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中国核电行业设备可靠性提升推进

Advancement in Reliability Enhancement of Nuclear Power Industry Equipment in China

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摘要:
核电厂设备可靠性管理是核电机组安全可靠运行的重要保障。为进一步推动国内核电行业电力可靠性管理水平的全面提升, 中国核能行业协会(以下简称协会)2022年组织开展了电力可靠性管理专项课题研究工作。2023年, 在课题研究成果的基础上, 协会组织开展了设备可靠性提升专项工作(简称ERIP)。
ERIP旨在建立国内核电行业通用的设备可靠性管理体系和行业标准、搭建设备可靠性信息平台、组织设备可靠性专项评估和设备可靠性指标监测分析、组织经验交流和成员支持活动让会员分享良好实践, 取长补短, 不断提升全行业的设备可靠性管理水平和运行绩效。
经过2023年的运作, 完成了项目组织机构建立、评估管理流程及评估准则开发、可靠性指标体系开发、评估管理平台的开发与应用、对试点电厂评估等重要工作。这些成果不仅为我国核电行业的设备可靠性管理提供了宝贵的经验和指导, 也为ERIP项目的全面、深入推进奠定了坚实的基础。

Reliability management of nuclear power plant equipment is a crucial assurance for the safe and reliable operation of nuclear power units. In order to further promote a comprehensive improvement in the domestic nuclear power industry's power reliability management, the China Nuclear Energy Association (referred to as the Association) organized a special research project on power reliability management in 2022. Building upon the research findings of this project in 2023, the Association initiated a specialized effort known as Equipment Reliability Improvement Project (ERIP).

ERIP aims to establish a comprehensive equipment reliability management system and industry standards for the domestic nuclear power industry. It involves the creation of an equipment reliability information platform, organizing specialized assessments of equipment reliability, monitoring and analyzing reliability indicators, as well as facilitating experience exchange and member support activities. The goal is to enable members to share best practices, learn from each other, and continuously enhance the industry's level of equipment reliability management and operational performance.

Following the operations in 2023, significant achievements were made, including the establishment of project organizational structure, development of assessment management processes and criteria, formulation of a reliability indicator system, development and application of assessment management platforms, and the evaluation of pilot power plants. These accomplishments not only provide valuable experience and guidance for equipment reliability management in China's nuclear power industry but also lay a solid foundation for the comprehensive and in-depth advancement of the ERIP project.