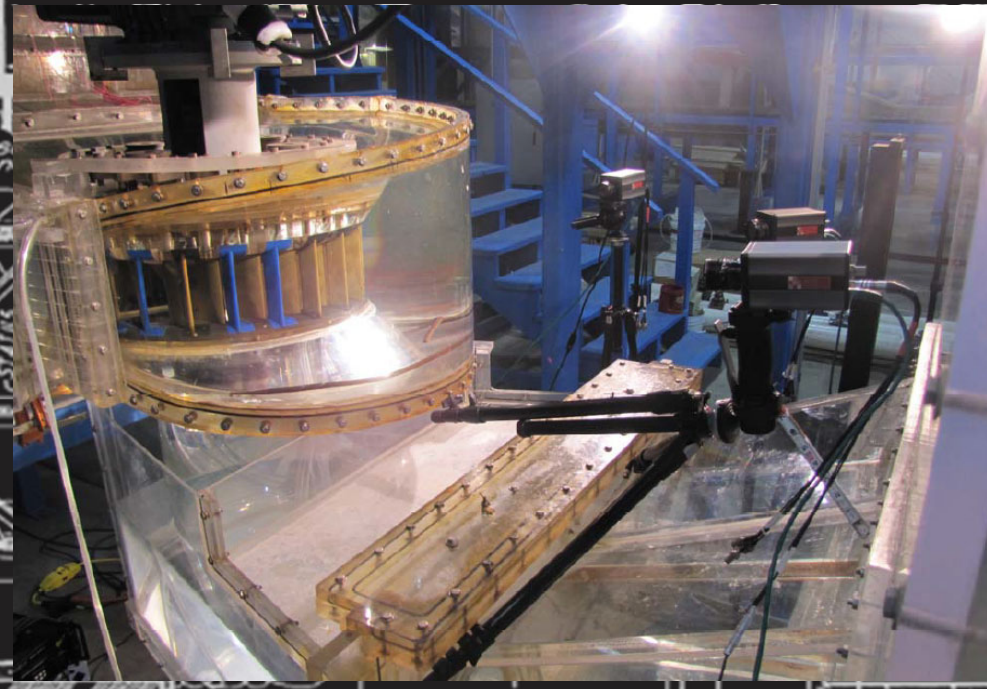


MCNARY TURBINE REPLACEMENT

AUGUST 2023 FFDRWG DESIGN STATUS
UPDATE

Jon Renholds
Senior Hydraulic Engineer
USACE Walla Walla District
August 8, 2023
Walla Walla, WA



