

ICS 27.180
CCS P 61

NB

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

NB/T 10104-2018

Specification for surveying of offshore wind power projects

海上风电场工程测量规程

Issued on: December 25, 2018

Implemented on: May 1, 2019

Issued by: National Energy Administration of the PRC

Table of Contents

1 General Provisions	1
2 Terms	2
3 Basic Requirements	3
4 Control Survey	5
4.1 General Requirements	5
4.2 Horizontal Control Survey	5
4.3 Vertical Control Survey	7
4.4 Documentation	11
5 Water Level Control	12
5.1 General Requirements	12
5.2 Tidal Station Setting	13
5.3 Water Level Observation	15
5.4 Mean Sea Level Determination	16
5.5 Sounding Datum Determination	17
5.6 Documentation	18
6 Topographic Survey	19
6.1 General Requirements	19
6.2 Coastal Topographic Survey	20
6.3 Bathymetric Survey	21
6.4 Topographic Map Compilation	24
6.5 Documentation	26
7 Special Survey	27
7.1 Exploration Point Survey	27
7.2 Navigation Aids Survey	27
7.3 Submarine Obstacle Detection	28
7.4 Seabed Pipeline Route Survey	28
7.5 Sea Area Use Register Survey	29
7.6 Construction Survey	31
7.7 As-Built Survey	31
7.8 Deformation Monitoring	32
8 Spatial Data Editing and GIS Development	34
8.1 General Requirements	34

8.2 Spatial Data Editing and Storage	34
8.3 GIS Development	35
9 Inspection, Acceptance and Archiving	37
9.1 Inspection and Acceptance	37
9.2 Archiving	37
Appendix A Mean Sea Level Determination Methods for Short-Term and Temporary Tide Stations	39
Appendix B Operational Requirements for Bathymetric Survey by RTK Without Tidal Observation	41
Appendix C Tests on Stability and Navigation for Single-Beam Echosounder	43
Appendix D Operational Requirements for Multibeam Sounding System	44
Appendix E Operational Requirements for Side Scan Sonar Survey	47
Appendix F Operational Requirements for Sub-Bottom Profiler Survey	51
Appendix G Operational Requirements for Marine Magnetic Survey	54
Explanation of Wording in This Specification	56
List of Quoted Standards	57
Addition: Explanation of Provisions	59

Foreword

This document was issued on 25 December 2018 by the National Energy Administration of the PRC and takes effect on 1 May 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.

This specification was prepared in accordance with the requirements of the Notice of the National Energy Administration on Issuing the Plan for the Formulation and Revision of Energy Sector Industry Standards, Second Batch of 2014 (Guo Neng Ke Ji [2015] No. 12). The drafting group carried out extensive investigation and research, earnestly summarised practical experience, referred to relevant advanced standards in China and abroad, and prepared this specification on the basis of a wide solicitation of opinions.

The main technical contents of this specification are: control survey; water level control; topographic survey; special survey; spatial data editing and geographic information system development; and inspection, acceptance and archiving.

This specification is under the administration of the National Energy Administration. The China Renewable Energy Engineering Institute proposed this specification and is

responsible for its routine administration.

The Sub-Technical Committee on Wind Farm Planning and Design of the Wind Power Standardization Technical Committee of the Energy Industry is responsible for the interpretation of the specific technical contents. Should any comment or suggestion arise in the course of implementation, it should be sent to the China Renewable Energy Engineering Institute, at No. 2 Liupukang Beixiaojie, Xicheng District, Beijing, postcode 100120.

Chief compiling organisations of this specification: PowerChina Huadong Engineering Corporation Limited; Zhejiang Huadong Mapping and Geoinformation Co., Ltd.

Participating compiling organisation of this specification: Zhejiang Huadong Construction Engineering Co., Ltd.

