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NB

**ENERGY INDUSTRY STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

NB/T 20580.9-2021

**Budget estimation norm of nuclear power plant construction
project works - Part 9: Electrical equipment installation
engineering for conventional island**

核电厂建设工程概算定额 第9部分：常规岛电气设备安装工程

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Foreword

This document was issued on 7 January 2021 by the National Energy Administration of the PRC and takes effect on 1 July 2021.

It is a NB/T standard: recommended rather than compulsory, but it is the text a Chinese reviewer applies when assessing a submission.

It is classified under ICS 01.010.27, Chinese classification F 02.

This document has been drafted in accordance with the rules given in GB/T 1.1-2020 Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

This document is Part 9 of NB/T 20580 Budget estimation norm of nuclear power plant construction project works. The following parts of NB/T 20580 have already been issued:

Part 1: Nuclear island civil works;

Part 2: Nuclear island mechanical equipment installation works;

Part 3: Nuclear island piping installation works;

Part 4: Nuclear island ventilation and air conditioning installation works;

Part 5: Nuclear island electrical installation works;

Part 6: Nuclear island instrumentation and control instruments and communication installation works;

Part 7: Conventional island building works;

Part 8: Conventional island thermal equipment installation works;

Part 9: Conventional island electrical equipment installation works.

This document was proposed by the Nuclear Power Standardization Technical Committee of the energy sector.

This document is under the jurisdiction of the Nuclear Industry Standardization Research Institute.

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General information

Standard designation: NB/T 20580.9-2021, an energy sector standard of the People's Republic of China issued in the NB series. The suffix /T indicates a recommended standard.

English title as printed on the cover of the document: Budget estimation norm of nuclear power plant construction project works - Part 9: Electrical equipment installation engineering for nuclear island.

The document is Part 9 of the NB/T 20580 series Budget estimation norm of nuclear power plant construction project works. According to the foreword and to the body of the document, Part 9 covers the conventional island electrical equipment installation works.

Note on the printed cover: the Chinese subtitle printed on the cover page reads conventional island thermal equipment installation engineering, while the foreword lists Part 8 as the conventional island thermal equipment installation works and Part 9 as the conventional island electrical equipment installation works. The contents of the volume, from generator electrical works to communication works, confirm that this part deals with electrical equipment.

Classification codes given on the cover: ICS 01.010.27 and CCS F 02.

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The document is a norm book: after the foreword and the volume description it is organised in ten chapters of budget estimation norm tables, running to more than two hundred printed pages.

The text of the document is in Chinese; the cover carries an official English rendering of the title only.

1 Scope

NB/T 20580.9-2021 is the Chinese preliminary estimation norm for installing the electrical equipment of the conventional island of a nuclear power plant, the ninth part of the NB/T 20580 series. It is worth being clear about what distinguishes this series from NB/T 20358: a ???? is a preliminary estimate norm, used earlier in the project when the design is not yet detailed, and its units are correspondingly coarser - a switchgear lineup rather than each termination, a cable system rather than each metre. It is the instrument for the feasibility and preliminary design stages, where the question is whether the project is affordable at all, while the budget norm of NB/T 20358 is for the detailed stage where the question is what to pay the contractor. This volume covers the electrical installation of the turbine hall: the generator connections and main transformer, the medium and low voltage switchgear, the station service and DC supplies, the cable systems with their trays and penetrations, the earthing and lighting, and the control and protection panels. A note on the title: the cover of the printed document is internally inconsistent - the Chinese subtitle reads thermal equipment while the English reads electrical equipment for nuclear island, and neither matches the other. The preface and the whole index show that Part 8 is the thermal volume and Part 9 the electrical one, and that both concern the conventional island; the Chinese title of Part 9 in the standards registry likewise reads conventional island electrical equipment. The title given here follows the Chinese and the contents rather than the English line on the cover. It was issued on 7 January 2021 by the National Energy Administration and took effect on 1 July 2021.

1. The Budget estimation norm of nuclear power plant construction project works is divided into three volumes, comprising:

Volume seven: Conventional island building works;

Volume eight: Conventional island thermal equipment installation works;

Volume nine: Conventional island electrical equipment installation works.

2. This volume is the volume of the Budget estimation norm of nuclear power plant construction project works dealing with conventional island electrical equipment works, hereinafter referred to as this norm. It applies to the equipment installation works of the conventional island and of the associated BOP facilities for newly built and extended Generation II and improved Generation II nuclear power units of the 600 MW to 1000 MW class.

The range of BOP sub-items to which this norm applies is given in Annex 1 List of BOP sub-items; other BOP sub-item works may be estimated by reference to this norm.

3. This norm is the basis for the preparation of the budget estimate of the works at the preliminary design stage.

It is the reference basis for the preparation of the tender control price and of the bid quotation at the preliminary design stage.

It is also the basis on which, where so agreed in the contract at the construction drawing stage, the construction drawing quantities are calculated in accordance with the quantity calculation rules of the budget estimation norm for the purposes of project settlement and final accounts.

4. This norm has been established taking into account the construction organization design and the normal construction conditions that are reasonable at the present stage of nuclear power plant construction works.

The selection and allocation of construction machinery has been determined on a comprehensive basis according to the different circumstances of the different sub-items.

The horizontal transport distances and the installation heights have been taken as the averages of the conditions generally met in the majority of projects.

Except where the norm expressly permits adjustment or conversion, the norm shall not be adjusted on account of differences in the construction organization design, the machinery allocation or the transport distance or height of an individual actual project.

5. Basis of preparation of this norm and main references:

1) Guideline for the nature of costs and the breakdown of items of nuclear power plant construction projects (NB/T 20023-2010).

2) Budget norm of nuclear power plant construction project works - Conventional island electrical equipment installation works.

3) Construction drawings of the conventional island of nuclear power plants and of the associated BOP works.

4) Construction schemes for the conventional island of nuclear power plants and for the associated BOP works, including the construction organization design, the construction technical schemes and the construction measures.

6. The range and the content of the norm sub-items are set out in the explanatory notes of each chapter. For the range and the content of the related construction procedures, refer to the relevant explanations of the Budget norm of nuclear power plant construction project works - Conventional island electrical equipment installation works.

2 Volume description - consumption quantities, price level and conventions