U.S. ARMY
US Army Corps
of Engineers®



MCNARY TURBINE REPLACEMENT UPDATE

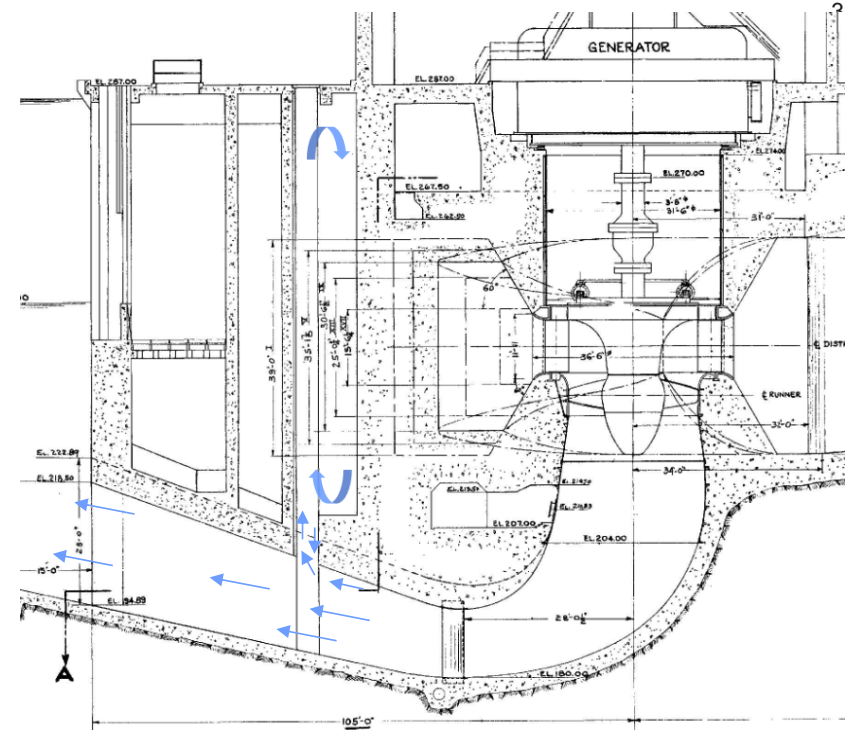
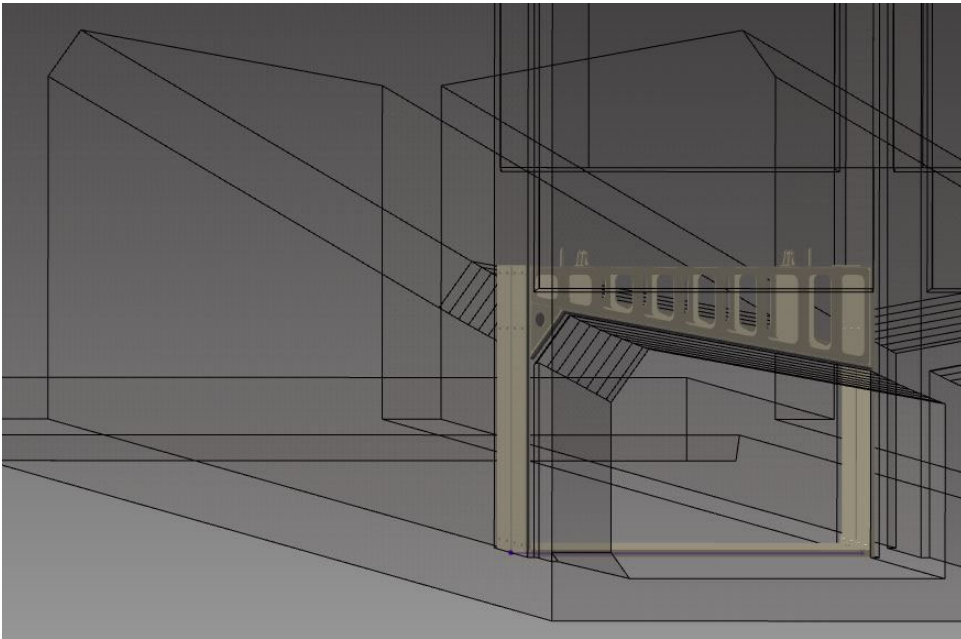
- **Adjustable Runner**
 - Turbine design selected and mechanical design near complete
 - Supplemental ERDC modeling Feb-Sept 2024 will provide more information to establish initial fish passage operating range
 - Runner Supply & Other Major Comp. thru ~ April 2025
 - First Adj. Runner Installation ~ May 2025 to May 2026
- **Fixed Runner**
 - F1 & F2 hydraulic design & performance modeling complete
 - F1 is 5 blade 280" and F2 is 4 blade 280" with smaller hub
 - ERDC In-Progress – F1~ September 2023, F2 ~ February 2024
 - Four iterations ~ April 2022 to April 2026
- **Unit Location**
 - Adjustable turbines in Units 9-14 and fixed turbines in Units 1-8
 - Replacement order mostly north to south but may be modified





DRAFT TUBE SLOT FILLER

- Reason
 - McNary draft tube stop log slots only project with slots in middle of draft tube instead of at the end
 - ERDC analysis indicates flow gets pulled into slot and recirculates which delays fish with some mortality



- Design Updated
 - Block top of slot above water flow but within ~ 1 - 3"
 - Gaps on edges targeted ~ 1 inch
 - Load rejection pressures required changed in design to window frame design
 - Still completing final shape of bottom member using ERDC input