

Safety Standards

of the

Nuclear Safety Standards Commission (KTA)

KTA 1404 (2013-11)

**Documentation during Construction and Operation of
Nuclear Power plants**

(Dokumentation beim Bau und Betrieb von
Kernkraftwerken)

The previous version of this safety
standard was issued in 2001-06

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

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KTA SAFETY STANDARD

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Documentation during Construction and Operation of Nuclear Power plants

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Contents

Basic Principles	1
1 Scope	1
2 Definitions	1
3 General Requirements Regarding Documentation	2
3.1 General Principles	2
3.2 Creation, Revision and Distribution	2
3.3 Archiving	2
3.4 Storage of Spare Material and Material Specimens	3
4 Specific Requirements	3
4.1 License Documentation	3
4.2 Quality Documentation	3
4.3 Operation Documentation	3
4.4 Process-technological Documentation	4
4.5 Organization Documentation	4
4.6 Duplicate Document File	4
5 Requirements for the Documentation of Specific Technical Documents	5
5.1 General Requirements	5
5.2 Structural Plant Components	5
5.3 Mechanical and Apparatus Engineering	5
5.4 Electrical and the Instrumentation and Control Equipment	5
Annex A Additional Requirements for the Microfilming of Documents to be Archived	10
A 1 General Requirements	10
A 2 Procedure	10
A 3 Reading and Reproduction	10
Annex B Additional Requirements for Electronic Archiving	10
B 1 General Requirements	10
B 2 Electronic Archiving Procedure	10
B 3 Classification Principle	10
B 4 Data Security	10
B 5 Requirements Regarding Software	10
B 6 Reproduction of Electronically Archived Documents	10
Annex C Contents and Documentation Depth of the Duplicate Documentation	11
C 1 Operating Manual	11
C 2 Emergency Handbook	11
C 3 System Circuit Plans, System Descriptions, General Arrangement Plans	11
C 4 Site Layout Plans of Buildings and Facilities on the Nuclear Power Plant Site	12
C 5 Building Plans (Including the Installation of the Components)	12
C 6 Fire Protection Plans, Rescue Route Plans	13
C 7 Function Diagrams	13
C 8 Conceptual Diagram of Power Plant Unit Protection	13
C 9 Electrical Circuit Diagrams	13
C 10 Reports on Reactor Protection, Accident Monitoring and Radiological Protection Instrumentation	13
Appendix E Regulations Referred to in this Safety Standard	14

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 Bundesanzeiger BANz of January 17th, 2014. Copies may be ordered through the Wolters Kluwer Deutschland GmbH, Postfach 2352, 56513 Neuwied, Germany (Telefax +49 (0) 2631 801-2223; E-mail: info@wolterskluwer.de).

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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.

Basic Principles

(1) The safety standards of the Nuclear Safety Standards Commission (KTA) have the task of specifying those safety-related requirements which shall be met with regard to precautions to be taken in accordance with the state of science and technology against damage arising from the construction and operation of the plant (Sec. 7, para. 2, subpara. 3 Atomic Energy Act - AtG) in order to attain the protective goals specified in AtG and the Radiological Protection Ordinance (StrlSchV) and further detailed in the "Safety Criteria", the "Design-Basis Accident Guidelines" and in the Safety Requirements for Nuclear Power Plants (SiAnf).

(2) Criterion 2.1 of the Safety Criteria requires that the documents needed for the assessment of quality must be available. Further details concerning this requirement are contained in the "Documentation Principles" by the Federal Committee for Nuclear Energy.

(3) The documentation in nuclear power plants comprises all documents which serve as certificates in the licensing and supervisory procedure as well as all organizational regulations that are the basis for the safe operation.

(4) The purpose and function of the documentation are among others:

- a) Proving the existence of, or compliance with statutory prerequisites (e.g., licensing prerequisites in accordance with Sec. 7, para. 2 AtG);
- b) Describing the required condition of the power plant and the essential processes during its construction;
- c) Enabling an assessment of the actual condition of the power plant;
- d) Presenting the circumstances and provisions required for a safe operation of the power plant;
- e) Enabling the feedback of experience; and
- f) Providing a knowledge base for ageing management.

