Schweizerische Eidgenossenschaft
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Ageing Guide for Dry Interim Storage

Issued December 2018

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1 Introduction

The Swiss Federal Nuclear Safety Inspectorate (ENSI) is the supervisory authority for the nuclear safety and security of nuclear installations and also one of the supervisory authorities for the transport of radioactive materials in Switzerland. It is issuing this guide, which specifies legal requirements and should serve as an aid to the organisations being monitored, in its capacity as a supervisory authority.

2 Purpose and scope

This guide applies to transport and storage casks, also named as dual purpose casks (DPC), for spent fuel elements and high active waste that are used for dry interim storage.

The purpose of this guide is to describe the necessary proofs that are to be provided within the framework of the ageing management of DPC according to the regulations referred to in Section 3. The proofs relate to DPC components, contents and organisational aspects and consider changes to the rules and standards, the further development of the state of the art and technical ageing effects.

The guide gives recommendations for implementing the requirements of regulations cited in Section 3. These recommendations aim to serve as an aid for the owners of DPC and for operators of interim storage facilities and are not binding. Nevertheless, the actions stipulated in this guide are based on internationally accepted standards and therefore are also recommended for this reason.

Where classification and ageing management are concerned, this guide is based on existing regulations, in particular the packaging guide /A/ and the guideline ENSI-B01 /B01/. In this respect, the classification of the power plant components in /B01/ is replaced by the classification according to /A/ and the compilation of possible ageing mechanisms to be investigated in /B01/ is replaced by a presentation of the various ageing processes to be considered, while the creation and explanation of ageing surveillance programmes (ASP) is transferred to DPC. The approach to the creation of the ageing management documents has been detailed and explained. In addition, other documents are cited in the literature that also explain the circumstances under consideration.

This guide clarifies the responsibilities for creating and checking the ageing proofs as well for implementing possible actions that arise (Section 5). Moreover, administrative requirements in respect of the documents to be created are provided and the documentation of the ageing proofs explained with reference to the overall documentation covering DPC and content (also Section 5).

Sections 6 to 12 relate directly to the ageing proofs to be provided by the verifying body:

- Section 6 shows the starting status of approvals, interim storage licenses and organisational aspects for the relevant package design
- Section 7 addresses, for the period under consideration, changes to the rules and standards, such as dangerous goods regulations and the further development of the state of the art as well as their impact on transportability and interim storage ability
- Section 8 gives specifications for the selection of relevant components to which ageing proofs relate
- Section 9 deals with the analysis of technical ageing effects and actions to be derived from them, both in respect of radioactive contents and also relating to materials and components
- Section 10 designates organisational changes and the actions to be derived from them

- Sections 11 and 12 comprise the summarising assessment undertaken by the verifying body of the transportability and interim storage ability

Ageing proofs in the sense of this guide, do not change any safety cases for approvals or interim storage licences, rather they demonstrate that, taking into consideration the effects ageing, existing proofs in the relevant safety reports are still being fulfilled. Changes of safety cases for approvals or interim storage licenses must be dealt with within the framework of separate applications.

3 Legal basis

3.1 Dangerous goods legislation

This guide addresses the changes in respect of the ageing of DPC in the forthcoming 2018 edition of the IAEA Transport Regulations (shipment after storage), which are expected to be incorporated in national law and thus become binding in Switzerland from 1 January 2021. To this effect, the guide is based on the following legislation:

General

- IAEA Specific Safety Requirements SSR-6, *Regulations for the Safe Transport of Radioactive Material*

Road

- European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)
- Ordinance on the Transport of Dangerous Goods by Road (SDR, SR 741.621)

Rail

- Regulations concerning the International Carriage of Dangerous Goods by Rail (RID)
- Ordinance on the Transport of Dangerous Goods by Rail and Cablecar (RSD, SR 742.412)

Air

- International Civil Aviation Organization (ICAO), Technical Instructions for the Safe Transport of Dangerous Goods by Air
- Ordinance on Air Transport (LTrV, SR 748.411)

Inland waterways

- European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (ADN)
- DETEC ordinance on the entry into force of the European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways (SR 747.224.141)

Sea

- International Maritime Dangerous Goods Code Class 7 (IMDG)

3.2 Nuclear energy law

Where interim storage is concerned, the guide specifies the requirements of guideline ENSI-A03 in respect of the provision of evidence of transportability and interim storage ability of DPC for the dry interim storage of spent fuel elements and high- active waste within the context of periodic safety inspections of nuclear power plants.

