ICS 13.020.01
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NATIONAL STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

GB/T 31328-2014

Specification for the operation and management of reverse osmosis seawater desalination systems

海水淡化反渗透系统运行管理规范

Issued on: December 5, 2014 **Implemented on: June 1, 2015**

Issued by: General Administration of Quality Supervision, Inspection and Quarantine;
Standardization Administration of the PRC

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Foreword

This standard was drafted in accordance with GB/T 1.1-2009 given rules. This standard by the National Standardization Technical Committee membrane (SAC/TC382) and focal points. This standard was drafted. Hangzhou Water Treatment Technology Research and Development Center Co., Ltd., State Oceanic Administration, Tianjin desalination and comprehensive utilization RESEARCH Studies, Hangzhou (torch) West Doumen Film Industry Co., Ltd., Lansing (Hangzhou) Co., Ltd. film industry, China Metallurgical Group Corporation Limited, boat Liuheng Hill City Water Co., Ltd., Tianjin Motian Membrane Technology Co., Ltd. The main drafters of this standard. Yang Bo, Chen Wensong, Kang Xiaohui, Zhang Xi Jian, Sun autumn, the river Li Zhao, Zheng Honglin, Zhang Yaoling, Pan Xianhui, Fan Xiong, Tangwan Ming, Dai Haiping, Wang Wei. Seawater desalination reverse osmosis system operation and management

1 Scope

China's national specification for operating and managing reverse osmosis seawater desalination systems. It specifies the work involved, covering preparation for operation,

operation and management, and safety, health and environmental requirements, and it applies to the operation and management of reverse osmosis desalination systems producing a thousand tonnes a day or more; systems of other capacities may use it as a reference. Reverse osmosis desalination is a process whose economics and whose failures both live in the membrane. Seawater is forced against semi-permeable membranes at pressures of tens of bar, and fresh water passes while salt is left behind. The membrane elements are the largest consumable, they are expensive, and their life depends almost entirely on how the plant is run rather than on how it was built. Three things destroy them: fouling by biological growth and suspended matter, scaling as the concentrated brine passes its solubility limits, and chemical attack, most commonly by oxidants that were dosed to control the fouling. All three are consequences of operating decisions taken hours or days earlier, and none of them announces itself - performance drifts, the pressure needed rises, and by the time the numbers are obviously wrong the membranes have already been damaged. That is why this document is a management specification rather than a design one, and why two of its four annexes are normative: one lists the technical information the plant must hold, and the other lists the operating parameters that must be recorded. Two further informative annexes classify faults and alarms with their consequences, and give emergency responses. Issued on 5 December 2014 and in force since 1 June 2015.

This standard specifies the work content desalination reverse osmosis system operation and management, including operational readiness, operation and management, safety, health and the Habitat requirements. This standard applies to the operation and management of Nissan kiloton or more desalination reverse osmosis system, reverse osmosis system operation and management of other parameters According to use.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references, the latest edition (including any amendments) applies to this document.

GB 2894 Safety Signs and use guidelines

GB 5749 drinking water health standards

GB 12348 industrial enterprises of environmental noise emission standard plant boundary

GB/T 20103 membrane separation technology terms DL/T 572 power transformer operating procedures

3 Terms and Definitions

GB/T 20103 and defined by the following terms and definitions apply to this document. For ease of use, repeat the following list GB/T 20103 in some terms and definitions.

3.1 RO reverseosmosis At temperatures above the osmotic pressure difference, a solvent (e.g., water) through a semipermeable membrane into the low pressure side of the membrane, and the solution of other components (e.g. Salt) are blocked in the high-pressure side of the membrane and is discharged with the concentrated solution to achieve effective separation process. [GB/T 20103-2006, the definition 4.2.2]

3.2 Membrane membranemodule By the membrane element, the housing, the inner coupling member, the end plates and seals and other components of practical devices.

Note. The membrane in housing may contain one or several membrane elements. [GB/T 20103-2006, the definition 2.2.3]

3.3 Reverse osmosis desalination systems reverseosmosissystemforseawaterdesalination By the sea water, pretreatment, reverse osmosis membrane, high pressure pumps, energy recovery, post-processing systems and other equipment and facilities thereof.

3.4 Chemically enhanced backwash chemicalyenhancedbackwash Ultra (micro) membrane permeate side by adding a certain concentration of chemicals, by backwashing, soaking, etc., will be formed in the filtration process