Design and Application of Intelligent Modification of Impressed Current Cathodic Protection System in Nuclear Power Plants

JIANG Feng

CNNP Nuclear Power Operations Management Co., Ltd. Haiyan, Zhejiang, 314300, China

52161944@qq.com

Abstract The influence of astronomical tide changes on the operation of rectifier-controlled impressed current cathodic protection system for metal facilities in a domestic nuclear power plant's seawater environment is analyzed. It is pointed out that under hydrological conditions with significant tidal variations, potentiostat equipment should be used for impressed current cathodic protection system control. On this basis, the impressed current cathodic protection system of the nuclear power plant was comprehensively modified, achieving automatic and intelligent control of the system, and ensuring the ON potentials of underwater metal facilities within the design range, effectively protecting them.

Keywords sea water; cathode protection; constant potential device; intelligentization

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