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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18482-2026

Replacing GB/T 18482-2010

**Code for the startup and commissioning of reversible pumped
storage units**

可逆式抽水蓄能机组启动试运行规程

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1 Scope

GB/T 18482-2026 is the Chinese national standard covering commissioning a pumped storage machine - a unit that must run as a turbine and as a pump and change between the two, so the commissioning programme has to prove both directions, the transitions and the behaviour of the whole waterway. At 21,500 words it replaces GB/T 18482-2010, and it was issued and took effect on the same day, 30 April 2026. It was issued on 30 April 2026 and has been in force since 30 April 2026, replacing GB/T 18482-2010. This page is published from the official record of the 2026 edition; the clause text of a standard this recent is not yet in circulation, and the figures, limits and tables it contains are those of the document itself, delivered in full with the English translation.

This document specifies the start-up and commissioning procedures for reversible pumped storage units (hereinafter referred to as "units"), including pre-start-up preparations, start-up tests, and... Technical requirements for trial operation and handover. This document applies to the start-up and trial operation of reversible pumped storage units with constant speed.

4 General Requirements

4.1 The unit start-up and trial operation should be carried out after all equipment installations and component commissionings have been completed and passed acceptance.

4.2 Before unit startup, the power plant shall establish a Start-up Acceptance Committee (hereinafter referred to as the Start-up Committee) to uniformly manage the start-up acceptance work. The commission will establish a trial operation command center, and the duties and responsibilities of the commissioning committee are detailed in Appendix A.

4.3 The unit startup and trial operation shall be carried out according to the following procedures.

- a) Pre-startup preparations. Review relevant documents and materials, and inspect the unit's startup-related systems and equipment. The Startup Committee will review the startup preparations. The situation was checked to confirm that the conditions for startup were met.
- b) Conduct an initiation test and verify the test results.
- c) The trial operation meets the assessment requirements. The commissioning committee will inspect the completion of the trial operation and conduct an overall evaluation of the unit.
- d) Hand over the generator set and related documents and materials to prepare for commercial operation.

5.1 General Requirements

5.1.1 The unit has been installed and partially commissioned and has passed acceptance.

5.1.2 The power plant signs a grid connection and dispatch agreement and a power purchase and sale contract with the power grid company.

5.1.3 The unit passed the quality supervision and inspection and obtained the power construction project grid connection opinion letter.

5.1.4 The Commission approves the Trial Operation Outline. The contents of the Trial Operation Outline are detailed in Appendix B.

5.1.5 The trial operation command approved the start of the trial operation test plan.

5.1.6 The outline for the trial operation and related test plans have been submitted to the relevant power grid departments for review and filing.

5.1.7 The personnel responsible for starting the trial operation have completed the division of labor, briefing, and training.

5.1.8 Operational staff shall complete training and obtain the corresponding qualification certificates, and be qualified to work.

5.1.9 The equipment and ground related to the start-up of this unit have been cleaned, the roads are unobstructed, and the lifting holes and temporary openings have been sealed.

5.1.10 Command and communication related to the startup of this unit are unimpeded.

5.1.11 All equipment related to the startup of this unit has been uniformly numbered and labeled.

5.1.12 Operating equipment and non-operating equipment have been isolated and prominent safety warning signs have been erected.

5.1.13 The monitoring instruments and meters related to the startup of this unit are ready and within the validity period of their inspection certificates.

5.1.14 The special equipment related to the start-up of this unit, such as air tanks, pressure oil tanks, pressure pipelines and accessories, have obtained the required special equipment use permits. Use the registration certificate.

5.3.1 Water conveyance system and unit flow channel

5.3.1.1 The water filling test of the water supply system and unit flow channels has been completed, and the steps and methods shall comply with the provisions of Appendix C.

5.3.1.2 The grouting holes and other seals of the tailrace water conveyance system are intact, and the trash racks have passed inspections of the channel entry and the cleanliness of the flow channel behind the racks. The flow from the lower reservoir to the tailrace... The tailrace system channel between the floodgates has been filled with water.

5.3.1.3 The inlet and outlet gates, opening and closing equipment, and their control systems of the lower reservoir have been installed and commissioned successfully. The gates can be opened and closed on-site under still water conditions. Normally, the opening and closing times meet the design requirements, and the gate is in the fully open position.

5.3.1.4 The pressure readings at all points on the pressure steel pipe are normal, the grouting holes in the water diversion and conveying system are properly sealed, and the trash rack in the trench and the flow channel behind the rack are inspected. The cleanliness inspection passed.

5.3.1.5 The inlet and outlet gates, opening and closing equipment, and their control systems of the upper reservoir have been installed and commissioned successfully. The gates can be opened and closed on-site under still water conditions. Normally, the opening and closing times meet design requirements; the emergency gate closing button is used in the central control room and other locations to close the inlet and outlet gates of the upper reservoir, and the action is normal. Normal; the gate is in the fully open position.

5.3.1.6 The pressure readings on all parts of the spiral casing and tailrace pipe are normal.

5.3.1.7 The tailrace emergency gate, opening and closing equipment, and its control system have been installed and commissioned successfully. Under still water conditions, the on-site gate opening and closing functions normally. The timeframe meets design

requirements; the emergency gate closure button was used in the central control room and other locations to close the tailrace emergency gate, and the operation was normal; the gate is fully open. Location.

5.3.1.8 The hydraulic monitoring systems for the upper and lower reservoirs and surge tanks have been installed, commissioned, and are functioning correctly, and the monitoring system is providing accurate feedback.

5.3.2 Water pumps, turbines, and their auxiliary equipment

5.3.2.1 All components of the water pump and turbine have been installed and passed inspection.

5.3.2.2 The tailrace pipe and spiral casing inlet door are closed.

5.3.2.3 The top cover's gravity drainage holes are unobstructed, and the top cover's drainage pump has been installed, commissioned, and put into automatic operation.

5.3.2.4 The spindle working seal and maintenance seal have been installed and tested successfully. The valves in the working seal water supply pipeline are functioning normally, and the water pressure and flow rate are within acceptable limits. It has been adjusted to the design specifications, and the main and backup water source switching function is working normally.

5.3.2.5 The water-guided bearing lubrication and cooling system has been installed and commissioned successfully, and the oil level in the water guide oil tank should meet the design requirements.

5.3.2.6 The water guiding mechanism has been installed. The clearance between the guide vanes, the end clearance, and the clamping stroke of the servo motor should meet the design requirements. The shear pin and... Other guide vane protection devices are functioning normally.

5.3.2.7 The guide vane position switch, temperature measuring device and other automated components have been installed and debugged to be qualified, and the monitoring system provides correct feedback.

5.3.2.8 The volute drain valve and tailpipe drain valve operate normally and are in the closed state.

5.3.2.9 The valves in the upper and lower leak-proof ring water supply pipelines are functioning normally, and the water pressure and flow rate have been adjusted to the design values.

5.3.2.10 The bolt tightening of important parts such as water pump turbine, top cover, spiral casing inlet door, tailrace pipe inlet door, etc. has passed the inspection.