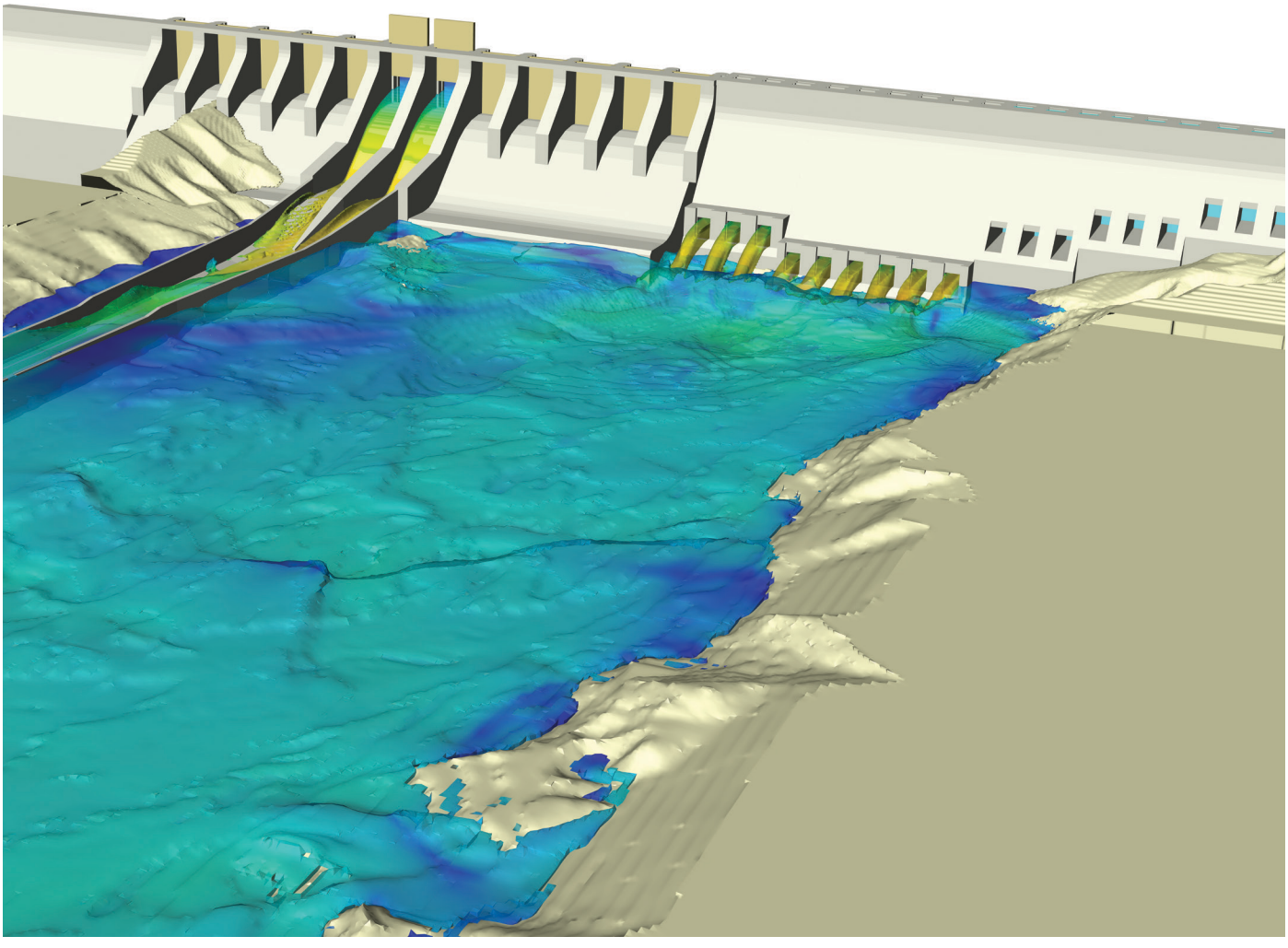
FLOW-3D® HYDRO

DAMS



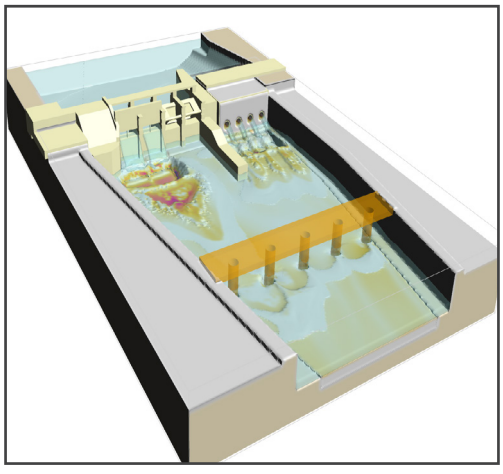
Hydroelectric power projects are sensitive to three-dimensional flow effects, and accurately predicting flow patterns is important for maximizing efficiency.

***FLOW-3D* HYDRO** is an industry leader in free-surface flow modeling, and is used by dam professionals to address a wide range of design problems for existing and proposed projects.

Common challenges that ***FLOW-3D* HYDRO** addresses include improving flow efficiency and distribution at intakes and spillways, performing complex environmental impact assessments of dams, and designing and optimizing fish passages.

FLOW-3D® HYDRO

DAMS

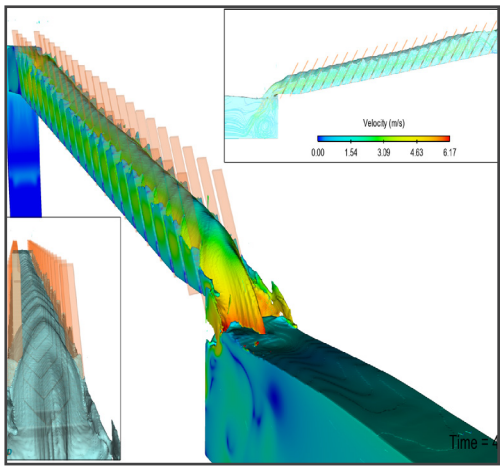


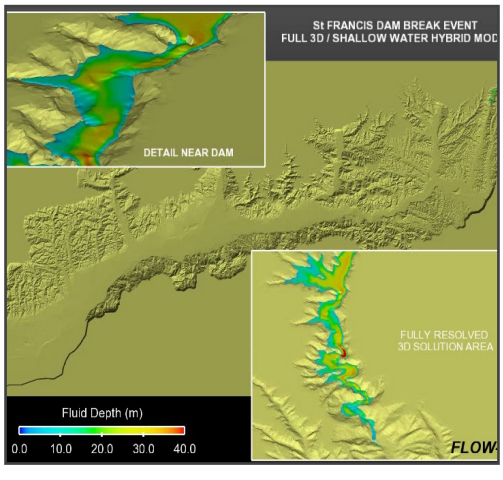
SPILLWAYS

***FLOW-3D* HYDRO** is widely used in the design of proposed spillways to help meet dam safety requirements. Dam safety professionals and design engineers around the world rely on the efficiency and accuracy of ***FLOW-3D* HYDRO** to easily generate rating curves and detailed velocity profiles for complex spillways. ***FLOW-3D* HYDRO** also enables the quantification of structural stresses during normal and extreme operations, including transient effects due to gate operation.

FISH PASSAGES

***FLOW-3D* HYDRO** is used by professional designers and researchers to help solve the problems with under-utilization of fish passages. ***FLOW-3D* HYDRO** enables engineers to see inside fully three-dimensional and transient flow to examine important parameters like velocity, mixing, pressure, turbulence intensity and dissipation, and free surface profiles. Proposed designs can be evaluated with 3D simulations to improve existing passage efficiencies, modify designs to fit unique sites, and develop novel designs that fit the physiology and behavior of the target fish species.





DAM BREAKS

***FLOW-3D* HYDRO** accurately predicts the outcome of a dam breach including flow behavior, inundation locations and depths, and possible damage and loss of life. ***FLOW-3D* HYDRO** is one of the most cost-effective options in the water and environmental industry for modeling catastrophic conditions that lead to dam breaks and validating designs for safety and environmental criteria. It is especially useful wherever flows are complex and difficult to approximate with physical models or depth averaged 1D/2D codes.