

Improvement in Reclamation Process of Pelton Runner

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Abstract--- Bhutan is blessed with enormous potential to harness hydro-energy estimated at 20,000Mega Watts with the hydropower sector generating the highest proportion of revenue to the nation. Pelton being the ideal runner for high head is the most prominent type of runner installed in the operational as well as the upcoming hydropower plants.

Reclamation and repair of Pelton runner is gaining greater prominence due to the excessive rate of erosion of the runners. Runner reclamation is a practically proven solution for reviving the eroded and damaged hydraulic profile of runner to its original state at a significantly lower cost to that of a newly manufactured runner.

Pelton runner reclamation is a sophisticated process requiring intensive technical knowhow and expertise to retain the

mechanical properties, original dimensions and efficiency of the runner. Pelton runners are generally installed for high-head applications and consequently high pressure. Therefore, quality of repair activities especially welding, grinding and post weld heat treatment are paramount to the efficiency and life cycle of the reclaimed Pelton runner. This paper exclusively concentrates on the reclamation process and the improvements to optimize the reclamation process of Pelton runner. The experiences acquired through various challenges and improvements implemented in each and every process over the period for reclamation of runner by Bhutan Hydropower Services Limited (BHSL) are illustrated.

Keywords: - reclamation, pelton runner, erosion