

BGE Glossary on the Site Selection Procedure

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Revision sheet

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¹ Category E = editorial correction Category C = clarifying improvement Category S = substantial modification Explanations must be given at least for category S.



List of abbreviations

| AtG | Atomgesetz – Atomic Energy Act |
|------------|--|
| AtVf | <i>Atomrechtliche Verfahrensverordnung</i> – Nuclear Licensing Procedure Ordi- nance |
| BASE | <i>Bundesamt für die Sicherheit der nuklearen Entsorgung</i> – German Federal Office for the Safety of Nuclear Waste Management |
| BER II | Berliner Experimentier-Reaktor II – Berlin Experimental Reactor II |
| BfS | <i>Bundesamt für Strahlenschutz</i> – German Federal Office for Radiation Pro- tection |
| BGE | <i>Bundesgesellschaft für Endlagerung mbH</i> – German Federal Company for Radioactive Waste Disposal |
| BGR | <i>Bundesanstalt für Geowissenschaften und Rohstoffe</i> – Federal Institute for Geosciences and Natural Resources |
| EndlSiAnfV | Endlagersicherheitsanforderungsverordnung – Repository Safety Require- ments Ordinance |
| EndlSiUntV | <i>Endlagersicherheitsuntersuchungsverordnung</i> – Repository Safety Investi- gation Ordinance |
| ewG | einschlusswirksamer Gebirgsbereich – Effective containment zone |
| FEP | Eigenschaften, Ereignisse, Prozesse – Features, events, and processes |
| FRM II | Forschungsreaktor München II – Research Reactor Munich II |
| GeoIDG | Geologiedatengesetz – Geological Data Act |
| IAEA | <i>Internationale Atomenergie-Organisation</i> – International Atomic Energy Agency |
| ICRU | Internationale Kommission für Strahlungseinheiten und Messung – Internati- onal Commission on Radiation Units and Measurements |
| КТА | Kerntechnischer Ausschuss – Nuclear Safety Standards Commission |
| MLZ | Heinz Maier-Leibnitz Zentrum |
| МОХ | Mischoxid – Mixed oxide |
| RS Manual | Handbuch Reaktorsicherheit und Strahlenschutz – Manual on Reactor Safety and Radiation Protection |
| rvSU | <i>repräsentative vorläufige Sicherheitsuntersuchungen</i> – Representative preli- minary safety analyses |
| sgIMS | sicherheitsgerichtetes Integriertes Managementsystem – Safety-oriented in- tegrated management system |



| StandAG | Standortauswahlgesetz – Repository Site Selection Act |
|----------|---|
| StrlSchG | Strahlenschutzgesetz – Radiation Protection Act |
| StrlSchV | Strahlenschutzverordnung – Radiation Protection Ordinance |
| SUP | Strategische Umweltprüfung – Strategic environmental assessment |
| THTR-300 | Thorium-Hochtemperaturreaktor – Thorium High-Temperature Reactor |
| UR | Untersuchungsraum – Investigation area |
| UVP | Umweltverträglichkeitsprüfung – Environmental impact assessment |
| UVPG | Gesetz über die Umweltverträglichkeitsprüfung – Environmental Impact Assessment Act |
| VwVfG | Verwaltungsverfahrensgesetz – Administrative Procedures Act |

List of symbols

| Bq | Becquerel |
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| GWd/t _{HM} | gigawatt-days per metric ton of heavy metal |
| k _f | hydraulic conductivity |



To accompany work and reports on the implementation of the Site Selection Procedure, the Bundesgesellschaft für Endlagerung mbH (BGE) compiles a glossary with explanations of related terms. These explanations of the usage of technical terms in site selection may be of use not only to BGE employees but also to interested readers as a source of information and assistance. The terms are each to be understood solely within the context of the Site Selection Procedure, and the explanations do not claim to be complete definitions. Where it is considered necessary and sensible, some definitions have also been adapted in accordance with current issues, for example. Unless indicated otherwise all quotes to legislations refer to German legislations.

This document is a translation of the original German version of the "Glossar der BGE zum Standortauswahlverfahren" (BGE 2024/56) and is for informational purposes only. In case of differences between versions, the German version applies. Unless indicated otherwise all quotes to legislations refer to German legislations.

| activation (DE: <i>Aktivierung</i>) | "The irradiation of a nuclide, which becomes radioactive as a re- sult. This generally takes the form of neutron capture by a nucleus, which is thereby converted into a radioactive isotope." Source: Translated from German BGE glossary (BGE definition) |
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| activity | "A measure of the decay of radionuclides. |
| (DE: Aktivität) | Units: becquerels (1 Bq = 1 decay per second)." |
| | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| adjacent rock (DE: <i>Nebengebirge</i>) | "The rock directly surrounding the effective containment zone. Its properties are relevant for assessing the safety of a repository. The adjacent rock does not include the part above the effective containment zone, which is referred to as overburden according to section 2 no. 13 of the Repository Site Selection Act [Standortaus- wahlgesetz – StandAG]." |
| | Source: Translated from German BGE glossary (BGE definition) |
| (mine) air (DE: <i>Wetter</i>) | "Mine air is fresh air and exhaust or used air in underground mines, which are supplied from respectively discharged to the sur- face by mine ventilation." |
| | Source: BGE definition |
| ambient dose (DE: <i>Ortsdosis</i>) | "Equivalent dose, measured with the measured values in accord- ance with Appendix 18 Part A at a specific location." |
| . , | Source: Translated from section 1 para. 12 StrlSchV |



