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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 43797-2024

**General requirements of operating licenses extension
assessment for nuclear power plants**

核电厂运行许可证延续评估通用要求

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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. This document was proposed and coordinated by the National Nuclear Energy Standardization Technical Committee (SAC/TC58). This document was drafted by: China National Nuclear Power Operation Management Co., Ltd., Nuclear Power Operation Research Institute, Nuclear and Radiation Safety Center of the Ministry of Ecology and Environment, Nuclear Industry Standardization Institute, Shanghai Nuclear Engineering Research and Design Institute Co., Ltd., Suzhou Thermal Engineering Research Institute Co., Ltd., Daya Bay Nuclear Power Operation Co., Ltd. Operation and Management Co., Ltd., MCC Testing and Certification Co., Ltd. The main drafters of this document are: Jiang He, Tao Jun, Cao Guochang, Li Zhihua, Xu Feng, Zhang Jiangtao, Zhao Chuanli, Zhang Feng, Shan Xuefeng, Shang Xianhe, Kong Deping, Sun Haitao, Liu Shangyuan, Gui Chun, Han Zhenhui, Zou Jianping, Chen Zhilin, Huang Ping, Wang Chunhui, Fang Kuiyuan, Ronghua, Zhang Wei, Li Shiwei, Fang Jiang, Cai Dahua, Ma Huiming, Kang Yunding, Deng Ruiyuan,

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1 Scope

GB/T 43797-2024 sets the general requirements for the assessment that supports extending the validity period of a nuclear power plant operating licence in China. The first Chinese units are now approaching the end of their original forty-year licences, and this document is what the industry will run the extension of every one of them against. It specifies the assessment process, the determination of the safety demonstration benchmarks, the overall plant assessment, the time-limited ageing analyses, which are the calculations originally done on an assumption of forty years and which have to be redone or disposed for the extended term, the environmental impact assessment, the safety improvements and the commitments made with them, the supplement and modification of the final safety analysis report, the preparation of the application documents, and the renewal of the safety benchmarks for extended operation. It applies to nuclear power plants and may be referenced for other nuclear facilities. It takes effect on 1 July 2024.

This document specifies the process for the renewal of the validity period of the nuclear power plant operating license, the determination of the safety demonstration benchmark, the overall evaluation of the power plant, the time Aging analysis, environmental impact assessment, safety improvements and commitments, supplements and modifications to the final safety analysis report, and operating license renewal application documents Requirements for preparing and continuing to run security baseline updates. This document is applicable to the evaluation activities for the renewal of the validity period of the operating license of a nuclear power plant (hereinafter referred to as "operating license renewal"). Other nuclear facilities shall refer to this document. use.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document. For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to This document.

GB/T 41717-2022 Terminology of aging management and life management for nuclear power plants NB/T 20476.1 Renewal of nuclear power plant operating license Part

1.Screening of aging management review objects and identification of time-limited aging analysis NB/T 20476.2 Renewal of Nuclear Power Plant Operating License Part

2.Review of Mechanical Equipment Aging Management NB/T 20476.3 Renewal of nuclear

power plant operating license Part

3.Review of aging management of electrical and instrumentation and control equipment
NB/T 20476.4 Renewal of nuclear power plant operating license Part

4.Review of aging management of structures and structure components NB/T 20476.5
Renewal of Nuclear Power Plant Operating License Part

5.Environmental Impact Assessment NB/T 20476.6 Renewal of nuclear power plant
operating license Part

6.Time-limited aging analysis of reactor pressure vessels NB/T 20476.7 Renewal of nuclear
power plant operating license Part

7.Time-limited aging analysis of steam generators NB/T 20476.8 Renewal of Nuclear
Power Plant Operating License Part

8.Metal Fatigue Analysis NB/T 20476.9 Renewal of nuclear power plant operating license
Part

9.Time-limited aging analysis of electrical and instrumentation and control equipment NB/T
20476.10 Renewal of nuclear power plant operating license Part

10.Time-limited aging analysis of prestressed concrete containment NB/T 20476.11
Nuclear power plant operating license renewal Part

11.Supplementary guidance for the final safety analysis report NB/T 20476.12 Renewal of
Nuclear Power Plant Operating License Part

12.Guidelines for the Preparation of Applications Technical Policy for Extension of Validity
Period of Nuclear Power Plant Operating License (Trial) (National Nuclear Safety
Administration [2015] No. 280)

3 Terms and definitions

The terms and definitions defined in GB/T 41717-2022 and the following apply to this document.

3.1 The allocation of aging management resources, scope definition, object screening, aging mechanism analysis and aging effect identification, monitoring and detection, evaluation and mitigation Activities such as review and interpretation.

3.2 For the set unit operation period, the time-related requirements of the structures, systems and equipment determined according to the established screening principles shall be