(5) The objective of the present safety standard is to specify type and depth of the documentation. It contains the general requirements regarding documentation as well the retention periods and place of storage of the documents. In this context it expands the requirements specified under safety standard KTA 1401, Sec. 12 'Documentation', under safety standard KTA 1402, Sec. 5.17 'Documentation' and Sec. 5.13 'Feedback of Experience' and under Decommissioning Guideline, Sec. 3.3, item g) and Sec. 5.2. The details concerning type, form and depth of the documentation is specified the safety standards KTA 1201, KTA 1202, KTA 1203 and KTA 1403, in the component-related KTA safety standards as well as in the building codes of the federal states, the "Federal Immission Protection Act (BImSchG)", the "Act on Environmental Impact Assessment (UVPG)", the "Act on the Regulation of the Water Household (WHG)", the various Clean Water Acts of the federal states and, as required, additional acts and ordinances.

1 Scope

This safety standard shall be applied to the following:

- The documentation generated for the licensing and supervisory procedure within the framework of planing, erection, commissioning as well as operation and modifications of the power plant;
- All organizational regulations necessary for the safe operation;
- All documents that are used as knowledge base; and
- The storage of spare materials and material test specimens.

Note:

When, in accordance with the Decommissioning Guideline, the present safety standard is applied to decommissioning it is impor-

tant to note that the Sections 3, 4 and 5 as well as Table 9-1 KTA 1404 referenced by the Guideline relate to the previous version (2001-06). These respective sections have been replaced in the present safety standard by Sections 3 and 4 and by Tables 4-1 and 4-2.

2 Definitions

(1) Archiving

Archiving is understood to mean the proper storage of documents for a specified retention period at a specified place of storage.

Note:

In the present safety standard, the term archiving is used for that type of storage for which specific requirements are applicable with regard to spatial and administrative prerequisites.

(2) Operation documentation

Operation documentation comprises the documents compiled in the course of operation; these are:

- a) Safety-related operating records;
- b) Certificates with respect to maintaining the quality of the power plant and its components as well as the technical qualification of the personnel;
- c) Documents with respect to the radiological protection of the personnel and environment; as well as
- d) Additional certificates with respect to the compliance with regulations and provisions.

(3) Data carrier

A data carrier is a medium on which data are stored and from which this data can be recalled.

(4) Document

A document is the material unit of a carrier for documentary data. This term is used, both, for analog documents (usually in the form of paper) and for digital documents.

(5) Documentation

Documentation is the systematic compilation of documents.

(6) Final document file

Final document file is that part of the documentation which stays archived over the entire lifetime of the power plant or until the documented part is removed from the power plant.

(7) License documentation

License documentation is the compilation of all license provisions, conditional provisions, legal approvals, directives and decrees of the proper supervisory and licensing authorities as well as of all documents quoted in the license provisions.

Note:

This includes all documents generated under the building code and under the various acts regarding water utilization, immission control, environmental acceptability, nature conservation as well under other areas of law.

(8) Organization documentation

Organization documentation is the compilation of all documents containing the structural and procedural regulations that build the basis for the technical and administrative areas of operation of the power plant.

(9) Quality documentation

Quality documentation is the compilation of all quality certificates of the power plant and its parts and includes the design review documents.

(10) Reference location

A reference location is that particular place where the binding reference copy of the corresponding document is located (e.g., the control room, in case of the operating manual with its manually entered, red annotations).

(11) Stamping

Stamping is the certification that a document from the quality documentation has been reviewed with a positive result, particularly, in those cases where the actual values do not need to be recorded, i.e.,

- a) reviews that require only a simple yes or no statement,
- b) reviews where their execution and the required values are specified in the specification or test instruction.