| ambient dose rate | "Ambient dose generated within a specific interval of time, divided by the length of the interval." |
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| | Source: Translated from section 1 para. 13 StrlSchV |
| analysis of the repository system (DE: Analyse des Endlager- systems) | "A step in a preliminary safety analysis that is required pursuant to section 7 of the Repository Safety Investigation Ordinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiUntV]. The analysis of a repository system includes a consideration of expected and deviating evolutions, makes use of numerical simulations, and provides an essential basis for evaluating the safety of the repository system." Source: Translated from German BGE glossary (BGE definition), see also section 7 EndlSiUntV |
| area of host rock with a bar- rier function | "Until the time of the concrete spatial determination of the effective containment zone within an investigation area [] the area of host |
| (DE: Wirtsgesteinsbereich mit Barrierefunktion) | rock that may incorporate the effective containment zone is de- scribed as an area of host rock with a barrier function. A effective containment zone can theoretically be located anywhere within an area of host rock with a barrier function. At the start of the [repre- sentative preliminary safety analyses (repräsentative vorläufige Sicherheitsuntersuchungen –)] rvSU, the spatial extent of the area of host rock with a barrier function corresponds to the repository- relevant host rock sequences or formations that were designated as part of work in relation to section 13 of the Repository Site Se- lection Act [Standortauswahlgesetz – StandAG] (BGE 2020/7). Within the framework of the representative preliminary safety anal- yses, the area of host rock with a barrier function may be gradually reduced in size relative to its original extent during the course of spatially differentiated evaluations." Source: Translated from BGE (2022/2, p. 50) (BGE definition) |
| area under consideration | "A [] spatial area around a sub-area' that can be used to assist |
| (DE: Betrachtungsraum) | the processing of representative preliminary safety analyses." |
| | Source: Adapted and translated from BGE (2022/2, p. 46) (BGE definition) |



| areas (DE: <i>Gebiete</i>) | "In accordance with section 2 no. 6 of the Site Selection Act [Standortauswahlgesetz – StandAG], this term refers to 'all spatial areas in Germany that are to be evaluated in terms of their suita- bility as a repository site. An area includes the surface areas and the underlying underground rock formations.' An area therefore corresponds to an undefined spatial area and can include an in- vestigation area [Untersuchungsraum – UR], an area of a specific category (e.g. a category A area defined by the representative pre- liminary safety analyses [repräsentative vorläufige Sicherheitsun- tersuchung –] (rvSU)), or a part of one of these spatial areas, de- pending on the context." Source: Translated from section 2 no. 6 StandAG and German BGE glossary (BGE definition) |
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| areas for method develop- ment (DE: <i>Gebiete zur</i> <i>Methodenentwicklung</i>) | "Sub-areas selected by the BGE in order to develop methods for implementing the representative preliminary safety analyses. These sub-areas constitute 'a selection of examples of the respec- tive host rocks or host rock types that are as representative and, at the same time, as heterogeneous as possible' and 'have the func- tion of ensuring the necessary relation to the real situation (data, geology, etc.) required for the methodological development. This applies to the handling of both large sub-areas [] as well as of a heterogeneous Germany-wide set of underlying data." Source: Translated from BGE (2022/2, p. 240) (BGE definition) |
| areas of category A, B, C, D (DE: <i>Gebiete der Kategorie A,</i> <i>B</i> , <i>C</i> , <i>D</i>) | "In the representative preliminary safety analyses [repräsentative vorläufige Sicherheitsuntersuchungen –] (rvSU), the investigated and evaluated areas are gradually assigned to categories D to A using criteria-based assessment steps, with areas of category D being unsuitable as a final repository site and areas of category A being the most suited." Source: Translated from BGE (2022/1) (BGE definition) |
| assessment period (DE: <i>Bewertungszeitraum</i>) | "The period for which the long-term safety of the repository is to be tested and demonstrated". (section 2 no. 3 EndlSiAnfV) "The assessment period is 1 million years from the intended closure of the repository." (section 3 para. 1 EndlSiAnfV) |
| | Source: Translated from section 2 no. 3 and section 3 para. 1 EndlSiAnfV |



| backfill (DE: <i>Versatz</i>) | "Backfill refers to materials used in the repository mine to backfill the cavities produced by excavation. As a result, backfill materials contribute significantly to the long-term safety of the repository mine — for example, by reducing the cavity volume or by retaining radionuclides. Backfill materials are chosen based on the neces- sary functions and their physico-chemical properties." Source: Translated from German BGE glossary (BGE definition) |
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| barriers (DE: <i>Barrieren</i>) | "Barriers serve the safe containment of radioactive waste. In prin- ciple, a distinction is made between geological, geotechnical, and technical barriers. According to sections 2 no. 7 and 8 of the Re- pository Site Selection Act [Standortauswahlgesetz – StandAG], the geological or geotechnical and technical barriers consist of ge- ological or technically produced units 'that inhibit or prevent the mi- gration of radionuclides.' Furthermore, in accordance with sec- tions 2 no. 1 and 2 of the Repository Safety Requirements Ordi- nance [Endlagersicherheitsanforderungsverordnung – EndlSiAnfV], a distinction is made between essential barriers 'on which the safe containment of the radioactive waste is based' and further barriers 'that, in addition to and in combination with the es- sential barriers, inhibit or prevent the migration of radionuclides.'' Source: Translated from German BGE glossary (BGE definition) |
| best-estimate approach (DE: <i>Best Estimate-Ansatz</i>) | "The best possible estimation for a value/condition. The best esti- mate is based on all available data and therefore corresponds to the most realistic estimate." Source: Translated from BGE (2022/2, p. 240) (BGE definition) |
| beyond design basis event (DE: <i>Auslegungsüberschreitendes</i> <i>Ereignis</i>) | "An event beyond design basis is an event or accident that is more severe than that which was taken into account in the design of the nuclear facility. Nevertheless, the plant must be able to respond to such events with sufficient safety measures in order to limit the ef- fects of the event beyond design basis and thus minimize the risk to people and the environment." Source: Translated from German BGE glossary (BGE definition) |
| boiling water reactor (DE: Siedewasserreaktor) | "A type of light water reactor with steam generation in the primary loop." Source: Translated from BGE (2022/2, p. 48) (BGE definition) |