Furthermore, in the context of the approval of DPC for interim storage on the basis of Art. 21 para. 1 letter f NEA (Nuclear Energy Act) and thus in connection with Art. 29 para. 1 letter g NEO (Nuclear Energy Ordinance) and guideline HSK-G05, periodic proofs of ageing for DPC are to be provided. Moreover, the recommendations of this guide are also applicable to these proofs. The proofs obtained in this way, can be referenced in periodic safety reviews of nuclear power plants in accordance with guideline ENSI-A03.

4 Terminology

Ageing

Cumulative time-dependent change in the properties of a component due to physical, chemical or biological processes. Several ageing mechanisms can act at the same time.

Ageing mechanism

Time-dependent process which leads to a change in the physical and/or chemical properties of a material.

Ageing management

Measures for the prompt detection, assessment and control of the ageing state of a component.

Ageing Surveillance Programme (ASP)

Systematic approach to the inspection of a component for changes to its properties caused by ageing, for assessment of the same and for checking the existing ageing surveillance measures for completeness and effectiveness with the aim of identifying gaps or weaknesses and specifying actions to take for their closure (supplementary actions).

Design limit

A physical or chemical quantity or a property of a component of a DPC that may not be exceeded or undershot, so that the dangerous goods or nuclear energy legal requirements continue to be maintained, e.g. minimum wall thickness, minimum yield strength, maximum decay heat performance, maximum release of radioactivity.

Design quantity, characteristic

A physical or chemical property of a component of a DPC, that is relevant for the dangerous goods or nuclear energy legal requirements, e.g. wall thickness, diameter, yield strength, thermal conductivity, leakage rate, humidity.

Package design

Package design, for the purpose of this guide, is the design defined and comply with the dangerous goods and nuclear power legislation. It describes a package and its radioactive content in detail and

unambiguously. Useful in this respect are specifications, technical drawings, reports that provide proof of the fulfilment of the requirements of the regulations and other essential documents.

Gap analysis

Comparison of documents that have been further developed with their previous versions in order to recognise differences between these documents and then to evaluate these differences according to specified criteria.

Verifying body

The owner of the DPC is responsible for providing proofs in the sense of this guide. It must involve the other interested parties, such as the owner of the stored radioactive contents, interim storage operator and owner of the dangerous goods package design approval, in the clarifications in respect of ageing management.

Radioactive content

Radioactive content refers to the radioactive material together with any contaminated or activated solids, liquids or gas inside the packaging (see also the definition in the dangerous goods regulations).

Serial specimen

Manufactured specimen of a package design.

Dual Purpose Cask (DPC)

A DPC comprises both the radioactive content and the packaging. DPC in the sense of this guide also include interim storage components (e.g. pressure switch, aircraft crash cover).

Packaging

Packaging in the sense of this guide is the container specified in accordance with dangerous goods and nuclear energy legislation and all other components and materials that are necessary so that the container can fulfil its containing and other safety functions (see also the definition in the dangerous goods regulations).

Package

A package in the sense of this guide is the ready-to-ship end product of the packing process, comprising the packaging and its content (see also the definition in the dangerous goods regulations).

5 Approach, documents and responsibilities

In the ageing management documents, the workflow should follow a systematic approach that includes all components of a DPC. For this purpose and in view of the fact that the verifying body can freely choose the verification path as well as the formatting of the documents, the verifying body should first detail the links between the different documents in a summary.

In these documents, the first step should be to describe the workflow how components or parts of the serial specimen are determined that could, were they to undergo ageing, impair the achievement of the dangerous goods and nuclear energy protection targets.

A second step should explain which influencing factors, such as materials used, ambient and operating conditions, etc., interact and which damage mechanisms and changes to the properties that result are taken into consideration by the verifying body.

The third step should describe the actions derived and their intended implementation in appropriately structured ASP for detecting and then for controlling the effects of ageing. This applies to all components and parts classified as being affected. This should ensure that the DPC fulfils all the protection targets for interim storage and transport for at least a further 10 years. In this respect, the unchanged design conditions in the basic documents for the dangerous goods package design approval and the interim storage license are to apply.

