Improvement assessment - Francis, guide vanes

In a Francis turbine of older design, there was cavitation on the guide vanes.

In order to correct this, the guide vanes were modified.

In a multidimensional diagnostic test the result was checked.

Improvement?

Within the operating range, cavitation on the guide vanes was suppressed by more than three times. The accompanying change in the runner cavitation has no practical relevance.

Cavitation intensity (%)

Guide vanes:

Original Modified

Cavitation on:

Guide vanes — — — Runner blades — —

Operating range