| burn-up (DE: <i>Abbrand</i>) | "A measure of the thermal energy released by nuclear fission in nuclear fuel, expressed per unit mass of heavy metal in the nuclear fuel. Units: e.g., 'gigawatt-days per metric ton of heavy metal' $[GWd/t_{HM}]$." |
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| | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| canister (DE: <i>Kokille</i>) | "A standardized steel vessel — in this case, to hold high-level radi- oactive waste in the form of vitrified fission product solutions pro- duced by reprocessing." |
| | Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| cap rock (DE: <i>Hutgestein</i>) | "Poorly soluble rock such as anhydrite, gypsum [,] and occa- sionally also lime that is left in the uppermost parts of salt stocks [] following underground chemical dissolution of soluble salts (rock salt, potassium and magnesium salts) by groundwater. [] These rock masses then sit on top of the salt stock, in a sense, like a cap." |
| | Source: Translated from Murawski & Meyer (2010, p. 74) |
| clay fraction (DE: <i>Tonanteil</i>) | "The clay fraction is a rough estimate of the grain size proportions, which is made using the petrographic layer description contained in the bore log. This method was developed by Hoth et al. (2007) in order to establish a connection between petrography and rock permeability. Different lithotypes are assigned to a corresponding clay fraction. The use of the term 'clay fraction' by Hoth et al. (2007) can give the impression of a quantitative determination of the clay mineral and/or grain size proportions, which should be avoided. Due to this reason, the BGE uses the term 'clay score'." |
| | Source: Translated from Hoth et al. (2007) |



| clay score (DE: <i>Tonwert</i>) | "The clay score is derived from the descriptions of the rock se- quence documented in the bore logs. Methodologically, the clay score is based on the clay fraction developed by the [Federal Insti- tute for Geosciences and Natural Resources (Bundesanstalt für Geowissenschaften und Rohstoffe) –] BGR (Hoth et al. 2007). In order to achieve comparable results independent from the reviser, the evaluation key developed by Hoth et al. (2007) was specified by the BGE. Clay marlstone is given a clay score of 65. Marlstone, calcareous marlstone, limestone with a proportion of silty and sandy claystone are assigned clay scores of less than 60." Source: Translated from Hoth et al. (2007) |
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| clearance of radioactive substances (DE: Freigabe radioaktiver Stoffe) | "Clearance of radioactive substances or objects from controlled ar- eas as non-radioactive substances according to section 31 of the Radiation Protection Ordinance [Strahlenschutzverordnung – StrlSchV]." Source: Translated from German BGE glossary (BGE definition), see also section 31 StrlSchV |
| coefficient of hydraulic con- ductivity k _f (hydraulic con- ductivity) (DE: Durchlässigkeitsbeiwert k _f (hydraulische Durchlässigkeit)) | "Formation and rock permeability are quantified by the coefficient of hydraulic conductivity k_f (hydraulic conductivity). This includes 'The resistance (friction) of a rock [] through which the fluid flows' and depends 'on the properties of the fluid (density, viscos- ity [])' and on the properties of the rock (permeability). The coef- ficient of hydraulic conductivity is given in units of m/s." Source: Adapted and translated from Hölting & Coldewey (2013, p. 24) |
| cold testing (DE: <i>Kalterprobung</i>) | "After construction is completed and before commissioning the re- pository, it is necessary to test the functionality of the equipment for conditioning, handling, emplacing, and retrieving repository packages under realistic operating conditions but without a radio- active load. Cold testing is therefore a form of trial operation." See "Trial operation". |
| | Source: Translated from German BGE glossary (BGE definition) |



| comparative analysis (DE: <i>Analogiebetrachtung</i>) | "A comparative analysis describes the process of obtaining infor- mation by applying data and knowledge from one set of circum- stances to another, similar set of circumstances, thus providing a technically sound means of obtaining information for a given area even if no location-specific data is available. This applies not only to the spatial transmission of data and information but also to the application of model assumptions that are derived qualitatively or quantitatively from practical experience, the analysis of higher- level datasets, or process understanding." |
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| | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| conditioning (DE: Konditionierung) | "Conditioning is the treatment and packaging of radioactive waste suitable for interim storage and/or disposal. The most important sections of conditioning are the solidification of liquid waste and packaging suitable for handling, taking into account the necessary radiation protection for the personnel in the interim storage facili- ties and repositories who have to handle the waste later on." Source: BASE (2025b) |
| conditioning facility (DE: Konditionierungsanlage) | "A facility in which radioactive waste is treated and packaged in a manner suitable for final disposal." |
| | Source: Translated from German BGE glossary (BGE definition) |
| container (DE: <i>Behälter</i>) | "A tightly sealable enclosure of radioactive waste for the purpose of transport and/or storage. Serves as a technical barrier and per- forms safety functions." |
| | See "Disposal container" and "Disposal package". |
| | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| criticality exclusion (DE: <i>Kritikalitätsausschluss</i>) | "The exclusion of a self-sustaining nuclear chain reaction. In a re- pository for high-level radioactive waste, it must be ensured that a critical assembly does not occur at any time. A critical assembly exists if the number of neutrons released in a given system is at least as great as the total number of neutrons absorbed in and leaving the system." |
| | Source: Translated from German BGE glossary (BGE definition), see also section 8 EndlSiAnfV |



| cross-border environmental | "Environmental impacts of a project in another state." |
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| impacts | Source: Translated from section 2 para. 3 UVPG |
| (DE: Grenzüberschreitende Umweltauswirkungen) | |
| decay time (DE: Abklingzeit) | "Time during which the heat output and activity decrease ('decay') after fuel elements are unloaded from the reactor." |
| · · · · · · | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| deviating evolutions (DE: Abweichende Entwicklun- gen) | "Deviating evolutions are evolutions that are not to be expected but that could occur with regard to the geological and climatic situ- ation, the technical and geotechnical barriers, and the waste that is to be emplaced." |
| | Source: Translated from section 3 para. 4 EndlSiAnfV |
| disposal (DE: <i>Endlagerung</i>) | "The emplacement of radioactive waste in a federal facility pursu- ant to section 9a para. 3 clause 1 of the Atomic Energy Act [Atomgesetz – AtG] (repository) with no intention of retrieval." |
| | Source: Translated from section 2 no. 1 StandAG |
| disposal container (DE: Endlagerbehälter) | "A container for radioactive waste that is to be emplaced in a re- pository." |
| | Source: Translated from BGE (2021/2, p. 11) (BGE definition) |
| disposal package (DE: <i>Endlagergebinde</i>) | "The disposal containers with radioactive waste intended for dis- posal." Source: Translated from section 2 no. 4 EndlSiAnfV |
| document (DE: <i>Unterlage</i>) | "Written material that is created, edited, or handled in the course of the Site Selection Procedure and serves as traceable documen- tation. Documents can be distinguished into 'internally created' and 'externally created' documents." Source: Translated from BGE (2022/8, p. 9) (BGE definition) |



