

Environmental and hydraulic design of thermal power plants outfalls “Case study: Banha thermal power plant, Egypt”

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A physical model study was conducted for designing the intake/outfall combination to comply with the Egyptian environmental laws. Based on the dominant flow patterns, and temperature measurements, two alternatives had been conducted, the first alternative of outfall structure consists of surface open channel. The output of this design did not comply with environmental laws and has negative impacts on water quality and ecological life. It was proposed to widen the outfall with 24 nozzles (multi port diffuser) arranged in two rows and separate the outfall into many jets. This new alternative for the outfall hydraulic design succeeded to improve mixing process and complies with the environmental laws.

Biography

Ahmed M. Nada is working as researcher in the Hydraulics Research Institute since 2000. In 2003 he obtained M.Sc. degree from Ain Shams University, the Faculty of Engineering, Cairo, Egypt. In 2008 he obtained Ph.D. His main works in hydrographic survey, numerical modeling, design of pipe lines, pump stations, physical modeling and river hydraulics.

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