Organisations, management systems and processes are also subject to developments and changes which must also be monitored in respect of ageing. For this purpose, a separate document should describe the development of the organisation of the interested parties as well as how they interact in respect of integrating ageing management.

At intervals of 10 years, both technical and organisational aspects should be fully assessed by the verifying body in respect of fulfilling all relevant requirements (see also Sections 11 and 12).

All verification documents relevant for ageing management should be combined and added to the safety report of the DPC as an appendix. Moreover, the documents that are necessary for understanding the verification documents should be added to the DPC documentation (see also Section 10.2).

All documents mentioned must be presented by the verifying body to ENSI in accordance with the requirements for periodic safety reviews /A03/ or requirements in the DPC licenses for interim storage before expiry of the deadlines specified by these requirements. These deadlines normally cover a period of 10 years.

The DPC owner is responsible for submitting these proofs and is responsible both for requirements in the DPC licenses for interim storage and for the approvals within the framework of the periodic safety reviews of nuclear power plants. The DPC owner must involve all the other interested parties such as interim storage operator and owner of the dangerous goods package design approval in an appropriate manner, in order to provide the necessary proofs. Transfers of ownership are subject to regulatory approval in accordance with Art. 31 of the NEA (Nuclear Energy Act).

According to Art. 31 of the NEA, radioactive waste, including spent fuel elements and vitrified waste must be deposited in a deep geological repository. To assess the implications of ageing processes for the disposal of such waste and to consider their consequences in the planning of the deep geological repository, the ageing management documents must be made available to the implementer or operator of a deep geological repository.

6 Initial status

6.1 Basic documents for proof of transportability

The characteristic design quantities are to be used as initial data for the justifications related to ageing management. These are contained in the documents cited in the package design approval, such as the safety report with additions, supplements, drawings, part lists, for example. The documentation of the qualification tests, the inspections and acceptance tests as well as the operating manual of the package design serial specimen should be available as additional sources of information. The information in these documents can be further clarified by the other documents drawn from the framework of ageing management such as manufacturing specifications, instructions, documentation, experience reports and inspection reports, so that all essential statements are justified.

6.2 Basic documents for proof of interim storage ability

The characteristic design quantities are to be used as initial data for the justifications related to ageing management. These are contained in the documents cited in the DPC license for interim storage, such as the safety report with additions, supplements, drawings, part lists, for example. Further information sources comprise the documentation of the qualification tests, the inspections and acceptance tests, any limitations on conformance approvals after manufacturing and for storage facilities as well as the operating manual of the package design serial specimen. The information in these documents can be further clarified by the other documents drawn from the framework of ageing management such as manufacturing specifications, instructions, documentation, experience reports and inspection reports, so that all essential statements are justified.

Spare parts stored but not yet fitted are also to be included in ageing management.

7 External developments

7.1 Changes to the rules and standards

Where ageing management is concerned, not only should the ageing of technical components be assessed but also non-technical circumstances should be investigated and assessed.

Amongst other things, the further development of the rules and standards and the resulting effects should be assessed.

The tracking of the regulations as well as the standards and dimensioning instructions on which the regulations are based, should, where appropriate, take place using a gap analysis, so that an overview of developments since the last assessment can be obtained and this can be evaluated in respect of its influence on the package design. The relevant dangerous goods package design approval and the nuclear energy DPC license for interim storage should also form part of this gap analysis.

If, due to essential developments in the regulations or due to the changing of individual limits, it is identified that the design limits given in the safety reports are no longer being adhered to, the transportability must be demonstrated according to the latest edition of the regulations, if necessary taking into account compensating actions. Here care should be taken that the safety report is always updated to ensure that for the very long intermediate storage durations envisaged, each individual amendment of the safety report remains transparent and traceable, see also /IA2/. It should be borne

in mind that in individual cases, changes to the regulations could lead to a design change or replacements becoming necessary on already stored DPC.

Otherwise, the ageing proofs must indicate that transportability and storage ability have been retained.

7.2 Development of the state of the art of science and technology

Alongside the safety-engineering rules and standards, the state of the art of science and technology also changes over time due to the introduction of new or improved technologies, design principles and research findings. These developments should likewise be derived and assessed in a gap analysis consistent with the 10-year evaluation period. In particular, new findings important for ageing management are to be identified and likewise implemented in the existing ASP.

