PACIFIC NORTHWEST DAM
HYDROELECTRIC DECOMMISSIONING
Prominent Western US Utility
Washington State

Located in the state of Washington is the second largest dam to be decommissioned in the U.S. Completed in 1913, the 471-long, 125-foot high gravity dam provided electrical power for local industry. As owner’s engineer for a prominent utility, Kleinfelder is leading a multi-disciplinary effort to keep this high-profile dam removal project on track for its projected completion date of December 2012.

THE CHALLENGE
The project’s challenging work schedule is driven by regulatory requirements from the Federal Energy Regulatory Commission, the U.S. Army Corp of Engineers, and the Washington Department of Ecology. Pre-breach work included blasting a 90-foot long drain tunnel through the dam, replacing a city waterline, and replacing foundations of a bridge to meet the planned breach on Oct. 26, 2011. Post breach work includes managing former reservoir sediments, removing the dam and related facilities, disposing of 30,000 cubic yards of concrete debris, and restoring and revegetating the stream corridor.

KLEINFELDER’S SOLUTION
Initial work included reservoir sediment characterization and preparing decommissioning plans and specifications, permit submittals, and post-decommissioning management plans. Kleinfelder provided preliminary design of a replacement waterline using horizontal direction drilling and protection measures for a bridge foundation. Since dam removal would generate the unconfined aquatic disposal of up to 2.2 million cubic yards of sediment, Kleinfelder prepared the Environmental Monitoring Plan to identify protocols and provide guidance for water and sediment quality monitoring during post-decommissioning recovery of the nearby river. Kleinfelder proposed innovative solutions including using a one-mile long hillside bench for a wood stave flowline to dispose concrete demolition rubble and designed a soil nail wall to stabilize an exposed bridge abutment that resulted from downcutting of the river. Ongoing works includes contractor oversight to ensure compliance, technical review of contractor deliverables, and tracking project budget and schedule.

PROJECT RESULTS
Stringent project and construction management strategies kept this project on schedule. Kleinfelder’s responsiveness and technical diversity enabled the utility to respond responsibly to unanticipated events and maintain compliance with permit requirements. Use of the flowline saved money and the soil nail wall enabled the utility to keep the bridge open, satisfying needs of surrounding communities.

Kleinfelder is an employee-owned architecture, engineering, and science consulting firm providing solutions to meet our world’s complex infrastructure and natural resource challenges. Working as a team, our bright people will deliver the right solutions.