| dose constraint (DE: <i>Dosisrichtwert</i>) | "An effective dose or equivalent dose that serves as the upper limit for the exposure to be considered in the planning and optimisation of protection measures for persons in planned exposure situa- tions." Source: Translated from section 1 para. 5 StrlSchV |
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| effective containment zone (DE: Einschlusswirksamer Ge- birgsbereich) | "The part of a rock formation that, in repository systems that es- sentially rely on geological barriers, ensures safe containment of radioactive waste in a repository in conjunction with the technical and geotechnical barriers." |
| | Source: Translated from section 2 no. 9 StandAG |
| emplacement area (DE: <i>Einlagerungsbereich</i>) | "The spatial area of a rock formation in which the radioactive waste is to be emplaced. If the containment capacity of the reposi- tory system is essentially based on technical and geotechnical barriers, this also includes the area of rock that ensures the func- tionality and preservation of such barriers." |
| | Source: Translated from section 2 no. 10 StandAG |
| enrichment (DE: <i>Anreicherung</i>) | "1) The process of increasing the proportion of specific nuclides in a nuclide mixture or element above the natural concentration. 2) A measure (in percentage by weight or as mole fraction) of the concentration of a specific nuclide in a nuclide mixture or element (e.g., '4 wt.% U-235')." |
| | Source: Translated from BGE (2022/2, p. 46) (BGE definition) |
| enveloping surface (DE: <i>Hüllfläche</i>) | "The enveloping surface is a model surface from geological 3D models that maps or envelops a geological body (e.g. salt diapir)." |
| | Source: Translated from BGE (2020/10, p. 67) (BGE definition) |



| environmental impact asses- sment | "An environmental impact assessment in Germany [Umweltver- träglichkeitsprüfung – UVP] determines and describes in a report |
|---|---|
| (DE: Umweltverträglichkeits- prüfung) | what impact a project will have on humans (including human health), on animals, plants, biodiversity, soil, water, ambient air, the climate, the landscape and cultural goods. The public and spe- cialist authorities, as well as citizens and authorities in neighbour- ing countries that may be affected, may express comments and opinions on the report. The authority responsible for approving a project is tasked with evaluating the information and comments and with taking account of the results of the UVP when deciding whether to approve a project. Regulations governing the UVP are set out in the Environmental Impact Assessment Act [Gesetz über die Umweltverträglichkeitsprüfung – UVPG]." |
| | Source: Adapted and translated from BMUB (2017) (website) |
| environmental impacts (DE: <i>Umweltauswirkungen</i>) | "Direct and indirect impacts of a project or the implementation of a plan or program on protected assets. This also includes such im- pacts of the project that are to be expected due to its susceptibility to major accidents or disasters, insofar as these major accidents or disasters are relevant to the project." |
| | Source: Translated from section 2 para. 2 UVPG |
| equivalent dose (DE: <i>Äquivalentdosis</i>) | "Equivalent dose: product of absorbed dose detected in the soft tissues as specified by the International Commission on Radiation Units and Measurements (ICRU) and ICRU quality factor Q in ac- cordance with Annex 18 Part D, which allows for the influences ex- erted by the type and energy of radiation. If several radiation types and energies are present, the total equivalent dose shall be the sum of their calculated individual contributions." |
| | Source: Translated from section 1, para. 2StrlSchV |
| erosion (DE: <i>Erosion</i>) | "Widely used term for all processes in which soil material and [] [rocks] are removed by rivers, glaciers, wave action, or wind." Source: Adapted and translated from Grotzinger & Jordan (2017, p. 723) |
| essential barriers (DE: Wesentliche Barrieren) | "The barriers on which the safe containment of radioactive waste is based." Source: Translated from section 2 no. 1 EndlSiAnfV |



| evaluation criteria (DE: <i>Prüfkriterien</i>) evaluation step (DE: <i>Prüfschritt</i>) | "The site-specific evaluation criteria that are to be established and applied in accordance with sections 16 para. 2, 17 para. 4, and 18 para. 2 for the purpose of evaluating the results of the underground exploration." Source: Translated from section 2 no. 14 StandAG "The evaluation of areas in the representative preliminary safety analyses [repräsentative vorläufige Sicherheitsuntersuchungen –] (rvSU) takes place in four consecutive evaluation steps, in which areas are successively assigned to Categories D to A." |
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| evolutions (DE: <i>Entwicklungen</i>) | "The evolutions of the repository system describe various [(ex- pected, deviant, or hypothetical)] scenarios for the future of the re- pository system []. They are derived in a systematic manner and provide the basis for evaluating long-term safety." Source: Translated from BGE (2022/2, p. 459) (BGE definition) |
| evolutions based on future human activities (DE: Entwicklungen auf der Grundlage zukünftiger menschlicher Aktivitäten) | "Evolutions based on future human activities are evolutions that may be triggered by future human activities — in particular, by un- intended human intrusion into the repository — and that may be- come relevant to the safety of the repository system. Reference evolutions are evolutions that may be triggered by human activities that are common at the present time." Source: Translated from section 3 para. 7 EndlSiAnfV |
| exhaust air | "Exhaust air is the vent air released to the outer atmosphere." |
| expected evolutions (DE: Zu erwartende Entwick- lungen) | "Expected evolutions are evolutions that are certain to or that gen- erally occur, especially with regard to the geological and climatic situation, the geological, technical and geotechnical barriers, and the waste that is to be emplaced." Source: Translated from section 3 para. 3EndlSiAnfV |
| experimental reactor (DE: Versuchsreaktor) | "A small nuclear reactor for testing a reactor type, e.g., the Kahl experimental power plant." Source: Translated from BGE (2022/2, p. 49) (BGE definition) |



