

ICS 27.120.20
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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 17680.11-2008

**Criteria for emergency planning and preparedness for nuclear
power plants -- Part 11: Criteria for the conduct of offsite
radiological assessment for emergency response**

核电厂应急计划与准备准则 第11部分：应急响应时的场外放射评价准则
(English Translation)

Issued on: March 24, 2008

Implemented on: November 1, 2008

**Issued by: General Administration of Quality Supervision, Inspection and
Quarantine of the People's Republic of China**

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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 11 of GB/T 17680. It corresponds to ANSI/ANS 3.8.6.1995 "Criteria for the Conduct of Offsite Radiological Assessment for Emergency Response for Nuclear Power Plants". This Part is not equivalent to ANSI/ANS 3.8.6.1995.

This Part was proposed by China National Nuclear Corporation.

This Part shall be under the jurisdiction of National Nuclear Energy Standardization Technology Committee.

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Criteria for Emergency Planning and Preparedness for Nuclear Power Plants - Part 11. Criteria for the Conduct of Offsite Radiological Assessment for Emergency Response

1 Scope

This Part of GB/T 17680 specifies the criteria for radiation dose assessment (abbreviated as dose assessment) adopted when nuclear power plant has or may have the accident of releasing radioactive substance to environment.

This Part applies to the assessment for offsite radiation dose caused by nuclear power plant accident, including anticipated assessment and follow-up assessment.

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 corrigendum) 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/T 4960.5 Glossary of terms. Nuclear science and technology - Radiation

protection and safety of radiation sources

GB/T 17680.9 Criteria for emergency planning and preparedness for nuclear power plants - Maintenance of on-site emergency response capacity

GB 18871 Basic standards for protection against ionizing radiation and for the safety of radiation sources

3 Terms and definitions

Those established in GB/T 4960.5 AND the following terms and definitions apply to this Part of GB/T 17680.

3.1 Emergency

A state that some actions exceeding normal working procedure shall be adopted immediately to avoid the accident or alleviate accident consequence. Meanwhile, it also refers to immediately adopting actions that is beyond normal working procedure.

4.1.3 For accident with slow progress, a series of emergency PARs proposed by the dose

assessment system can be utilized, so as to provide a method for the initial assessment for nuclear accident emergency of nuclear power plant and the follow-up dose assessment throughout the whole emergency process.

4.2.1 After the accident happened, the emergency response organization of operating unit

of nuclear power plant shall rapidly conduct offsite radiation dose assessment for radiological release of this accident, so as to assess the dose possibly received by offsite personnel. The radiation exposure can be from the direct external exposure caused by radioactive plume and superficial deposit or internal exposure caused by intaking (inhalation or ingestion) radioactive substance.

4.2.2 The possibly received radiation exposure is very important in early stage assessment. The local and the emergency response unit of operating organization of nuclear power plant shall utilize the result of dose assessment to make decisions on

protective action for the public. The emergency unit of operating organization of nuclear power plant can also utilize these results to make decisions on PAR for onsite workers.

4.3 Contents involved in dose assessment

To better conduct the dose assessment, the content involved in assessment shall include the following aspects.

- a) State of power plant and corresponding symptoms;
- b) Type of accident;
- c) Radioactive release source term in accident (airborne release source term and liquid release source term);
- d) Current and anticipated meteorological condition;
- e) Hydrologic data of riverside or coastal plant;
- f) Environmental monitoring data.

5.1.1 One of important parameters that shall be input in any dose assessment is radioactive release source term. The accident radiological release can be divided into airborne radiological release and liquid state radiological release.

6.2.8.1 The output of the mode shall be formatted in order to promptly determine the state

of emergency, make protective action decisions, and implement other emergency response capabilities.

6.2.8.2 The output data shall give out the assessment time, date and characteristic

symbol, and give a list on the calculated input parameters and the selection of the control variable to serve as the basis for the calculation results.

6.2.8.3 The output file shall be saved all the calculation results useful for the emergency

grading and protective actions decision.