(12) Process-technological documentation

The process-technological documentation comprises documents that describe the safety-related tasks and functions of components and systems and that support the operational management of the power plant.

(13) Duplicate document file

The duplicate document file is a compilation of selected valid documents in the form of copies or printouts (backup copies).

(14) Interim document file

The interim document file comprises those documents of the quality documentation which are important for verifying the manufacturing process but are not needed for describing the final condition of the power plant or its parts and, therefore, are not required to be transferred to the final document file.

3 General Requirements Regarding Documentation**3.1 General Principles**

(1) With respect to the information contained, the documentation shall be complete, explicit and unambiguous. The individual documents shall be mutually consistent.

(2) The documentation shall describe both the required state and the actual state of the power plant and its parts and of the organization. The present safety standard differentiates the parts of the documentation according to their function as follows;

- a) License documentation;
- b) Quality documentation;
- c) Operation documentation;
- d) Process-technological documentation; and
- e) Organization documentation.

A single document may fulfill more than just one of the functions above in which case it must meet all of the respective requirements specified under Section 4.

(3) The license applicant or licensee shall be responsible for creating, maintaining, updating and archiving the documentation. He may delegate tasks arising from these obligations to contractors.

(4) The structure, the documentation depth and the handling of the documentation from the time of its creation to archiving and final destruction of the documents shall be specified and described.

(5) When transferring documents to other or similar data carriers, it shall be ensured that the content of the documents is not falsified.

(6) Analog data carriers may be archived on microfilms or in digitalized form, provided, the additional requirements specified, respectively, under **Appendix A** or **Appendix B** are met. In this case all original documents, with the exception of the license documentation, may be destroyed unless it is required under legislations, standards, guidelines, license permits or legal directives that the document must be archived in its original form.

(7) The retention periods of the documents and their allocation to the final and interim document files are specified in **Tables 4-1, 4-2 and 5-1 through 5-4** according to the respective verification requirements of the licensing and supervisory procedure. After these retention periods have expired, the respective documents do not need to be archived anymore with regard to fulfilling any verification requirements.

(8) With regard to knowledge preservation, experience feedback and trend analyses (cf. Section 4.3.3, paras.(3) and (4) as well as Section 4.3.4) it is sensible to keep selected documents archived beyond their specified retention periods. The license applicant or licensee shall specify the corresponding procedure.

(9) The requirements specified under Section 3.3 do not apply to documents that, with regard to knowledge preservation, experience feedback and trend analyses, are kept beyond their retention period. The paper versions of these documents may be destroyed after they have been transferred to electronic media. The electronic archiving of these documents is not subject to the additional requirements specified under **Appendix B**.

3.2 Creation, Revision and Distribution

(1) The procedure for creating, revising, reviewing and implementing the documents including the way to handle manual (red) annotations shall be specified.

(2) An updating service shall be established to ensure that the documentation and the duplicate document file are complete and up-to-date. The updating service shall ensure

- a) that the documents are supplemented and updated to the required extent,
- b) that the users of excerpts from the documentation are informed promptly and without delay about the exchange of and supplements to the respective documents.

All changes introduced by manual annotations shall be transmitted to the updating service.

(3) The verification documents shall, basically, not be subject to revision. In case verification documents must be factually corrected or supplemented, these activities shall be performed by the same organizational unit that had signed or initialed the original document. The changes shall be marked. If this procedure is not possible, a supplementing document shall be generated.

(4) The distribution of the documents shall be specified. It shall be ensured that the addressed group of people can, at all times, gain access to the documents at the location specified for the respective documents.

Note:

The documents may also be made available via electronic procedures.

(5) The validity of the documents shall be clearly identifiable. Documents that are not valid anymore shall be marked accordingly.

3.3 Archiving**3.3.1 General requirements**

(1) The following requirements shall apply both to analog archiving as well as to electronic archiving.

(2) In addition, the requirements specified for microfilming under **Appendix A** or for electronic archiving under **Appendix B** shall be observed.

(3) The archiving procedure shall be specified and described