Where the development of the state of the art of science and technology is concerned, it should also be borne in mind that specified materials and spare parts may not be available.

8 Identification of relevant components

8.1 Packaging components

As specified in Section 5, in a first step, the packaging components to be investigated in respect of ageing need first be identified. Of primary interest here are parts and components whose function ensures that dangerous goods and nuclear energy legal protection targets are being met.

Guide /A/ contains a component classification for such a selection procedure, which should be used here as appropriate. For this purpose, the components of a packaging are classified according to their function in the achievement of dangerous goods protection targets:

- Shielding
- Leak tightness and integrity
- Heat dissipation and
- Criticality safety

In a similar way, for this classification any specific interim storage requirements should be considered in accordance with guideline HSKG05 /G05/.

All packaging components for the package design under consideration should be classified into three levels in respect of their importance for achieving the above mentioned protection targets in accordance with /A/.

Level 1 includes all parts or components that directly ensure the achievement of the protection targets.

Level 2 includes all parts or components that indirectly ensure the achievement of the protection targets.

Level 3 includes all parts or components that are not included in level 1 or 2.

Part lists, safety reports, manufacturing specifications, drawings, test reports (internal or provided by other power plants), industry experience and other sources of information are used to derive the importance of individual components.

As a minimum, the specific ageing assessment should be carried out for all level 1 or level 2 components. Level 3 components should also be considered to identify whether ageing processes affecting them could influence the functioning of level 1 and 2 components.

Equipment for transport, interim storage or reloading of a DPC, for example transport traverses, additional shielding and/or leak testing equipment are not generally part of the ageing inspection, as they themselves are not part of the DPC and are not necessary for achieving protection targets. Moreover, they are subject to quality assurance measures and can be replaced at any time.

8.2 Ageing of radioactive content

Ageing management should also take account of the content of the DPC. The safety report requires that the fuel of irradiated fuel elements remains within certain defined ranges so that protection targets can be adhered to. Here, where fuel elements are concerned, in addition to the fuel rod cladding, which represents the most important barrier for the retention of radioactive fission products, the structural parts also contribute to varying degrees.

Therefore, fuel elements with their fuel rods and structural parts, graded according to their importance in meeting the requirements, are also to be included in ageing management.

Lastly, an appropriately adapted ageing management should also be devised for the HAW vitrified waste canisters.

9 Analysis of the technical ageing effects and derivation of possible actions

9.1 Test objects

The second of the steps referred to in Section 5 aims at describing the influencing factors, to which the parts and components identified in Section 8 as being subject to ageing during the dry interim storage are exposed. The ageing effects resulting from these influencing factors are to be derived and explained.

In addition, the basic documents of the package design approval and the DPC license for interim storage, and the documentation of the DPC under consideration must be analysed carefully and in detail.

Also, an investigation can be performed to identify whether, and which, DPC or their components can be jointly considered. However, this option can only be selected if all basic documents from package design approvals and interim storage DPC licenses including conformance approvals after manufacturing and for storage facilities are the same, i.e. they do not contain any additional restrictions for the DPC.

9.2 Identification of materials and environmental conditions

The material specified in the documentation should be identified for each component to permit a detailed ageing analysis. Also to be considered are delivery conditions, material combinations, auxiliary materials and different materials in the subcomponents. If the material is coated, this should also be taken into account. If the manufacturing documentation does not include or has only insufficient

information about the safety proofs, then the actually used materials should be identified, e.g. based on their analysis and their delivery condition.

Moreover, information about the ambient conditions prevailing in the storage location that is relevant for the assessment of the materials should be identified, e.g.:

- Temperature, if necessary time-dependent temperature profile (e.g. decay behaviour)
- Relative humidity
- Condensation including condensed pollutants, de-icing salts
- Gaseous atmosphere components including traces of harmful substances
- gamma and neutron radiation

9.3 Summary and evaluation of the relevant ageing mechanisms

To identify ageing mechanisms that are probably occurring or have already occurred, all relevant documents which could provide information in this respect should be referred to, e.g.:

