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Nuclear facilities — Criteria for the design and operation of ventilation systems for nuclear installations other than nuclear reactors

Installations nucléaires — Critères pour la conception et l'exploitation des systèmes de ventilation des installations nucléaires autres que les réacteurs nucléaires

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

ISO 17873 was prepared by Technical Committee ISO/TC 85, *Nuclear energy*, Subcommittee SC 2, *Radiation protection*.

Introduction

This International Standard applies to all types of nuclear installations other than primary containment envelopes of nuclear power plants or certain categories of research reactors.

The installations concerned are particle accelerators, radiation generators, fusion machines, research and examination laboratories and, more generally, all types of nuclear fuel cycle installations (e.g. enrichment plants, nuclear fuel fabrication and examination laboratories, plutonium-handling facilities, reprocessing plants, radioactive waste treatment stations, radioactive waste storage facilities, etc).

It can also be applied to the primary containment envelope of research reactors, where only low pressure can occur during accident scenarios, as well as to auxiliary rooms of nuclear power plants.

Specific features associated with the containment envelope of nuclear power plants or certain categories of research reactors will be developed in another International Standard.

Nuclear facilities — Criteria for the design and operation of ventilation systems for nuclear installations other than nuclear reactors

1 Scope

This International Standard specifies the applicable requirements concerning the design and use of ventilation systems in nuclear installations such as hot cells, nuclear fuel fabrication and examination laboratories, plutonium-handling facilities, reprocessing plants, enrichment facilities, nuclear-waste treatment stations, storage facilities, etc.

The purpose of ventilation and containment systems is to and ensure safety functions and protect workers, public and environment against the spread of radioactive contamination resulting from the operational processes of these installations.

This International Standard does not apply to the containment envelope of nuclear power plants and some research reactors where high pressure can occur during accident scenarios. It does apply to auxiliary rooms of these facilities.

The requirements for the design and use of ventilation systems that ensure safety functions in nuclear reactors will be developed in another International Standard.

2 Normative references

The following Standards contain provisions that, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2889, *General principles for sampling airborne radioactive materials*

ISO 10648-2, *Containment enclosures — Part 2: Classification according to leak tightness and associated checking methods*

ISO 11933-4, *Components for containment enclosures — Part 4: Ventilation and gas-cleaning systems such as filters, traps, safety and regulation valves, control and protection devices*

ICRP 60, 1990, Recommendations of the International Commission on Radiological Protection, ICRP Publication 60, Annals of the ICRP, 21, (1-3), Pergamon Press, Oxford (1991)

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1
aerosol
solid particles and liquid droplets of all dimensions in suspension in a gaseous fluid