

Watertight cable designs in hydropower generation plants

Børre **SIVERTSVOLL** and Terje **RØNNINGEN** (1), Hallvard **FAREMO** and Jens Kristian **LERVIK** (2), Kåre **HØNSI** and Rolf **WILNES** (3), Ole Kristian **JACOBSEN** and Hans Lavoll **HALVORSON** (4)

- 1 Siemens AS
- 2 SINTEF Energi AS, Hallvard.Faremo@sintef.no
- 3 Statkraft Energi AS
- 4 BKK Nett

This paper discusses the screen currents induced in the aluminium laminate of 24kV watertight XLPE cables installed for the generators of a Norwegian hydropower generation station. Consequences and how to improve the cable system will also be discussed.

Repeated faults on a heavily loaded new cable system resulted in serious doubts about the performance and life expectancy of the installed system. At times during the project, a full replacement with new cables was seriously discussed. The costs involved would; however, be substantial. Hence a team consisting of parties involved and SINTEF Energy Research; was set up with the aim to try to come up with possible alternative and reliable solutions.

The team thoroughly evaluated available information and background information, discussed with both cable and cable accessory manufacturers before a new solution was introduced. The cable system has worked as expected for more than two years after the new solutions were implemented.