ICS 27.140
CCS P 59

NB

ENERGY INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

NB/T 35042-2024

Replacing NB/T 35042-2014

Code for communication design of hydropower plants

水力发电厂通信设计规范

Issued on: May 24, 2024 **Implemented on: November 24, 2024**

Issued by: National Energy Administration of the PRC

Table of Contents

Foreword

This document was issued on 24 May 2024 by the National Energy Administration of the PRC and takes effect on 24 November 2024.

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 27.140, Chinese classification P 59.

It replaces NB/T 35042-2014, which is superseded.

In accordance with the requirements of the 'Notice of the General Department of the National Energy Administration on Issuing the 2021 Energy Sector Industry Standard Formulation and Revision Plan and Foreign-Language Version Translation Plan' (Guo Neng Zong Tong Ke Ji [2021] No. 92), the drafting group revised this code through extensive investigation and research, careful summarization of practical experience, reference to relevant advanced domestic and foreign standards, and on the basis of wide solicitation of opinions.

The main technical contents of this code are: general provisions; composition of the communication system and selection of communication modes; in-plant communication and emergency communication of hydropower plants; communication for access to the power system; communication between the hydropower plant and the centralized control center; construction communication; communication for the automatic hydrologic forecast system; power line carrier communication; optical fiber communication; digital microwave communication; very small aperture terminal (VSAT) system for domestic satellite communication; communication power supply; communication lines; lightning protection and earthing of communication equipment; seismic design for installation of communication equipment; and requirements for communication equipment layout and for buildings of special communication rooms.

The main technical contents revised in this code are as follows:

- The scope of application has been revised to 'This code is applicable to the communication design of newly built, reconstructed and extended hydropower plants'.

- Requirements for soft switching have been added.

- Transmission quality indexes for power line carrier communication when transmitting relay protection and security and stability control device signals have been added.

- Provisions on the SDH-based multi-service transport node (MSTP) have been added.

- Provisions on spread-spectrum digital microwave communication and packet digital microwave communication have been added.

- Provisions on the route selection and laying of communication optical cable lines have been added.

- The requirements for communication between the hydropower plant and the centralized control center have been revised.

- The requirements for the selection of communication modes of the automatic hydrologic forecast system have been revised.

- The requirements for communication rooms of hydropower plants have been revised.

- The chapter 'Satellite Communication Earth Station' of the previous code has been deleted.

- The section 'Frequency Separation Filter' of the previous code has been deleted.

- The two sections 'Special Optical Cables for Power Systems' and 'Optical Repeater Station' of the previous code have been deleted.

- The section 'Digital Interface for Microwave Transmission of Relay Protection Information' of the previous code has been deleted.

- The section 'Centralized Monitoring System for Communication Power Supply' of the previous code has been deleted.

- The section 'Integrated Cabling System' of the previous code has been deleted.

- The two sections 'Lightning Protection and Earthing of Optical Repeater Stations' and 'Lightning Protection and Earthing of Satellite Earth Stations' of the previous code have been deleted.

This code is under the administration of the National Energy Administration, is proposed and routinely managed by China Renewable Energy Engineering Institute, and the energy industry standardization technical committee for hydropower electrical design (NEA/TC17) is responsible for the explanation of specific technical contents. Any comments or suggestions arising during implementation should be sent to China Renewable Energy Engineering Institute (address: No. 57 Jia and No. 57 Yi, Andingmenwai Street, Dongcheng District, Beijing; postcode: 100011).

Chief development organization: PowerChina Northwest Engineering Corporation Limited.

Participating development organization: PowerChina Huadong Engineering Corporation Limited.

Chief drafting staff: Wang Jun, Yang Zhenhuan, Tong Tianqi, Wang Debing, Cao Yizhou, Xu