

Project: McNary 1:55-scale Spillway General Model

PI: Bill Preslan

Branch/Group: Inland Hydraulic Structures Branch, Environmental Hydraulics Group

Project Description/Activities/Capabilities:

McNary 1:55-scale physical general model used to investigate performance of deflectors, stilling basin, and tailwater, and entrainment flows.

Sponsor: Walla Walla District. POC – Jim Cain

CHL Personnel: Bill Preslan, John Ashley, Van Stewart, Rusty Henderson

Project Location and Description:

McNary dam is located at River Mile 292, above the mouth, and raises the normal water surface about 85 feet. The dam is 7,365 ft long and rises approximately 183 ft above the streambed. It consists of a concrete structure with an earthfill embankment at the Oregon (south) abutment. The spillway is a concrete, gravity-type spillway dam. It is 1,310 feet long, and contains 22 vertical lift gates, each 50 ft by 51 ft. The crest is at elevation 291 mean sea level, which is designed to pass a design flood of 2,200,000 cubic feet per second. Spillway bays 3 through 20 have deflectors that are 12.5 ft long and are located at el 256 ft msl. The stilling basin is a horizontal apron-type with a double row of baffle blocks (10.5 ft high, 13.5 ft long, and 10 ft wide) and an end sill (10.5 ft high). The stilling basin is 270 ft long with an invert elevation of 228 ft. The McNary Powerhouse has 14 units of 70,000 kilowatts each, for a total capacity of 980,000 kilowatts. There are two fish ladders for migratory fish passage, one on each shore of the dam; and a powerhouse fish collection system.

Facilities: Bldg. 3050

Related Topic Areas: Physical models, flow deflectors, dissolved gas, entrainment flow, rivers, reservoirs, hydraulic structures, fish passage, surface water, hydropower, salmon survivability, debris movement



