revenues
  - $13-20 Million Annual Savings (Four LSR Dams)
FUTURE

• Broad Regional Support
• Lower Granite RSW Normal Operations
• Ice Harbor RSW in 2005
• High Interest for Other Projects

Ice Harbor Dam
QUESTIONS?
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