| exploration | "The surface and underground exploration of the subsurface with |
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| (DE: <i>Erkundung</i>) | regard to its suitability for the establishment of a repository for high-level radioactive waste.' Exploration is typically carried out using geophysical (e.g. seismic) and hydrogeological methods, boreholes, or mines." |
| | Source: Adapted and translated from section 2 no. 2 StandAG |
| exploration programs (DE: <i>Erkundungsprogramme</i>) | "The entirety of the intended measures pursuant to sections 15 para. 4 and 17 para. 4 for surface and subsurface exploration. These measures serve to obtain the site-specific geoscientific data that is needed for renewed application of the geoscientific require- ments and criteria as well as for carrying out preliminary safety analyses." |
| | Source: Translated from section 2 no. 17 StandAG |
| exploration well (DE: Erkundungsbohrung) | "Borehole for the exploration of the subsurface within the frame- work of surface or subsurface exploration in phases II and III of the Site Selection Procedure." |
| | Source: Translated from German BGE glossary (BGE definition) |
| FEP catalogue (DE: <i>FEP-Katalog</i>) | "A features, events, and processes (FEP) catalogue is a system- atic, structured description of a repository system and the influ- ences and dependencies between processes and components that exist within it." |
| | Source: Translated from BGE (2022/2, p. 456) (BGE definition) |
| fissile burn-up factor (DE: <i>Abbrandkredit</i>) | "Consideration of the reduced fissile material concentration and the formation of neutron-absorbing activation and fission product nuclides during the burn-up of the fuel elements in the verification process." |
| | Source: Translated from German BGE glossary (BGE definition) |
| formation (DE: <i>Formation</i>) | "A genetically related assemblage of rocks that was deposited as a closed unit in the form of matching, horizontal layers and that share certain genetic lithological features and are sufficiently thick to be represented on a map." |
| | Source: Adapted and translated from Grotzinger & Jordan (2017, p. 725) |



| formation permeability (DE: Gebirgsdurchlässigkeit) | "The formation permeability is the '[hydraulic] permeability of a body of rock (formation) with all of its inhomogeneities.' The for- mation permeability results from the 'rock (or pore) permeability and the fissure (or interface) permeability.' Formation permeability refers to a larger area, as opposed to rock permeability, which re- fers to a smaller-scale sample of rock." |
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| | Source: Adapted and translated from Hölting & Coldewey (2013, p. 26, p. 32) |
| fuel element (DE: <i>Brennelement</i>) | "An essential component of a nuclear reactor. It is assembled of several fuel rods which contain the nuclear fuel, and of structural components." |
| | Source: Translated from German BGE glossary (BGE definition) |
| fuel rod (DE: <i>Brennstab</i>) | "A fuel rod is a tightly sealed metal tube containing nuclear fuel in the form of pellets. Multiple fuel rods are bundled together to cre- ate a fuel element, which is used in a nuclear reactor." |
| | Source: Translated from German BGE glossary (BGE definition) |
| Fundamental report (DE: <i>Grundlagenbericht</i>) | "Detailed explanation of basic principles/approaches/methods/con- cepts that can be used to develop a result or that themselves rep- resent a result." |
| | Source: Translated from German BGE glossary (BGE definition) |
| Fundamental technical input (DE: Fachlich-technische Grundlage) | "Fundamental input for other reports that are not published inde- pendently, e.g. geological models, data sets, codes, digital maps, databases or individual chapters." |
| further barriers (DE: <i>Weitere Barrieren</i>) | "The barriers that, in addition to the essential barriers and in inter- action with them, prevent or hinder the migration of radionuclides." Source: Translated from section 2 no. 2 EndlSiAnfV |



| geodata (DE: <i>Geodaten</i>) | "Geodata are data with a spatial reference. They are computer- readable informations on topography, conditions, and objects with a spatial reference to the surface. Geodata consist of geometrical and associated technical data. They represent the basis for creat- ing maps and plans" (GDI-NI 2011). Geological data within the meaning of the Geological Data Act [Geologiedatengesetz – GeolDG] "are substantiating, technical, and evaluation data ob- tained in geological investigations." |
|--|---|
| | Source: Translated from GDI-NI (2011, p. 2), and section 3 para. 3 GeoIDG |
| geogenic processes (DE: <i>Geogene Prozesse</i>) | "Geogenic processes are those that would take place at a poten- tial site even in the absence of a repository and that are caused by the geological setting (e.g., erosion, volcanic activity, or sea level changes). They are distinguished from technogenic processes, which are caused by various structural components of the reposi- tory or the radioactive waste or take place specifically inside them." |
| | Source: Translated from BGE (2022/1, p. 35) (BGE definition) |
| geological barriers (DE: Geologische Barrieren) | "Geological units that inhibit or prevent the migration of radionu- clides." |
| , , , , , , , , , , , , , , , , , , , | Source: Translated from section 2 no. 7 StandAG |
| geoscientific long-term prognosis | "[Predicted] evolutions of a site based on geogenic processes without considering the influence of a repository." |
| (DE: Geowissenschaftliche Langzeitprognose) | Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| geosynthesis (DE: <i>Geosynthese</i>) | "Geosynthesis includes the documentation and interpretation of all [relevant] geoscientific information of an investigation area. The aim of geosynthesis is to achieve a consistent representation, es- pecially of the geoscientific conditions that are relevant to reposi- tory safety." Source: Translated from section 5 para. 2 EndISiUntV |



| groups of measures | "A group of measures describes an essential protection mecha- |
|---|---|
| (DE: Maßnahmengruppen) | nism intended to ensure the minimization of damage to the essen- tial barriers. The groups of measures includes measures that are intended to minimize damage to the essential barriers based on these safety objectives." |
| | Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| half-life (DE: <i>Halbwertszeit</i>) | "For a radionuclide, the time required for the activity to decrease, by a radioactive decay process, by half." Source: IAEA (2022) |
| hazardous incident (DE: <i>Störfall</i>) | "Succession of events in the case of the occurrence of which the operation of the nuclear installation, of the installation for the gen- eration of ionising radiation, or the practice, may not be continued for safety reasons and for which the nuclear installation or the in- stallation for the generation of ionising radiation is to be designed, or for which protection arrangements are to be provided in the practice as a precaution." |
| | Source: Translated from section 1 para. 18 StrlSchV |
| heat-generating radioactive waste (DE: <i>Wärmeentwickelnde Ab-</i> fälle) | "Heat-generating radioactive waste covers both high-level and some intermediate-level waste. This particularly includes vitrified waste from reprocessing spent fuel elements and the fuel ele- ments themselves. This category of waste has both a high con- centration of activity and emits high temperatures." |
| | Source: BASE (2025b) |
| heavy metal (DE: <i>Schwermetall</i>) | "In terms of the mass specification for nuclear fuels (e.g. unit 'ton of heavy metal'), the total mass of uranium, plutonium and thorium isotopes contained in the fuel prior to reactor use." |
| | Source: Translated from BGE (2022/2, p. 48) |
| high-level radioactive waste (DE: Hochradioaktive Abfälle) | "High-level radioactive waste mainly comes from spent fuel ele- ments, which were used in nuclear power stations or in research reactors. Spent fuel elements emit much more radiation than un- used ones because of the fission products that they contain." |
| | Source: BASE (2020D) |



