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HYDROPOWER IMPACT ON WATER QUALITY

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Abstract

It is well known that the hydro power plants directly influence the habitat and the climate. Still, the hydro power represents a green renewable energy source, not polluting the environment if proper measures are applied. The main objective of the researches in this field is represented by the quality of the water discharged from turbines and especially by the low dissolved oxygen level that may have an unfavorable impact over environment and can endanger the aquatic life. During the summer months, due to the thermal stratification of the dam reservoirs and to the degasification phenomenon resulted when water passes through the turbine, the oxygen level can drop under the minimum limit of 5-6 mg/L, needed for aquatic life. The authors propose the water aeration process optimization, outlining the importance of the aeration "quality" (bubbles dimensions, retention times, pressure drop, geometry and dimensioning of the aeration systems) on the mass transfer process and not the quantity of air injected.

Key words: dissolved oxygen, oxygen transfer, turbine aeration

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