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

GB/T 28549-2012

**Verification requirements for supports in the nuclear island
during nuclear power plant commissioning**

核电厂调试阶段核岛管道与主设备支吊装置验证要求

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Quarantine;
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Foreword

This standard rule according to GB/T 1.1-2009 given draft. This standard is proposed and managed by the China Electricity Council. This standard was drafted. Suzhou Thermal Power Research Institute Co., Ltd., Guangdong Nuclear Power Engineering Co., Ltd., Guangdong Power Research Institute, Zhejiang Electric Power Test & Research Institute, Sichuan power industry adjustment tests. The main drafters of this standard. with Jia Wu, Liu Yong, Yu Yang, Liu Qingxin, Luo Hong Jian, Li Dunkun, agriculture bell soldiers, Chen Xiaowei, Sunquan Rong, YANG Yan bamboo. Nuclear Island nuclear power plant commissioning stage pipeline and master Support and lifting device verification request

1 Scope

China's national standard for verifying the supports and hangers of nuclear island piping and main equipment during the commissioning of a nuclear power plant. It specifies the basic requirements for adjusting and verifying those devices, and it applies to the supports and hangers of the reactor coolant pumps, the primary piping, the steam generators and the pressuriser of a pressurised water reactor during the commissioning phase. A support is not a passive object. The primary circuit of a reactor moves: it is erected cold and operated at three hundred degrees, and the thermal expansion of a large steel loop over that range is measured in tens of millimetres. The supports have to hold the weight of the equipment and the water in it, resist the seismic loads the plant is designed for, and at the same time allow that expansion to happen in the direction the stress analysis assumed. Spring hangers, constant load hangers, snubbers, guides and anchors each do part of that, and each has a setting - a cold position, a travel range, a preload - that was calculated on the assumption that the circuit would move a certain way. Commissioning is where that assumption is tested for the first and only time on the real plant. The circuit is heated, and the supports are observed: does the hanger travel from its cold mark to its hot mark, does it reach the end of its travel, has anything locked, is a snubber taking load it should not take, has the expansion gone where the analysis said. A support that is wrong is corrected while the plant is still clean and accessible. So the standard specifies what is recorded cold, what is observed during heat-up, the criteria for acceptance and the disposition of a support that

does not behave as predicted. Issued on 29 June 2012 and in force since 1 November 2012.

This standard specifies the basic requirements for new nuclear power plant piping and commissioning phase of the nuclear island main equipment for suspending means for adjusting and verification. This standard applies to the island of PWR nuclear reactor coolant pumps and pipes, steam generator and regulator support lifting device commissioning phase Adjust and validate segments.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this article Member. For undated references, the latest edition (including any amendments) applies to this document. DL/T982-2005 soda nuclear power plant piping and hangers Maintenance and Adjustment Guide

3 Terms and Definitions

DL/T982-2005 as defined in the following terms and definitions apply to this document.

3.1 Cold function test coolfunctionaltest Nuclear fuel each function tests prior to loading on a primary coolant system at normal temperature (60 °C or less) conditions carried out.

3.2 Hot function test hotfunctionaltest The loading of nuclear fuel work before the primary coolant system in hot temperatures (above 60 °C to hot shutdown) conditions conducted You can test.

3.3 Critical tests before pre-criticaltest Nuclear fuel hot function test prior to the first after loading a critical pair of primary coolant system.

4 General

4.1 Nuclear Island pipe hangers should have the manufacturer's quality certification, use and maintenance instructions.

4.2 Before commissioning tests, coping hanger installation be visually inspected, and breaks in accordance with the design documents, use and maintenance manual Fit check.

4.3 pairs a comprehensive inspection of pipe hangers and debugging verification process generally consists of three, check the status of that is the cold state, the status of the subject when hot Hot review and verify the check and adjustment. Check the status of the cold state should be in the working conditions of the reactor cooling function test carried out hot State inspections should be under the operating conditions of the reactor thermal function test carried out hot review and verification should be adjusted in the reactor critical Working conditions before testing the next. Measuring instruments and inspection equipment

4.4 used in the test shall meet the accuracy requirements screening test and verification of the validity period specified.

4.5 hanger inspection work area shall comply with the safety regulations, it should be equipped with necessary safety facilities, such as safety barriers, warning signs, lighting

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