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SEW-EURODRIVE instrumental in refurbishment of Imatra hydropower plant

Finnish energy company Fortum Oyi is substantially refurbishing its hydropower plant in Imatra in the southeast of Finland between 2013 and 2015. The project involves the complete refurbishment of two of the power plant's seven units. In the run-up to the project, Fortum aimed to use as many local suppliers as possible in the project's subcontracting work. As SEW-EURODRIVE Oy was the only company capable of offering a complete package (see info box), it was awarded the contract for modernizing the intake gates.

The turbines, generators, and electricity and automation systems will be upgraded in units three and four that are targeted in the refurbishment work. Refurbishment of the electrical systems starts in summer 2013, refurbishment of unit three in summer 2014, and unit four will be refurbished in summer 2015. The power plant's safety and eco-friendliness will also be improved during the refurbishment project with new technical upgrades that will reduce the use of oil at the power plant.

SEW-EURODRIVE's role in this project

The proposal included SEW and third-party components such as centrifugal brakes, conceptual design, dimensioning of gear units and frequency inverters, interface to the higher-level control system, dismantling of existing equipment, development of adaptive constructions, installation of components on-site and commissioning of frequency inverters.

Components provided by SEW-EURODRIVE:

- 14 R107DRE180LC4BE20HR/TF/2W gearmotors with brakes

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- 14 MC07B0220-503-4-00 frequency inverters with accessories for fieldbus communication, filters, chokes and brake resistors
- 14 M1PSF20 industrial gear units from SEW in Karkkila

The intake gates (see info box) are raised and lowered using the R107 gear units and MOVITRAC®. The drives are configured to cut the time it takes to raise the gates from 26 to 22 minutes and the time to lower them from 16 to eleven minutes. Before the refurbishment, the centrifugal brake was used to lower the intake gates. Now it is only used to close the gates in an emergency. The time for this emergency closure has also been cut by three minutes so now it only takes ten minutes. M1 industrial gear units are used to increase the speed in line with the centrifugal brakes. In case of power failure, a DC/DC transformer and buffer batteries are used to release the brakes of the gearmotors to close the intake gates in an emergency.

The scope of delivery also included the design of the control cabinets, component selection, and commissioning of the equipment. Partners were used as subcontractors with responsibility for mechanical adjustment, dismantling of the existing equipment and installation of the components.

The project is well on schedule with refurbishment of the first two intake gates already complete.

Ends.

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