- Manufacturing and operating documentation of the component or part
- Ageing-relevant inspection findings and repairs
- Results of periodic inspection (own or those of other operators)
- Deviation reports and corrective actions
- Information from damage investigations or from basic research
- Available industry-wide experience, sector experience, feedback experience reports from operators and manufacturers
- Research results

Based on the assessment of these documents, each component and each part should be investigated for possible ageing mechanisms such as corrosion and erosion, reduction in the mechanical strength or embrittlement, high cycle fatigue, loss of bolt prestress, etc. If these assessments identify ageing mechanisms that are possibly occurring, these should be described in detail. Similarly, it should be specified, which actions have been devised either by the verifying body or in other companies and how effectively they have already been used to control the effect of the ageing mechanism under consideration.

Likewise, spare parts and materials that are provided for their production should also be included in ageing management.

These ageing mechanisms generally described in Sections 9.1 to 9.3, which could affect the materials and components used in the DPC in question, should then, as presented in Section 5 (third step), be translated into detailed ASP that are specifically tailored to the properties of the serial specimen under consideration.

9.4 Ageing surveillance programme (ASP)

The aim of an ASP is to measure how a component or part has been affected and the extent to which it has aged, and from this to derive suitable specifications to control the effects of the ageing as far as possible. Under no circumstance should this lead to a non-compliance with the basic requirements of

the DPC due to ageing during the period under consideration. Lastly, actions should be specified that need to be carried out if a component or part does not or will not comply with the basic requirements.

In /IA1/ the IAEA has specified information for the creation and structuring of ageing management programmes that are explained in more detail below. Further information can be found in the /NRC/.

Scope

The components or parts that are to be treated in the respective programme, are to be listed here. The materials used, the influencing ambient conditions and the resulting ageing mechanism(s) are to be specified; in particular, if several different ageing mechanisms are to be considered for components, e.g. corrosion and degradation of mechanical properties. If several different ageing mechanisms are to be considered for a component or part, then each ageing mechanism should be dealt with in a separate ASP.

Test procedure

Here the type of tests should be listed that are to be used to detect ageing, e.g. material investigations, leak tests, non-destructive tests, activity measurements.

It should be clarified which parameters are to be identified, and how these parameters are linked to the ageing effects, and how precisely the test method can detect limits that must be adhered to, e.g. fracture toughness, leakage rates, levels of radioactivity.

Identification of the ageing effects

The test programmes intended for use should be detailed up to and including typical specifications of testing and sampling locations or test intervals and it should be clear how the parameters, e.g. springback, temperature dependence, embrittlement, loss of wall thickness are to be identified in these programmes.

Trend analysis

The results obtained are compared with limits. The trend over time should be analysed. The test intervals should be selected in a forward-looking manner to ensure, that the selected limit being respected during the next testing cycle of 10 years.

Suitability of the limit

A proof should be prepared to demonstrate that the selected limit ensures that protection targets are respected. The limit should be derived from the safety cases, e.g. minimum deformation or fracture toughness, minimum springback, minimum wall thickness.

Design and implementation of corrective actions

In the event that a design limit, based on the safety case, can no longer be complied with in the period under consideration, the actions that then to be taken should be described. These can range from temporary transitional arrangements relating to investigations to identify the root cause, through to the design of corrective actions and proofs to show that the case will not be repeated.

It must be ensured that actions taken will not impair other safety functions.

Effectiveness of the actions taken

The ASP should also include precautions to ensure that corrective actions have been fully implemented and executed. This also means that should the DPC continue to be included in operations after

corrective actions, investigations to demonstrate compliance with the limits are to be devised to show that ageing effects are once again under control.

Monitoring

All work, that is to be performed as part of an ASP, should be subject to monitoring in accordance with /G05/ and /A/. The checks for monitoring should start with the design and approval of the programmes and provide monitoring of the actions up to and including verification of the final documentation, see also /A/.

Proof by use

The results of the ASP are to evaluated against results from any earlier in-house experience, experience from other sectors or other information relating to similar circumstances. This should acknowledge that the actions have been conceived in such a way that the effects of the ageing are still under control and that the relevant protection target can still be complied with within the reporting period.

If several ageing management programmes are performed for a component or a part, the processed results should be combined to obtain an overall statement for this component or this part.

