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**General requirements of intelligent operation and maintenance
system for nuclear power plants**

核电厂智能运维系统通用要求

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Table of Contents

Preface	III
1 Scope	1
2 Normative references	1
3 Terms and Definitions	1
4 Abbreviations	2
5 System Architecture	2
6 Functional Requirements	3
6.1 State Awareness	3
6.2 Health Monitoring	3
6.3 Early Warning Diagnosis	4
6.4 Health Prediction	4
6.5 Maintenance Decision	4
7 Technical Requirements	4
7.1 Safety Requirements	4
7.2 Sensor Technical Requirements	5
7.3 Algorithm Technical Requirements	5
7.4 Platform Technical Requirements	6
7.5 Technical requirements for human-machine interface	6
8 Debugging and running	7
8.1 System Debugging	7
8.2 System Operation and Maintenance	7
9 Evaluation and Verification	8
9.1 System Evaluation	8
9.2 System Verification	8
References	9

Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1: Structure and drafting rules for standardization documents" Drafting.

Please note that some of the contents of this document may involve patents. The issuing

organization of this document does not assume the responsibility for identifying patents.

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General requirements for intelligent operation and maintenance systems in nuclear power plants

1 Scope

This document establishes the architecture of the intelligent operation and maintenance system for nuclear power plants, and stipulates the functional requirements, technical requirements, and Trial and operation requirements, evaluation and verification requirements.

This document applies to the design, development, commissioning and operation of intelligent operation and maintenance systems for nuclear power plants, and shall be used as a reference for the intelligent operation and maintenance systems of other nuclear facilities.

2 Normative references

GB/T 22239

GB/T 22240

3 Terms and Definitions

The following terms and definitions apply to this document.

3.1 [Source. GB/T 43208.1-2023, 3.1, with modifications]

Based on the operation and maintenance data of nuclear power plant structures, systems and components (SSCs), through state perception, health monitoring, early warning diagnosis, health Prediction and maintenance decision-making and other activities, develop a technical system with self-learning, diagnosis, decision-making and other operation and maintenance processes.

3.2 condition sensing

The technical process of identifying and processing the operating conditions of nuclear power plant structures, systems and components (SSCs) through data collection and analysis.

3.3 health monitoring

A technical means of detecting the status of equipment by qualitatively or quantitatively analyzing the status of nuclear power plant structures, systems and components (SSCs).

3.4 Warning signals and guide maintenance decisions

When the health indicator reaches the warning health level, the fault type, fault location and fault severity are analyzed to trigger the warning.

3.5 health prediction healthprediction

Based on failure modes, aging mechanisms and health status data, predict the future performance of nuclear power plant structures, systems and components (SSCs) The technical process of monitoring the health status of a segment.

3.6 maintenance decision-making

Based on the effective analysis of operation maintenance, safety, environmental factors, reliability and other information, combined with maintenance cost, failure cost and failure consequences, The technical process of selecting maintenance type, analyzing maintenance effect and determining the best maintenance plan.