| horizontal cross section (DE: <i>Niveauschnitt</i>) | "A horizontal cross section depicts the geological conditions at a specific depth below the surface." |
|---|---|
| | Source: Translated from BGE (2020/10, p. 66) (BGE definition) |
| host rock (DE: <i>Wirtsgestein</i>) | "Rock type that, in Germany, in accordance with section 1 para. 3 of the Repository Site Selection Act [Standortauswahlgesetz – StandAG], 'is fundamentally eligible [] for the disposal of high- level radioactive waste.' These are the host rocks 'rock salt, clay- stone, and crystalline rock.'" Source: Translated from section 1 para. 3 StandAG |
| host rock type (DE: Wirtsgesteinstyp) | "Different host rock types exist when a host rock has two or more different characteristics, e.g. in terms of its deposition, which leads to consequences with regard to its handling within the site search. Two different host rock types are therefore defined for rock salt based on section 1 para. 3 of the Repository Site Selection Act [Standortauswahlgesetz – StandAG], which states that the host rocks that are fundamentally eligible for the final disposal of heat- generating radioactive waste in Germany are rock salt, claystone, and crystalline rock, and based on the fact that two deposition types exist for rock salt. Specifically, the two host rock types are 'rock salt in a steep deposit' and 'rock salt in a stratiform deposit', commonly referred to as domal and bedded rock salt, respec- tively." |
| hot cell (DE: <i>Heiße Zelle</i>) | "A hot cell is a 'space enclosed and shielded on all sides in which high-activity radioactive substances are handled by remote control or automatically." Source: Translated from DIN 25460:2023-03 |
| hot workshop (DE: <i>Heiße Werkstatt</i>) | "A hot workshop is a workshop specified to be used for working on radioactive parts that possess a license pursuant to section 12 of the Radiation Protection Act [Strahlenschutzgesetz – StrlSchG] for their handling and treatment." Source: KTA 3601, p. 5 |



| hypothetical evolutions | "Hypothetical evolutions are evolutions that can be ruled out, as |
|--|---|
| (DE: Hypothetische Entwick- lungen) | tions." |
| | Source: Translated from section 3 para. 6 EndlSiAnfV |
| immission | "Hazards from air pollution, pollutants, noise, radiation or the like on people, animals and vegetation." |
| (DE: Immission) | Source: Translated from BASE (2025a) |
| impact event | "An impact event is a collision between two celestial bodies at very |
| (DE: Impaktereignis) | high speed, resulting in the formation of an impact crater on main- land. Numerous impacts of meteoroids, asteroids, and comets have been identified on Earth as well as on the Moon and other celestial bodies." |
| | Source: Translated from Stöffler & Grieve (2007, p. 82) |
| incident | "An event in a planned exposure situation that led to, could have |
| (DE: Vorkommnis) | led to or could lead to an unanticipated exposure, including the oc- currence of a hazardous incident or emergency. No incident shall be deemed to have occurred if the event is not relevant in terms of radiation protection." |
| | Source: Section 1 para. 22 StrlSchV |
| integrity | "According to section 2 no. 5 of the Repository Safety Require- |
| (DE: Integrität) | ments Ordinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiAnfV], 'the preservation of the properties of the barriers of the repository system that are relevant for the safe containment of radioactive waste'. Integrity is therefore a prerequisite for long- term safety." |
| | Source: Translated from section 2 no. 5 EndlSiAnfV (BGE defini- tion) |
| interim storage | "Temporally limited storage of spent fuel elements or radioactive |
| (DE: Zwischenlagerung) | in decentralised interim storage facilities on the sites of the nuclear power plants, in fact until they have been conditioned suitably for disposal in a repository." |
| | |

Source: BASE (2025b)



| interim storage facilities (DE: <i>Standort-Zwischenlager</i>) | "Facilities where spent fuel elements can be stored in appropriate transport and storage containers on the site of a nuclear power plant until their conditioning suitable for disposal in a repository. Storage time is planned to be 40 years at maximum, starting at loading of the first container." Source: BASE (2025b) |
|--|---|
| investigation area (DE: <i>Untersuchungsraum</i>) | "According to section 3 para. 1 of the Repository Safety Investiga- tion Ordinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiUntV], investigation areas are those 'spatial areas that are intended for evaluation as a possible final repository site'. The in- vestigation areas are to be identified in the representative prelimi- nary safety investigations [repräsentative vorläufige Sicherheitsun- tersuchungen –] (rvSU) based on the identified sub-areas. In the rvSU, one investigation area corresponds to one sub-area." Source: Translated from BGE (2022/1, p. 32), section 3 para. 1 EndlSiUntV |
| investigation sub-area (DE: <i>Teiluntersuchungsraum</i>) | "An investigation sub-area is a defined area that spatially covers a part of an investigation area. Investigation areas can be subdi- vided into investigation sub-areas as part of a representative pre- liminary safety analysis. This allows individual process steps and evaluations carried out as part of a representative preliminary safety analysis to be represented on a small scale at the level of investigation sub-areas." Source: Translated from BGE (2022/2, p. 49) (BGE definition) |
| karst (DE: <i>Karst</i>) | "In the underground context, karst refers to cavities in soluble rocks (especially limestone, but also other carbonates and sul- fates) on a scale ranging up to the size of large caves." Source: Translated from German BGE glossary (BGE definition) |
| lifting equipment/ lifting gear | "Equipment for lifting and moving loads." |
| light-water reactor (DE: Leichtwasserreaktor) | "A nuclear reactor using light water (H ₂ O) as a coolant and moder- ator." Source: Translated from BGE (2022/2, p. 47) (BGE definition) |



