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Numerical modeling of fish passage at the Lower Granite dam LARRY WEBER, Director of IIHR Hydroscience & Engineering, College of Engineering, University of Iowa, SONGHENG LI<sup>1</sup>, IIHR-Hydroscience & Engineering, College of Engineering, The University of Iowa, KEN HANSEN, Hydraulic Engineer, US Army Corps of Engineers, Walla Walla District Office, Walla Walla, Washington — Being the first collector dam on the Snake River, the Lower Granite Dam is important to juvenile fish downstream passage. To improve the performance of the Behavioral-Guidance-Structure(BGS), Surface-Bypass-Collector(SBC), and Removable-Spillway-Weir (RSW) on fish passage, numerical simulations have been conducted using the 3D CFD model developed at IIHR-Hydroscience & Engineering. The code solves the RANS equations with two-equation turbulence models. Multi-block structured grids were generated. The model was first compared in the total force and distribution on the BGS wall with the prototype data and the comparison gave a satisfactory agreement. Then runs with combinations of the BGS, SBC, RSW, trash boom, and loading of the units and spillway were conducted, and the primary flow patterns, pressure distribution on the BGS wall, velocity, and acceleration status of flow approaching the RSW were analyzed and compared.

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