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ICS 27.180
CCS P 61

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ENERGY INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

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NB/T 10209-2019

Code for design of road for wind power projects

风电场工程道路设计规范

Issued on: June 4, 2019 **Implemented on: October 1, 2019**

Issued by: National Energy Administration of the PRC

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Foreword

This document was issued on 4 June 2019 by the National Energy Administration of the PRC and takes effect on 1 October 2019.

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 27.180, Chinese classification P 61.

In accordance with the requirements of the Notice of the National Energy Administration on Issuing the 2016 Plan for the Formulation and Revision of Energy Sector Industry Standards (Guoneng Keji [2016] No. 238), the drafting group conducted extensive investigation and research, carefully summarized practical experience and, on the basis of widely soliciting opinions, formulated this code.

The main technical contents of this code are: basic requirements, route selection, road alignment, subgrade, pavement, bridges, tunnels and culverts, and traffic engineering and roadside facilities.

The National Energy Administration is in charge of the administration of this code. China Renewable Energy Engineering Institute proposed the code and is responsible for its routine management, and the Wind Power Planning and Design Sub-committee of the Energy Industry Wind Power Standardization Technical Committee is responsible for the explanation of specific technical contents.

Comments or suggestions arising during implementation should be sent to China Renewable Energy Engineering Institute (address: No. 2 Liupukang Beixiaojie, Xicheng District, Beijing; postcode 100120).

Chief development organizations: PowerChina Beijing Engineering Corporation Limited; PowerChina Zhongnan Engineering Corporation Limited.

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Chief drafting staff: Wu Chengzhi, Qin Xiaoming, Wang Dong, Zhang Qing, Yu Shaofeng, Fu Liangming, Wang Bin, Liu Xiaosong, Qi Zhicheng, Yan Biao, Li Shaopeng, Chen Guibin, Zhang Shijia, Zhao Zheng, Liu Mingxue, Luo Jianguo, Hu Yixin, Liu Guangming.

Chief reviewers include: Yi Yuechun, Shen Kuanyu, He Wei, Zhou Ena, Li Fagui, Zhou Caiquan, Yu Huafeng, Ma Fuxiang, Liu Yinhai, Gao Pengfei, Xue Jingjing, Ding Juntian, Lian Songtao, Wu Hupo, Chen Kangdong, Chen Shiqiang, Zhou He, Xu Changhong, Xie Hongwen, Chang Zuowei, Qing Huabin, Hu Xiaofeng, Du Gang, Li Shisheng.

Publication information

NB/T 10209-2019 is an energy industry standard of the People's Republic of China, published in the recommended (NB/T) series under the title Code for Design of Road for Wind Power Projects.

Classification on the cover: ICS 27.180; CCS P 61. The cover carries no reference to a superseded standard.

Issued on 2019-06-04 and implemented from 2019-10-01. Issued by the National Energy Administration.

Chief development department: China Renewable Energy Engineering Institute. Approval department: National Energy Administration. Implementation date: 1 October 2019. Published in Beijing, 2019.

The code was approved by National Energy Administration Announcement No. 4 of 2019, dated 4 June 2019, which approved and published 297 industry standards headed by the Code for Electrical Design of Photovoltaic Power Projects: 105 energy standards (NB), 168 electric power standards (DL) and 24 petrochemical standards (NB/SH).

In the list of industry standards attached to the announcement, this code appears as item 82: NB/T 10209-2019, Code for Design of Road for Wind Power Projects, with no superseded standard and no adopted international standard, approval date 2019-06-04 and implementation date 2019-10-01.

Structure of the complete code

Chapter 4, Route Selection (from page 8), comprises 4.1 General Requirements, 4.2 Principles and 4.3 Key Points.

Chapter 5, Road Alignment (from page 11), comprises 5.1 General Requirements, 5.2 Horizontal Alignment, 5.3 Vertical Alignment, 5.4 Alignment Design and 5.5 Road Intersection.

Chapter 6, Subgrade (from page 17), comprises 6.1 General Requirements, 6.2 Roadbed, 6.3 Embankment, 6.4 Excavation, 6.5 Subgrade Protection, 6.6 Subgrade Drainage, 6.7

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Borrow Area and Spoil Area and 6.8 Widening of Subgrade.

Chapter 7, Pavement (from page 25), comprises 7.1 General Requirements, 7.2 Structures and Types of Pavement, 7.3 Combination Design of Pavement Structures and 7.4 Pavement Materials.

Chapter 8, Bridge, Tunnel and Culvert, begins on page 29.

Chapter 9, Traffic Engineering and Roadside Facilities (from page 31), comprises 9.1 General Requirements and 9.2 Laying Requirements.

The code closes with Appendix A, Calculation for Circular Curve Widening (page 33), the Explanation of Wording in This Code (page 37), the List of Quoted Standards (page 38) and the Addition: Explanation of Provisions (page 39).

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1 Scope

NB/T 10209-2019 is the Chinese design code for the roads of wind farm projects. A wind farm road is a peculiar piece of highway engineering: it may carry very little traffic for twenty years, but during construction it must deliver blades longer than seventy metres, tower sections and nacelles weighing well over a hundred tonnes, and cranes of several hundred tonnes, often up mountain ridges. Its geometry is governed by the longest and heaviest load rather than by traffic volume. The code sets the general provisions and the defined terms, then the classification of wind farm roads into access roads, main internal roads, secondary internal roads and the substation road, and the design criteria for each. It covers route selection and the survey on which it rests, then the geometric design - horizontal curve radii and widening for long vehicles, gradients and the length of steep sections, vertical curves, cross sections and passing places - with the tables of limiting values and their notes. Subgrade design follows, with cut and fill slopes, drainage and protection, then pavement design for the construction loads and for the long operating period, and the bridges and culverts along the route. Turning areas and crane hardstands, traffic safety features, the treatment of the road after construction, and environmental protection and soil conservation close the code.

1.0.1 This code is formulated with a view to standardizing the design of roads for wind power projects.

1.0.2 This code is applicable to the design of roads for newly built, reconstructed and expanded wind power projects.

1.0.3 In addition to this code, the design of roads for wind power projects shall also comply with the provisions of the current relevant standards of the nation.

2 Terms

2.0.1 Access roads: roads connecting the local road network with the wind farm site.

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