

Safety Standards

of the

Nuclear Safety Standards Commission (KTA)

KTA 1301.1 (2022-11)

**Radiation Protection Considerations for Plant Personnel
in the Design and Operation of Nuclear Power Plants
Part 1: Design**

(Berücksichtigung des Strahlenschutzes der Arbeitskräfte
bei Auslegung und Betrieb von Kernkraftwerken;
Teil 1: Auslegung)

The previous versions of this safety
standard were issued in 1984-11, 2012-11 and 2017-11

If there is any doubt regarding the information contained in this translation, the German wording shall apply.

Editor:

KTA-Geschaefsstelle

c/o Bundesamt fuer die Sicherheit der nuklearen Entsorgung (BASE)

Willy-Brandt-Str. 5 • 38226 Salzgitter • Germany

Telephone +49 (0) 30 184321-2901

KTA SAFETY STANDARD

November
2022

Radiation Protection Considerations for Plant Personnel in the Design and Operation of Nuclear Power Plants Part 1: Design

KTA 1301.1

Previous versions of this safety standard: 1984-11 (BAnz. Nr. 40a of February 27, 1985)
2012-11 (BAnz. of January 23, 2013)
2017-11 (BAnz. of February 5, 2018)

Contents

Basic Principles.....	5
1 Scope	5
2 Definitions	5
3 Rooms of the Controlled Area and Sanitary Tract	5
3.1 General Requirements.....	5
3.2 Sanitary Tract	7
3.3 First-Aid Station	7
3.4 Spatial Needs Regarding Health Physics	7
3.5 Spatial Requirements Regarding Processing and Storing of Contaminated Parts	7
4 Components	8
4.1 General Requirements.....	8
4.2 Reactor Pressure Vessel	9
4.3 Control Rod Drives	9
4.4 Steam Generators	9
4.5 Pumps and Compressors	9
4.6 Valves.....	9
4.7 Pipes.....	9
4.8 Electrical Equipment and Instrumentation and Control Equipment.....	10
5 Ventilation Systems	10
6 Communication Equipment.....	10
7 Ergonomics.....	10
8 Documents Regarding Radiation Protection.....	10
9 Special Aspects Regarding Design Basis Accidents	10
9.1 Basics	10
9.2 Loss-of-Coolant Accident in the Containment Vessel	10
9.3 Differential Pressure Line Rupture Accident Outside of the Containment Vessel	12
Appendix A Regulations Referred to in this Safety Standard.....	13

PLEASE NOTE: Only the original German version of this safety standard represents the joint resolution of the 35-member Nuclear Safety Standards Commission (Kerntechnischer Ausschuss, KTA). The German version was made public in the Federal Gazette (Bundesanzeiger) on July 25, 2023. Copies of the German versions of the KTA safety standards may be mail-ordered through the Wolters Kluwer Deutschland GmbH (info@wolterskluwer.de). Downloads of the English translations are available at the KTA website (<http://www.kta-gs.de>).

All questions regarding this English translation should please be directed to the KTA office:

KTA-Geschaftsstelle c/o BASE, Willy-Brandt-Strasse 5, D-38226 Salzgitter, Germany or kta-gs@base.bund.de



Documents

Document Sharing Hub

Comments by the Editor:

Taking into account the meaning and usage of auxiliary verbs in the German language, in this translation the following agreements are effective:

shall	indicates a mandatory requirement,
shall basically	is used in the case of mandatory requirements to which specific exceptions (and only those!) are permitted. It is a requirement of the KTA that these exceptions - other than those in the case of shall normally - are specified in the text of the safety standard,
shall normally	indicates a requirement to which exceptions are allowed. However, exceptions used shall be substantiated during the licensing procedure,
should	indicates a recommendation or an example of good practice,
may	indicates an acceptable or permissible method within the scope of this safety standard.