| lithology (DE: <i>Lithologie</i>) | "Lithology 'describes and distinguishes between rocks according to mesoscopic characteristics []. Today, the mineral composition and texture of a rock is often referred to as its lithology." Source: Translated from Martin & Eiblmaier (2001a, p. 280) |
|--|---|
| load attachment (DE: <i>Lastanschlag</i>) | "The creation of a connection between a load and a lifting attach- ment at specified load attachment points." Source: Translated from Pehani & Viertbauer (2018, p. 7) |
| long-term safety (DE: <i>Langzeitsicherheit</i>) | "The lasting protection of humans and, as far as the long-term pro- tection of human health is concerned, the environment from the harmful effects of ionizing radiation from radioactive waste." Source: Translated from section 2 no. 6 EndlSiAnfV |
| Manual on Reactor Safety and Radiation Protection (RS manual) (DE: Handbuch Reaktorsicher- heit und Strahlenschutz (RS-Handbuch)) | "The Manual on Reactor Safety and Radiation Protection [Hand- buch Reaktorsicherheit und Strahlenschutz – RS Manual] contains all statutory and non-statutory regulations that are valid in Ger- many for the areas: nuclear safety, disposal, transporting radioac- tive substances and protection from ionizing and non-ionizing radi- ation. You can also find international regulations and other facts and information about nuclear technology and radiation protection in the manual." Source: Translated from BASE (2023) |
| materials testing reactor (DE: <i>Materialtestreaktor</i>) | "A type of high-flux research reactor with applications in materials research, e.g., BER II [Berliner Experimentier-Reaktor II – Berlin Experimental Reactor II; a research reactor at Helmholtz-Zentrum Berlin]." See "Research reactor". Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| mine ventilation (DE: <i>Bewetterung</i>) | "Mine ventilation is the planned supply of fresh air to an under- ground mine." Source: BGE definition |
| mixed oxide (MOX) (DE: <i>Mischoxid (MOX)</i>) | "A nuclear fuel consisting of mixed uranium-plutonium oxide from reprocessing." Source: Translated from BGE (2022/2, p. 47) (BGE definition) |



| model run | "A model calculation with specific parameterization as part of a modeling case." |
|--|--|
| | Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| modeling case (DE: <i>Rechenfall</i>) | "The translation of a development into a numerically calculable model." Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| moderator (DE: <i>Moderator</i>) | "In a nuclear reactor, a moderator serves to slow free neutrons produced in the reactor core during the fission process. Similar to billiard balls, neutrons collide with the nuclei of the moderator and thus give off part of their kinetic energy. Since the largest energy transfers occur in the elastic collisions of two equally heavy parti- cles, light atoms such as hydrogen (in the form of water or polyeth- ylene) and carbon (in the form of graphite) are mostly used as moderator. The slowed neutrons are better suitable for both con- tinuing the fission in the reactor core and carrying out scientific ex- periments in a research reactor." Source: BfS (o. J.b) |
| narrowing of areas in Step 2 of Phase I (DE: Einengung von Gebieten in Schritt 2 der Phase I) neutron multiplication factor (DE: Neutronenmultiplika- tionsfaktor) | "Reduction of the area and the number of areas: The narrowing down of areas refers not only to reducing the size of an area but also to reducing the number of remaining areas." Source: Translated from BGE (2023/3, p. 8) (BGE definition) "This factor indicates the neutron balance. It is the ratio of the number of neutrons released in nuclear reactions to the sum of neutrons absorbed in the system and neutrons leaving the system " |
| | Source: Translated from German BGE glossary (BGE definition) |



| nuclear fuel | "Nuclear fuels are special fissionable materials in the form of |
|---------------------------------------|--|
| (DE: Kernbrennstoffe) | 1. Plutonium 239 and plutonium 241, |
| | 2. uranium enriched in isotopes 235 or 233, |
| | 3. any material containing one or more of the substances cited un- |
| | der nos. 1 and 2, |
| | 4. substances which permit a self-sustaining chain reaction to be |
| | maintained in a suitable installation and which are defined in a |
| | statutory ordinance. |
| | The term 'uranium enriched in isotopes 235 or 233' means ura- |
| | nium containing the isotopes 235 or 233 or both in such quantities |
| | that the sum total of the amounts of these two isotopes is greater |
| | ring ratio of isotope 236 in relation to isotope 238 " |
| | |
| | See "Enrichment". |
| | Source: Translated from section 2 para. 1 AtG |
| nuclear installation | "Nuclear installations are |
| (DE: Kerntechnische Anlage) | a) stationary installations for the production or for the treatment or |
| · · · · · · · · · · · · · · · · · · · | processing or for the fission of nuclear fuels or for the repro- |
| | cessing of irradiated nuclear fuels according to section 7 para. 1, |
| | b) storage of irradiated nuclear fuels according to section 6 para. 1 or 3, |
| | c) interim storage facilities for radioactive waste, if the interim stor- |
| | age facilities are directly connected to the particular nuclear instal- |
| | lation pursuant to character a or b and are located at the site of the installations." |
| | Source: Adapted and translated from section 2 para. 3a no. 1 AtG |
| nuclear material account- | "Nuclear material accountancy and control encompasses |
| ancy and control | measures (e.g. safeguards) to protect against the risks that can |
| (DE: Kernmaterialüberwa- chung) | arise from nuclear fuels if they fall into the wrong hands. Those |
| | fissile material." |
| | Source: Translated from German BGE glossary (BGE definition) |



