

## Hydroelectric power plant: Undefined problem

- Hydroelectric power plant with 60-meter shaft
- System Reporter 100 with software version 4

The following example is taken from a hydroelectric power plant with two units, each with a 60-meter long hollow shaft between turbine and generator. The shafts are supported by three bearings, and the following example is taken from the middle bearing on one of the units.

Two waterfall diagrams, together displaying distance change data from a 96-day period, from one of the plug bearings are shown in Figure 1. The diagrams show that the amplitude is increasing at a frequency of 10.7 Hz (i.e. three times the fundamental frequency of 3.6

Hz). The amplitude is also increasing at the frequencies corresponding to two- and four times the fundamental frequency, but is decreasing slightly at the fundamental frequency itself.

The cause of these effects, and any related problems needing attention, has not yet been identified.

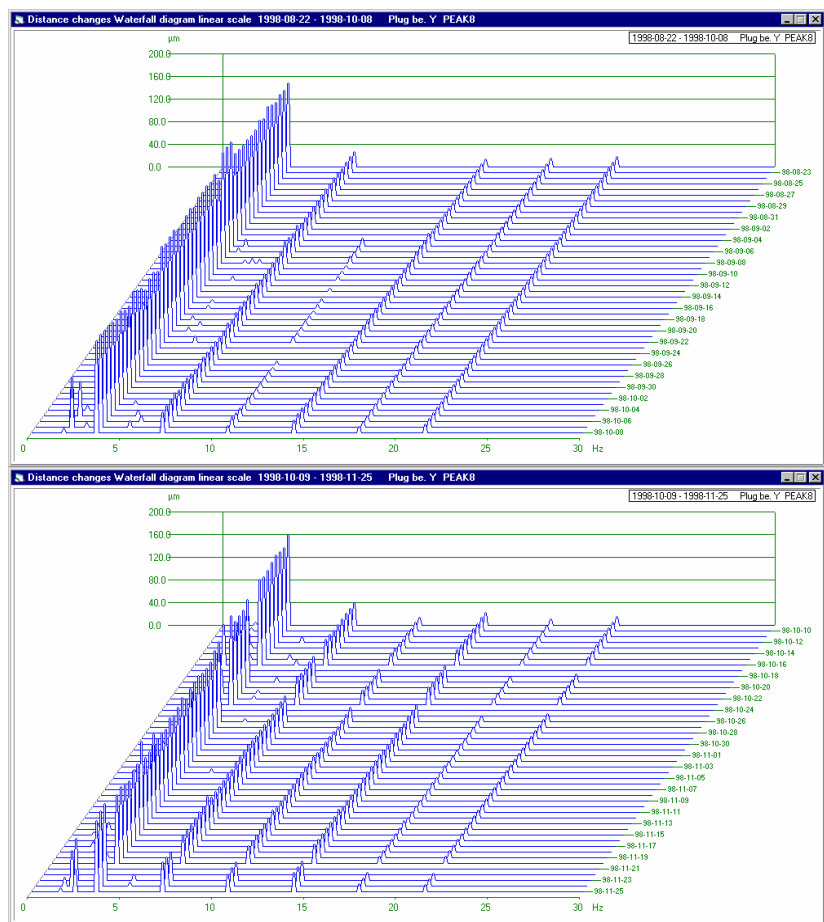


Figure 1. Waterfall spectra together ranging from August 22 (upper) to November 15 (lower), 1998.



Montörvägen 9, S-853 50 Sundsvall, Sweden  
telephone: +46-(0)60 61 39 47  
facsimile: +46-(0)60 61 39 67  
email: info@lagge.se  
www: <http://www.lagge.se>  
VAT #: 556053695401