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

GB/T 17680.1-2008

Replacing GB/T 17680.1-1999

**Criteria for emergency planning and preparedness for nuclear
power plants - Part 1: The dividing of emergency planning zone**

核电厂应急计划与准备准则 第1部分：应急计划区的划分

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Foreword

GB/T 17680 Criteria for emergency planning and preparedness for nuclear power plants is divided into 12 parts. - Part 1. The dividing of emergency planning zone; - Part 2. Offsite emergency functions and organizations; - Part 3. Functional and physical characteristics of the offsite emergency facilities; - Part 4. The offsite emergency planning and implementing procedures; - Part 5. Maintenance of offsite emergency response capabilities; - Part 6. On-site emergency response functions and organizations; - Part 7. Function and physical characteristics of on-site emergency facilities; - Part 8. On-site emergency planning and implementing procedures; - Part 9. Maintenance of on-site emergency response capacity; - Part 10. Criteria for emergency radiological field monitoring, sampling and analysis conducted by nuclear power plant operating organizations; - Part 11. Criteria for the conduct of offsite radiological assessment for emergency response; - Part 12. Planning, development, conduct and evaluation of nuclear emergency drills and exercises. This Part is part 1 of GB/T 17680. This Part adopts internationally-used general safety codes for confirming the emergency planning zone of the nuclear power plant, and references to the division codes of emergency planning zone of the nuclear power plant in America, Canada, France, England, etc. This Part replaces GB/T 17680.1-1999 Criteria for emergency planning and preparedness for nuclear power plants - The dividing of emergency planning zone. This revision is mainly for some editing modification. The main differences between GB/T 17680.1-1999 and this Part are as follows: - The contents of the forward are more comprehensive; clarify that this Part provides the technical basis for the emergency planning zone of nuclear power plant. - The reference document is revised to be the national standard GB 18871 that is formally issued and executed by our country. - The regulations in previous clause 4.4.4 "considering the release of radioactive substance to the atmosphere, optionally considering the release of radioactive substance to the water when confirming the scope of the emergency planning zone" are deleted. - In 6.1.1, the

regulations for considering the heat power of unit reactor are considered when confirming the scope of plume emergency planning zone. This Part was proposed by China National Nuclear Corporation. This Part shall be under the jurisdiction of National Nuclear Energy Standardization Technology Committee. The drafting organizations of this Part. Nuclear Industry Standardization Institute, Guangdong Nuclear Power Joint Venture Company, and Safety & Quality Department of China National Nuclear Corporation. Main drafter of this standard. Zhuo Fengguan. The previous version replaced by this standard is as follows: - GB/T 17680.1-1999. Criteria for Emergency Planning and Preparedness for Nuclear Power Plants - Part 1. The Dividing of Emergency Planning Zone

1 Scope

GB/T 17680.1-2008 is the Chinese national standard on criteria for emergency planning and preparedness for nuclear power plants - part 1: the dividing of emergency planning zone, in the field of energy and heat transfer engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most foreign buyers meet it. It was issued on 2 July 2008 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 April 2009. Classification: ICS 27.120.20, CCS F77. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

This Part of GB/T 17680 specifies the general division codes of emergency planning zone of nuclear power plant; it recommends the scope of the emergency planning zone of pressurized water reactor nuclear power plant. This Part is suitable for dividing the emergency planning zone of pressurized water reactor nuclear power plant; the division of the emergency planning zone of other types of reactor nuclear power plant can refer to this Part.

2 Normative references The articles contained in the following documents have become part of this Part of GB/T 17680 when they are quoted herein. For the dated documents so quoted, all the modifications (excluding corrections) or revisions made thereafter shall not be applicable to this Part. For the undated documents so quoted, the latest editions shall be applicable to this Part. GB 18871 Basic standards for protection against ionizing radiation and for the safety of radiation sources

3 Terms and definitions For the purpose of this Part of GB/T 17680, the following terms and definitions apply.

3.1 Emergency planning zone A zone that is established around the nuclear power plant in advance, within which the emergency plan has been prepared and emergency preparation

has been made, in order to timely and effectively adopt protective action to protect the public when the nuclear power plant has an accident.

3.2 Plume emergency planning zone An emergency plan zone that is established in accordance with exposure pathways of plume (external exposure of plume immersion, internal exposure of ingestion, and the following rule. Out of the scope of ingestion emergency planning zone, the pollution level of food and drinking water that are caused by majority of serve accident series shall not exceed the general action level of food and drinking water as regulated in GB 18871.

6.1 Zone scope

6.1.1 Under the precondition of conforming to the safety rules in 5.2, the scope of the plume emergency planning zone of pressurized water reactor nuclear power plant shall consider the heat power of the reactor; it shall be confirmed based on the range that the reactor acts as center and the radius is 7-10km. The scope of the plume emergency planning zone shall consider the heat power of the reactor; and it shall be confirmed based on the range that the reactor acts as center and the radius is 3-5km.

6.1.2 Under the precondition of considering the safety rules in 5.3, for pressurized water reactor nuclear power plant, the scope of the ingestion emergency planning zone shall be, in the stage of emergency planning and preparation, considered and based on the evaluation result of the radiation consequence that is considered by the emergency planning. In the emergency response, the zone scope of the related response action shall be confirmed according to the result of the actual monitoring and sampling analysis.

6.2 Confirmation of actual boundary When confirming the actual boundary position of emergency planning zone (specifically the plume emergency planning zone), except that it shall be abided by the safety rules in chapter 5 and the zone range requirement in 6.1, it must consider the special environment features (such as terrain, administrative district boundary, population distribution, traffic, communication and the like), social economic position, and public psychology, so that the actual boundary (it may not always round) of the finally planned emergency planning zone conforms to the actual condition, and the emergency preparation and response may be easily carried out.

6.3 Scope and boundary of multi-reactor site emergency planning zone For multi-reactor site, a uniform emergency planning zone shall be confirmed; the scope shall include the requirements of chapter 5,