

GEOLOGY SERVICES

OUR GEOLOGICAL EXPERTISE

RIZZO International, Inc. geologists and geoscientists have considerable experience in field and office studies for nuclear and hydroelectric power generation, dam and water resources, infrastructure, environmental, and mining projects. Typically, these studies range from desktop reviews and reconnaissance field mapping to comprehensive investigations at site-specific and regional scales, both on and offshore. Our geoscience team has been involved in major power and civil projects in the United States, Europe, Middle East, and South America.



RIZZO's geologists have expertise in sedimentology and stratigraphy, geomorphology and landscape evolution, structural geology, engineering geology, shallow geophysics,

neotectonics, hazard analysis, geochemistry, geochronology, and paleoenvironmental analyses. Accordingly, our geoscience team has the necessary experience to characterize diverse landscapes, and solve complex geological problems.



RIZZO's geologists and supporting technical specialists are also well practiced in remote sensing and geographic information systems, and are well versed in state-of-the-practice two- and three-dimensional surface

and subsurface data visualization and geospatial data system and geodatabase development.

KEY SERVICES

RIZZO's key geology-related services include, but are not limited to:

- Exploratory Geological Drilling Programs and Drill Rig Oversight
- Exploratory Trenching and Trench Logging
- Fracture Trace and Tectonic Lineament Analysis
- Geological Hazard Investigations
- Geologic Mapping and Field Reconnaissance
- Geophysical Testing Oversight and Subsurface Interpretation
- Low Temperature and Stable Isotope Geochemical Analysis and Interpretation
- Paleoseismicity and Fault Displacement Hazard Analysis
- Post-Field Structural and Petrologic Analyses
- Quantitative Tectonic Geomorphic Analysis
- Quaternary Geochronology and Absolute Age Determinations
- Regional Geologic Studies
- Rock and Soil Core Logging and Sampling
- Satellite, LiDAR, and Aerial Image Processing and Interpretation
- Soil and Sediment Core Collection and Environmental Change Analysis
- Topographic Analysis

RIZZO's geology team has completed these services for power and civil project owners, designers, contractors, and regulators.

FEATURED GEOLOGY PROJECTS

BARAKAH NUCLEAR POWER PLANT – SITE CHARACTERIZATION STUDIES (UAE)

RIZZO completed site characterization studies for two potential nuclear power plant locations in the westernmost United Arab Emirates, and developed comprehensive geologic and seismic safety analysis reports for the location ultimately selected for the power plant, the Barakah Site.

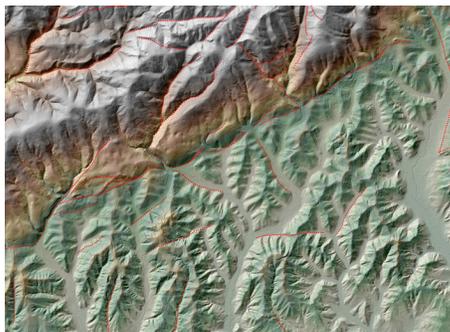


RIZZO specifically completed geological reconnaissance and field mapping for the proposed power plant sites, as well as onshore and offshore geophysical measurements, oceanographic (bathymetric) surveys,

and a drilling program that included 220 borings totaling nearly 15,000 linear meters. Comprehensive desk studies related to regional stratigraphic, structural, and tectonic features and potential surface faulting were also completed. Collectively, these field investigations and desk studies provided data that were used to identify and evaluate regional and site-specific geological and seismic conditions that could potentially impact safety-related building foundation designs.

KRŠKO 2 NUCLEAR POWER PLANT – REGIONAL FAULTING AND TECTONIC STUDIES (SLOVENIA)

RIZZO completed fault studies and a tectonic evaluation for the proposed Krško 2 Nuclear Power Plant Site in eastern Slovenia. Intended to characterize paleoseismicity on inferred faults in



the wider Krško area, RIZZO's evaluation included tectonic geomorphology, geochronology, and high-resolution seismic surveys. For the tectonic geomorphology component, airborne light

detection and ranging (LiDAR) data were processed into a very high-resolution digital elevation model for qualitative and quantitative analyses. To provide geochronological

constraints on faulting and regional landscape evolution, RIZZO utilized cosmogenic radionuclide and optically-stimulated luminescence dating methods. Lateral fault extents were in turn constrained using high-resolution seismic images. Overall, the study provided valuable data on the existing seismotectonic framework for the Krško region, where geological mapping has been inconclusive.

ABU DHABI MUNICIPALITY GEOHAZARD STUDIES – GEOLOGICAL HAZARD ASSESSMENT (UAE)

RIZZO compiled available information on surface and subsurface conditions for a nearly 1,700 square kilometer area within metropolitan Abu Dhabi, and developed complex three-dimensional lithologic and lithostratigraphic models to visualize and describe subsurface conditions in the region. Compiled data and model output were integrated into a comprehensive geodatabase that was used to map and characterize geological hazards in the region (unengineered fill, cavities, etc.) that could contribute to ground collapse and damage to buildings and infrastructure.



Hazard distribution maps and geodatabase information were in turn used to develop spatial and statistical analyses and predictive models for potential ground collapse (or settlement) and possible subsidence related damage to buildings and infrastructure. RIZZO used these analyses to provide stakeholder agencies in Abu Dhabi with comprehensive assessments related to ground risks, and recommendations and guidance for safe and effective construction and development.

