

Media Release

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New kind of turbine governor from Voith proves effective in small hydropower plant in Scotland

2019-02-27

- **Modified form of tried and tested compact drive from Voith Turbo used in a hydropower plant for first time**
- **Installation and maintenance friendly design**
- **Energy efficiency and environmental compatibility**

Heidenheim. As part of an upgrade of the Storr Lochs small hydropower plant in Scotland, technology group Voith installed a new kind of turbine control unit, which regulates the water flow by adjusting the turbine blades. This development based on a proven design is especially compact and can be easily installed and serviced. In addition, the hydraulic regulation is environmentally friendly and energy efficient. After more than a year of reliable operation, the system has proven its effectiveness.

Since 1952, energy generator SSE has been using the water from Loch Leatan on the Isle of Skye to produce electricity. The Storr Lochs small hydropower station in the north of the island has a capacity of around two megawatts and is equipped with two Francis turbines. As part of an extensive upgrade, the power plant got two new turbines, each fitted with a control unit. Its special external feature is a particularly compact design that allows it to be readily integrated into existing systems, even where space is tight. The self-contained system of the autonomous compact drive offers other advantages. For example, it does not need any additional piping. Moreover, the control unit does not require an additional accumulator and works with a very low volume of hydraulic fluid. This allows particularly safe operation without fluid losses, which makes the new development very environmentally friendly. This design principle also means that the regular checks and inspections necessary in conventional systems can be dispensed with. Above all, in remote facilities, such as in the north of the Isle of Skye, this represents enormous cost savings in conjunction with ser-

vice. For example, the system was pre-assembled at the turbine manufacturers, so the installation and commissioning effort in Scotland was kept to a minimum.

The compact drive unit used for the first time in a small hydropower facility in Storr Lochs is based on the tried and tested servo-hydraulic linear drive closed loop differential pump (CLDP). This has been offered by Voith Turbo for some years now and has already proven effective in a wide range of plants. It is also popular due its low wear and associated long service life in continuous use applications and is used in sectors such as the food industry and for test rigs and laboratory machines. For use in the Storr Lochs power plant, the Voith team adapted the CLDP to the requirements of the plant operator. This was readily implemented thanks to the extensive flexibility of the CLDP, and significant cost savings were achieved compared with a new development. The system has been used at the Scottish hydro power plant since the end of 2017 and is working with maximum reliability.

About the Voith Group

The Voith Group is a global technology company. With its broad portfolio of systems, products, services and digital applications, Voith sets standards in the markets of energy, oil & gas, paper, raw materials and transport & automotive. Founded in 1867, the company today has more than 19,000 employees, sales of € 4.2 billion and locations in over 60 countries worldwide and is thus one of the large family-owned companies in Europe.

The Group Division Voith Hydro is part of the Voith Group and a leading full-line supplier as well as trusted partner for equipping hydropower plants. Voith develops customized, long-term solutions and services for large and small hydro plants all over the world. Its portfolio of products and services covers the entire life cycle and all major components for large and small hydro plants, from generators, turbines, pumps and automation systems, right through to spare parts, maintenance and training services, and digital solutions for intelligent hydropower.

The Group Division Voith Turbo is also part of the Voith Group and a specialist for intelligent drive solutions, systems as well as comprehensive services. Customers from highly diverse industries such as oil and gas, energy, rail and commercial vehicles, ship technology, mining and mechanical engineering rely on the advanced technologies and solutions-driven expertise of Voith.

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Caption 1: The small hydropower plant Storr Lochs in Scotland.



Caption 2: The new turbine control unit regulates the water flow by adjusting the turbine blades.

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