The modeling thermal pollution the power plant by using Mike21 software

Seawater temperature is changing with time (season to season). Furthermore, physical and dynamical characteristics of a thermal plume are changing due to ambient temperature. In this paper, predicting emission quality of thermal pollution of the power plant is investigated. For this purpose, effect of seasonal thermocline on development of a thermal plume is simulated by using software Mike21. Modules of HD (Hydrodynamic Modelling Module) and ECOLab (Ecological Modelling Module) in software Mike21 are used for two-dimensional simulation. Then, output data from module HD (include of changes in water level caused by wind and speed of current water) are used in module ECOLab. Modelling results show that, seasonal thermocline is effective on superficial extension a thermal plume. It also shows, the extending superficial a thermal plume in summer is lesser than winter (in a monotonous environment). When there is no wind, thermal plume convexity is more. Besides, thermal plume further development is toward the deep region of sea. When there is wind, thermal plume is drawn in direction of the prevailing wind.

Therefore, taking again cold water from sea (in order to cool the power plant) is done in opposite direction wind prevailing than into drain place of warm water. In this study, thermal pollution resulting of discharge warm water from a sample coastal power plants and predict the fields of temperature in the water ranges adjacent stations were evaluated. For plan power plant expansion, by using software Mike21 temperature distribution on beach according to various scenarios such as; flow resulting of wind, air temperature and blowing wind was modeled. Finally, the affected area of thermal pollution compared to standards of environmental protection agency was examined.
این صفحه به محتوای تاییدیه نمایه سازی مقاله در پایگاه استنادی سیویلیکا می‌باشد. در هر لحظه به منظور تایید اصل این گواهی می‌توانید وضعیت ثبت مقاله را از طریق لینک فوق به صورت آنلاین کنترل نمایید.