Main drafters of this specification: Yan Zhanglin, Shan Zhigang, Shi Jianwei, Feng Lei, Gao Hongqi, Wang Mingyuan, Zhu Chengrui, Shi Jinxiang, Luo Xujia, Xu Weihong, Jiang Peiwu, Xu Zhongbiao, Weng Pengfei, Li Xingkai, Zhang Kun, Li Xiaofei, Xu Jian and Yan Peng.

Main reviewers of this specification: Bao Jingyang, Guo Jiming, Wang Huiming, Huang Jingbo, Lu Enfeng, Gou Shengguo, Xiao Shengchang, Xie Niansheng, Liu Dongqing, Ren Shaohua, Liu Guiping, Ying Yuankang, Bao Jiang, Xi Minwei, Tang Wenyu and Li Shisheng, together with one further expert, seventeen reviewers in all.

Publication and Approval Data

The cover of the document identifies it as an Energy Industry Standard of the People's Republic of China, designation NB/T 10104-2018.

The International Classification for Standards number shown on the cover is ICS 27.180, and the Chinese Standard Classification number is P 61.

The filing number recorded on the cover is J2646-2019.

The Chinese title of the document is the specification for surveying of offshore wind farm engineering projects; the official English title printed on the cover and on the title page is Specification for Surveying of Offshore Wind Power Projects.

The cover states that the standard was issued on 25 December 2018 and came into force on 1 May 2019. The issuing body named at the foot of the cover is the National Energy Administration.

The title page states that the chief editing department is the China Renewable Energy Engineering Institute, that the approving department is the National Energy Administration, and that the date of implementation is 1 May 2019.

The title page carries the publication line Beijing, 2019.

The document reproduces Announcement No. 16 of 2018 of the National Energy Administration. In accordance with the Notice of the National Energy Administration on Issuing the Administrative Measures for Standardization in the Energy Sector (Trial) and the Detailed Rules for their Implementation (Guo Neng Ke Ji [2009] No. 52), and following examination, the National Energy Administration approved 204 industry standards, headed by the Code for Geological Investigation of Photovoltaic Power Generation Projects, of which 32 are energy standards (NB) and 172 are electric power standards (DL), and issued them. The announcement is dated 25 December 2018 and carries an attached catalogue of industry standards.

In the attached catalogue of industry standards this document appears as serial number 5, standard number NB/T 10104-2018, with no superseded standard and no adopted international standard indicated, an approval date of 25 December 2018 and an implementation date of 1 May 2019.

Structure of the Document

The official English contents page of the document lists nine numbered chapters, seven appendices and three items of back matter. The pagination given below is that printed in the contents.

Chapter 1, General Provisions, begins on page 1.

Chapter 2, Terms, begins on page 2.

Chapter 3, Basic Requirements, begins on page 3.

Chapter 4, Control Survey, begins on page 5 and is divided into 4.1 General Requirements (page 5), 4.2 Horizontal Control Survey (page 5), 4.3 Vertical Control Survey (page 7) and 4.4 Documentation (page 11).

Chapter 5, Water Level Control, begins on page 12 and is divided into 5.1 General Requirements (page 12), 5.2 Tidal Station Setting (page 13), 5.3 Water Level Observation (page 15), 5.4 Mean Sea Level Determination (page 16), 5.5 Sounding Datum Determination (page 17) and 5.6 Documentation (page 18).

Chapter 6, Topographic Survey, begins on page 19 and is divided into 6.1 General Requirements (page 19), 6.2 Coastal Topographic Survey (page 20), 6.3 Bathymetric Survey (page 21), 6.4 Topographic Map Compilation (page 24) and 6.5 Documentation (page 26).

Chapter 7, Special Survey, begins on page 27 and is divided into 7.1 Exploration Point Survey (page 27), 7.2 Navigation Aids Survey (page 27), 7.3 Submarine Obstacle Detection (page 28), 7.4 Seabed Pipeline Route Survey (page 28), 7.5 Sea Area Use Register Survey (page 29), 7.6 Construction Survey (page 31), 7.7 As-Built Survey (page 31) and 7.8 Deformation Monitoring (page 32).