LISIE

DOWNSTREAM CLEARANCE OF THE RIGHT BANK UNIT AT THE SAINT-ÉGRÈVE DAM

PROJECT TITLE
Saint-Égreve dam

CLIENT
EDF (Électricité de France)

LOCATION
Saint-Egrève (38), France

YEAR OPERATION
2025

PROJECT OVERVIEW

The Saint-Égrève dam, a concrete gravity structure located on the Isère River north of Grenoble, supplies a powerhouse equipped with bulb units designed for a low head. Its configuration — deep outlets, narrow tailrace tunnel, and limited access — makes maintenance operations particularly complex and requires specialized technical solutions.

Following an exceptional flood carrying a high sediment load, the turbine tailrace tunnels became silted up over more than 80% of their section, preventing the downstream gates from opening. Both gates were blocked: one fully closed, the other 90% closed. EDF therefore launched an unscheduled emergency operation to clear the sediments downstream of the gates down to their sill. This intervention required the creation of a 16m access channel in each tunnel, followed by excavation of 6m of deposits to reach the gate floor.

TECHNICAL APPROACH & IMPLEMENTATION

The LISIE machine was mobilized in a very short timeframe for this precision dredging operation. This small underwater suction excavator was launched by crane and remotely operated from the riverbank. It was able to progress through the tailrace tunnels by excavating its own access channel through the sediments. Once in front of each gate, it dug down to a depth of 6m to reach the concrete sill. The gates thus cleared could be reopened. LISIE was then used, with the gates open, to clean their guide rails.

The initial estimate indicated a volume of approximately 2,000m³ of sediments. Over 40 days, LISIE operated for a total of 350 hours to pump this volume and discharge it into the flow of the Isère downstream.

"The LISIE solution enables precision dredging of components or narrow conduits. At Saint-Égrève, it was one of the very few solutions that could be implemented to clear the outlet channel of the dam's bulb units."

RESULTS & PERFORMANCE

- **>2,000m³** of sediments to be removed.
- **16m** of undercut excavation inside a tunnel.
- **350h total** of precision underwater dredging.
- **24h/5d** production.
- **Zero** accidents.

WATERTRACKS