**BACKGROUND**

Underwater Tunnel Piercing or Lake Tap is a very important part of many hydroelectric schemes. This is the very last blast in a water intake tunnel to the power station which penetrate into the lake. More than 600 lake taps have been successfully performed in Norway since the 1890’s. The technique, which deserves to be called well proven, has been applied mostly in the hydropower sector but over the last 20 years also for shore approaches in the oil and gas industry.

**KNOWLEDGE**

NexConsult has experience from some of these and are able to give consulting services for the blasting techniques involved in such a project. In august 2008, we were a sub-consultant to Norconsult AS on a project in Alaska, Lake Dorothy Hydroelectric Scheme. The client was Alaska Electric Light & Power Co. and the contractor was JS Redpath Cooperation.

![Diagram of Underwater Tunnel Piercing](image)

Water level in the lake
36 m, (120 ft)

Lake Tap, 4 m solid rock

Air cushion

Water filled tunnel.

With these kind of projects it is very important to choose the correct explosive, detonators and the entire chain of accessories to ensure that it is functioning under these extreme conditions.

With our knowledge we can assist in these projects with detailed design and to set up test procedures for the explosives and detonators.

We also provide supervision of the work performed on the site, or we can do the entire charging and coupling of the blast.