

# Imatra Hydro Power Plant, Finland

Owner's engineering services for upgrading unit 7, 2004 - 2006

Fortum refurbished unit 7 of Imatra hydro power plant to increase power output efficiency and improve safety. The renovation also lowered maintenance costs of the unit and reduced environmental risks.

## Power plant: Imatra Hydro Power Plant

Location: Imatra, Finland

River system: Vuoksi

Unit power output: 38 MW

Total power output: 192 MW

Head: 24 m

Customer: Fortum Power & Heat Oy

Project duration: 24 months

## Description of the project

Fortum decided the optimal system design parameters, made conceptual layouts including auxiliary equipment and all associated documentation such as project reports, diagrams and instructions. Fortum together with subcontractors and suppliers renovated mechanical, electrical, communications, instrumentation and control systems of unit 7.

Originally unit 7 was built in 1952 and it was renewed in 2004-2006. As a result of the project the power output was increased, safety and reliability improved and operation and maintenance costs decreased. The new turbine with environmental safe runner has reduced the risk of oil leakage. The oil volume of the high pressure hydraulic system is considerably reduced which minimize also the environmental risk. The new generator with non-combustible windings has lowered the risk of fire. Also safety at work was improved because of these actions.

Imatra hydro power plant was originally built in 1929 by Imatran Voima Oy (currently Fortum) and it is owned by Fortum Generation AB. During the years of working the plant has been renewed and new units have been build, and the owner's engineering services have successfully refurbished the plant.

## Results

The power output has been increased and the plant modernized during the projects that Fortum has carried out together with subcontractors and suppliers. Main objectives of the refurbishment projects were reached; efficiency and power output were increased, good availability and safe conditions for staff and the environment were guaranteed, and a longer technical lifetime for the historic hydro power plant ensured.



In 2014 Fortum started to carry out new renovations for other units and after the ongoing refurbishment of the two units Imatra HPP will be once again the largest hydropower plant in Finland in terms of capacity and production (192 MW).

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