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

NB/T 32047-2018

**Standard for quality assessment of civil engineering
construction unit of photovoltaic power station**

光伏电站土建施工单元工程质量评定标准

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Foreword

This document was issued on 6 June 2018 by the National Energy Administration of the PRC and takes effect on 1 October 2018.

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 27.160, Chinese classification P 61.

This standard has been formulated in accordance with the requirements of the Notice of the National Energy Administration on Issuing the Second Batch of Plans for the Formulation (Revision) of Industry Standards in the Energy Field for 2014 (Guo Neng Ke Ji [2015] No. 12).

During the preparation of this standard, extensive investigation, research and thematic discussions were carried out; the practical experience of civil engineering construction of photovoltaic power stations in China was comprehensively summarised; relevant domestic and international materials were consulted; and, on the basis of soliciting the opinions of all parties involved in engineering construction, the final draft was settled after examination.

The main contents of this standard cover earth and stone excavation and backfilling, foundations for photovoltaic module supports, buildings and structures, cable pipe trenches, water supply and drainage of the site area, and roads of the site area.

Chief editing organisation of this standard: Sinohydro Bureau 4 Co., Ltd. (China Water Resources and Hydropower Fourth Engineering Bureau Co., Ltd.).

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Comments and suggestions arising during the implementation of this standard should be fed back to the Standardization Management Centre of the China Electricity Council (No. 1, Baiguanglu Ertiao, Beijing, 100761).

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National Energy Administration Announcement No. 8 of 2018: in accordance with the relevant provisions of the Notice of the National Energy Administration on Issuing the Measures for the Administration of Standardization in the Energy Field (Trial) and their Implementing Rules (Guo Neng Ju Ke Ji [2009] No. 52), and after examination, the National Energy Administration approved 87 industry standards including Quality Control Requirements for the Directional Well Bore of Coalbed Methane Wells, among which 47 are energy standards (NB) and 40 are electric power standards (DL), and hereby issues them.

Attachment, catalogue of industry standards, item 86: standard number NB/T 32047-2018, standard name Standard for quality assessment of civil engineering construction unit of photovoltaic power station, no superseded standard, no adopted-standard number, date of approval 2018-06-06, date of implementation 2018-10-01. Issued by the National Energy Administration on 6 June 2018.

1 Scope

NB/T 32047-2018 sets out how the civil works of a photovoltaic power station are assessed for quality, unit of work by unit of work. A solar plant is civil engineering spread thin over a large area - thousands of module support foundations, access roads, cable trenches, inverter and transformer stations, control buildings, drainage and perimeter walls - and the standard turns that into a countable inspection scheme. It defines the unit of work and how a site is divided into them, the inspection lots within each, and the grades of assessment

with the pass thresholds at each level. It then gives the assessment content and the tables of checkpoints for each type of work: earthworks and site preparation, cast-in-place and precast foundations for the module arrays, anchor and pile foundations including their installation tolerances, concrete and reinforcement work, buildings and structures, roads and hardstanding, cable trenches and ducts, drainage, and perimeter walls and fencing. For each checkpoint it states the permitted deviation, the measuring method and the number of measurements required, so that two assessors reach the same result from the same site. The treatment of non-conforming lots, the records to be kept, and the form of the assessment report complete the document. Owners, contractors and supervising engineers use it during construction and at acceptance of photovoltaic plants in China.

1.0.1 This standard is formulated in order to standardise the assessment of the construction quality of unit projects of civil engineering works of photovoltaic power stations.

1.0.2 This standard is applicable to the civil engineering works of newly built, rebuilt and extended ground-mounted photovoltaic power stations.

1.0.3 The construction unit (contractor) shall establish a construction quality management system and a quality inspection system.

1.0.4 In addition to complying with this standard, the acceptance and quality assessment of the construction quality of civil engineering works of photovoltaic power generation shall also comply with the provisions of the relevant current national standards.

2 Terms

2.0.1 photovoltaic power station: a power station in which the photovoltaic power generation system is the main part, and which includes all kinds of buildings and structures together with auxiliary facilities for overhaul, maintenance and daily living.

2.0.2 unit project: according to the requirements of design, construction or quality assessment, a building is divided into a number of layers, blocks, zones, sections and the like; a unit project is usually a complex completed through several working procedures, and it is also the basic unit for assessing the quality of the construction process.

2.0.3 major control items: inspection items that play a decisive role in the function of the unit project, or that have a significant influence on safety, health or the environment.

2.0.4 general project (general items): inspection and testing items other than the major control items.

2.0.5 PV module bracket: the special-purpose bracket designed in a photovoltaic power generation system for placing, installing and fixing the photovoltaic modules.

3 Basic requirements