

Safety Standards

of the
Nuclear Safety Standards Commission (KTA)

KTA 3413 (2016-11)

Determination of Loads for the Design of a Full Pressure Containment Vessel against Plant-internal Incidents

(Ermittlung der Belastungen für die Auslegung des Volldrucksicherheitsbehälters gegen Störfälle innerhalb der Anlage)

The previous version of this safety standard was issued in 1989-06

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

Editor:

KTA-Geschäftsstelle

c/o Bundesamt fuer kerntechnische Entsorgungssicherheit (BfE)

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

Telephone +49 (0) 30 18333-1621 • Telefax +49 (0) 30 18333-1625

KTA SAFETY STANDARD

November
2016

Determination of Loads for the Design of a Full Pressure
Containment Vessel against Plant internal Incidents

KTA 3413

Previous version of this safety standard: 1989-06 (BAnz. No. 229 of December 7, 1989)

CONTENTS

	Page
Basic Principles.....	5
1 Scope	6
2 Definitions.....	6
3 Types of Loads	6
4 Loads to be Determined	6
4.1 Overall Loads.....	6
4.2 Distributed Loads.....	6
4.3 Local Loads	6
5 methods of Calculation	7
5.1 Mathematical Models.....	7
5.2 Boundary Conditions and Assumptions	8
5.3 Verifications and Demonstrations	9
6 Load Statements.....	9
6.1 Overall Loads.....	9
6.2 Distributed Loads.....	10
6.3 Local Loads	10
6.4 Load Combinations.....	10
Appendix A: Heat Transfer.....	11
Appendix B: Subdivision of Structures	11
Appendix C: Regulations Referred to in this Safety Standard.....	12
Appendix D: References	12

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 March 10, 2017. 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-Geschäftsstelle c/o BfE, Willy-Brandt-Strasse 5, D-38226 Salzgitter, Germany or kta-gs@bfe.bund.de

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.