10 Organisation

Requirements for the organisation of nuclear installations in the operating and post shutdown phase are dealt with in general in the guideline ENSI-G07 /G07/. Specific aspects for the ageing management of transport and storage containers during interim storage are listed below.

10.1 Initial status

In the course of ageing management, the owner' and the interim storage operator' organisation is also of interest, as they must maintain available sufficient/adequate:

- Technical facilities
- Financial resources
- Numbers of personnel
- Personnel qualifications
- Organisational and process structures

over the storage period. Therefore, throughout the storage period, the owner and the interim storage operator should be able to demonstrate an organisational structure that corresponds to the state of the art of science and technology. Moreover, the interfaces and responsibilities between the companies named should be clearly defined and documented. The fulfilment of all named requirements should be documented and presented to ENSI as part of the ageing proofs.

10.2 Integration of ageing management

In appropriate documents, the verifying body should present how the ageing management tasks have been integrated into the organisation of both the owner and the interim storage operator.

To do so, the verifying body should detail how the development and organisation, the introduction and the performance of ageing management are defined.

Important conditions for integration of ageing management in the organisation are:

- Unambiguous ownership relations
- A business policy that supports ageing management
- Sufficient resources (financial, personnel, training, premises, tools)
- Clear definition of the responsibilities for ageing management
- Qualified personnel
- Personnel training
- Procurement (spare parts, support by designer or manufacturer)
- Quality assurance

Moreover, the document recording and storage system should be expanded to meet the needs of ageing management. This means, for example, that the documentation of the DPC is both available and legible. Alongside the basic documents referred to in Section 6.1 and 6.2, the documentation should include the operating documentation from loading and transport as well as the interim storage period of the DPC thus far including all periodic inspections, and the work up until now on the development of ageing management up to and including the inspection results from the relevant ASP.

The extent of the stored documentation should make it possible to demonstrate that all decisions since the planning of the DPC package design have been transparent and traceable. In this respect, access to relevant standards, technical rules and regulations valid during DPC use is of considerable importance, so that it is possible at a later time, for example, to understand the decisions made at a given point in time.

Documentation should be securely stored. Access should be ensured at all times. Likewise, the legibility of storage media as a consequence of ageing processes should be considered and checked at regular intervals, e.g. where electronic media are concerned.

The implementation of the points referred to should be demonstrated to ENSI when the ageing management proofs are first presented.

10.3 Ageing management of the organisation

As part of periodic ageing management, the verifying body should present and evaluate changes made in the organisation of the DPC owner and interim storage operator, giving reasons. Possible changes to the contracts between their organisations, or during the integration of ageing management into the respective organisation should be part of this presentation and assessment. Here the owner of the approval must also be involved in the consideration. Transfers of ownership are subject to regulatory approval in accordance with Art. 31 of the NEA (Nuclear Energy Act).

A statement in respect of the extent to which the organisations of the participants as well as their interconnection continue to fulfil their function within the framework of ageing management and still correspond to the state of the art of science and technology should form part of the ageing management of the organisation.

The results of these organisation assessments should be submitted to ENSI within the framework of the regular submission of the ageing proofs.

11 Assessment of the transportability

The results of the ageing management of each DPC are to be summarised and evaluated by the verifying body. From this assessment, all the results of individual ASP are to be highlighted, including remedial actions already carried out and those still pending. In respect of the actions in progress and those still pending, intermediate steps must be specified that clearly document to ENSI that the work is present in the timetable.

If dangerous goods regulations are not fully complied with, a concept or an application must be presented that includes the actions to be taken so that the dangerous goods regulations are again complied with.

The suggested actions must also be agreed between the verifying body and the implementer or operator of the deep geological repository.

In the sense of normal management practice, the entire ageing management system is also to be checked to identify whether it still achieves the desired results or whether possibly further developments of the system are necessary, see also Section 7.2.

12 Assessment of the interim storage ability

A similar assessment must be created for the interim storage ability. Both assessments can be combined.

If the requirements on the dry interim storage are not fully complied with, an application has to be made including the action to be taken so that a compliant state is again attained.

The suggested actions must also be agreed between the verifying body and the implementer or operator of the deep geological repository.

In the sense of normal management practice, the entire ageing management system is also to be checked to identify whether it still achieves the desired results or whether possibly further developments of the system are necessary, see also Section 7.2.

13 References

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