



مرکز پژوهش‌های مطالعات دریایی

سازمان بنادر و دریانوردی به عنوان تنها مرجع حاکمیتی کشور در امور بندری، دریایی و کشتی‌رانی بازرگانی به منظور ایفای نقش مرجعیت دانشی خود و در راستای تحقق راهبردهای کلان نقشه جامع علمی کشور مبنی بر "حمایت از توسعه شبکه‌های تحقیقاتی و تسهیل انتقال و انتشار دانش و سامان‌دهی علمی" از طریق "استانداردسازی و اصلاح فرایندهای تولید، ثبت، داوری و سنجش و ایجاد بانک‌های اطلاعاتی یکپارچه برای نشریات، اختراعات و اکتشافات پژوهشگران"، اقدام به ارایه این اثر در سایت SID می‌نماید.



سازمان بنادر و دریانوردی



ICOPMAS

- **Evaluation of Thermal Dispersion in Neka Power Plant Coast**

Aghil Hajmomeni

Hasan Akbari

Alireza Khodam

Saeed Parhizkari

Combined Cycle Power Plants are one types of power plants which their operations depends on their cooling systems. When these power plants are located near the sea or river, they use seawater for their condenser operation. Cool water in the condenser of power plant becomes warmer and then returns to the sea with specific excess temperature.

If the outlet and inlet locations aren't designed properly, warm water returns towards intake location. This condition, which called re circulation, can cause considerable reduction of power plant efficiency.

In this paper recirculation probability and the effect of adjacent maritime structures on NEKA power plant is discussed, which it is one of the most important power plant in IRAN. Iran Oil Company together with SADRA COMPANY are constructing a long breakwater in east coast of NEKA power plant basin for their navigation and industrial purposes. For evaluating the effect of this breakwater on warm water dispersion and its probable negative effects on power plant operation, we used MIKE21 package for hydrodynamic and heat dispersion simulation in this study. Environmental condition (wind and wave) as the most important factor in distribution of pollution in the sea, was achieved from two data

resources. a: Babolsar wind station data, b: wind and wave data recorded by Delft Hydraulic institute in 1991. Using these data, initially with respect to statistical studies, one year selected as the representative year and then with applying the wind and wave condition during the selected year, in time series form, mathematical simulation was done.

**Keywords: Neka power plant, Iran, Thermal re circulation, mathematical simulation**

**Mike21**



ICOPMAS