

Preface

The efficiency of turbines which are used in hydropower plants also ensures the overall production efficiency of hydropower plants. The abnormalities in climatic pattern which is growing day by day can also impact the performance of hydro-turbines (Majone et al. 2016). The hydropower plants depend on flowing water and the runners of such kind of plant is either submerged or get into touch of water. The quantity (Wang et al. 2016) as well as quality (Kumar and Sarkar 2016) of water depends on climatic parameters like rainfall and temperature. Both quantity and quality of water will also affect the performance of the turbine. Frictions and corrosion caused by the flowing water on turbines will increase as the quantity and quality of water deteriorate under the changed climate scenario. The increase in such kind of losses also decreases the performance efficiency of turbines.

That is why the present study is an attempt to establish a relationship between some parameters affected by climate change and overall efficiency of turbines attached to hydropower plants.

The problem is introduced in Chap. 1 and methodology of the procedure adopted to quantify the climatic impact on turbine performance is described in Chap. 4. A brief description about hydropower plants, types of turbines and types of losses which reduces the turbine efficiency was discussed in Chap. 3. The cause and effect of climate change was delineated in Chap. 2. The results of the case studies and model validation were depicted in Chap. 5 followed by the conclusions that were derived from the present investigation were shown in the last chapter (Chap. 6).

References

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