| nuclear safety | "The achievement and maintaining of normal operating conditions, |
|--|---|
| (DE: Nukleare Sicherheit) | the prevention of accidents and the attenuation of results of an ac- cident, so that life, health and real assets are protected against the hazards of nuclear energy and the harmful effects of ionising radi- ation." |
| | Source: Translated from section 2 para. 3a no. 2 AtG |
| Nuclear Safety Standards Commission (DE: Kerntechnischer Ausschuss) | "The Nuclear Safety Standards Commission [Kerntechnischer Ausschuss – KTA] has the task [of issuing] nuclear safety stand- ards for these topics in the area of nuclear technology where a consensus between experts of manufacturers and operators of nu- clear power plants, of authorized experts [and of] state officials is apparent, and [of supporting] their application." |
| | Source: Adapted from KTA (2024) |
| nuclear/radiation-protection design (DE: Kerntechnische/strahlen- schutztechnische Auslegung) | "Implementation of safety requirements whose fulfillment ensures adoption of the necessary precautions, according to the state of the art of science and technology, against harm resulting from the construction and operation of a nuclear facility (section 7 para. 2 no. 3 of the Atomic Energy Act [Atomgesetz – AtG]) in order to meet the safety objectives set out in AtG and in the Radiation Pro- tection Ordinance [Strahlenschutzverordnung – StrlSchV]." |
| | Source: Translated from German BGE glossary (BGE definition) |
| nuclide (DE: <i>Nuklid</i>) | "A type of an atom that is uniquely identifiable by its atomic num- ber (element), mass number, and energy state." Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| nuclide list (DE: <i>Nuklidvektor</i>) | "A presentation of all nuclides in a nuclide mixture (material) in the form of a list of nuclides and their respective masses, activities, quantities, or concentrations." Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| operational phase (DE: <i>Betriebsphase</i>) | "The operational phase begins with the trial operation and ends with the completion of radioactive waste emplacement in the re- pository." |
| | Source: Translated form German BGE glossary (BGE definition), see also sections 17 and 19 EndlSiAnfV |



| optimization (DE: <i>Optimierung</i>) | "An iterative process for improving the safety concept and tech- nical design according to section 12 of the Repository Safety Re- quirements Ordinance [Endlagersicherheitsanforderungsver- ordnung – EndlSiAnfV] in order to optimize the long-term safety and operating safety of the repository. 'Optimization is complete when a further improvement of safety can only be achieved with a disproportionately large amount of effort' (section 12 para. 2 EndlSiAnfV)." Source: Translated from German BGE glossary (BGE definition) |
|---|---|
| | according to section 12 para. 1 EndlSiAnfV as well as from quote of section 12 para. 2 |
| overburden (DE: <i>Deckgebirge</i>) | "The section of rock above the effective containment zone and, in repository systems based on technical and geotechnical barriers, above the emplacement area." |
| | Source: Translated from section 2 no. 13 StandAG |
| overlying salt (DE: Salzschwebe) | "The overlying salt is an area within a salt diapir between the salt table and an examination area." |
| | Source: Translated from BGE (2020/10, p. 65) (BGE definition) |
| overlying strata | "The section of rock lying above the host rock." |
| (DE: Überdeckung) | Source: Translated from BGE (2020/87, p. 4) (BGE definition) |
| packaging (DE: <i>Verpackung</i>) | "All of the non-reusable receptacles and any other components or materials necessary for the receptacles enclosing a waste product and performing containment and other safety functions." |
| | Source: Translated from BASE (2025a) and combined with defini- tion from IAEA (2022) |
| personal dose (DE: Personendosis) | "Equivalent dose measured with the measured values stated in Annex 18 Part A on a part of the body surface that is representa- tive of the exposure." |
| | Source: Translated from section 1 para. 14 StrlSchV |



| petrography (DE: <i>Petrographie</i>) | "Petrography is a 'branch of the geosciences dealing with the nat- ural occurrence, description, and systematic classification of rocks.' 'Petrography is therefore a sub-area of petrology and ex- amines the geological relationships between rock formations at the site, their mineralogical and chemical composition, and their struc- ture.'" |
|--|---|
| | Source: Translated from Martin & Eiblmaier (2001b, p. 114) |
| plan approval decision (DE: Planfeststellungsbes- chluss) | "The plan approval decision is an administrative act that deter- mines the permissibility of a project, including all other necessary licenses, permits, etc." |
| | Source: Translated from BASE (2025a) |
| plan approval procedure (DE: <i>Planfeststellungsverfah-</i> <i>ren</i>) | "The plan approval procedure is a special administrative proce- dure for determining the predominant public interest in an area and therefore the permissibility of a project that is relevant to re- gional planning. The procedure concludes with an administrative act and is regulated in Part V(2) of the Administrative Procedures Act [Verwaltungsverfahrensgesetz – VwVfG]." |
| | Source: Translated from German BGE glossary (BGE definition) |
| power reactor | "A nuclear reactor for energy production at a nuclear power plant." |
| (DE: Leistungsreaktor) | Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| preliminary safety analyses (DE: Vorläufige Sicherheitsun- tersuchungen) | "The analyses that are to be carried out based on section 27 and an ordinance pursuant to section 27 para. 6 and that are to be drawn up in the procedural steps pursuant to section 14 para. 1 based on the collected data that is available to the federal and state authorities, pursuant to section 16 para. 1 based on the re- sults of surface exploration, and pursuant to section 18 para. 1 based on the results of underground exploration as well as on the basis of the specific repository concept that corresponds to the in- dividual stage of the procedure." |
| | Source: Translated from section 2 no. 16 StandAG |



| pressurized water reactor | "A nuclear reactor that uses water as a coolant and moderator and |
|--|--|
| (DE: <i>Druckwasserreaktor</i>) | in which the water does not boil even at high temperatures due to the high operating pressure in the primary loop. Steam is gener- ated in the secondary loop." |
| | Source: Translated from BGE (2022/2, p. 47) (BGE definition) |
| preventive measures (DE: <i>Präventionsmaßnahmen</i>) | "Impact-specific measures that are to be specified during the [repräsentative vorläufige Sicherheitsuntersuchungen –] rvSU [(representative preliminary safety analyses)] as part of the [] |
| | description of the fundamental possibility of safe operation of the repository and that are intended to maintain the system status of 'specified normal operation'." |
| | Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| processing (DE: <i>Processing</i>) | "Processing of geophysical (especially reflection seismic) data in order to produce interpretable data from data measured in the field." |
| | Source: Upadhyay (2004, p. 7f) |
| waste package quality as- surance | "Proof of compliance with the final storage conditions for waste packages." |
| (DE: Produktkontrolle) | Source: BGE definition |
| progress of work (DE: <i>Arbeitsstand</i>) | "Current status of work that is being carried out as part of the Site Selection Procedure, e.g. modeling, calculation, simulation, docu- mentation, planning, data retrieval, concept, methodological devel- opment, or exploration." |
| | Source: Translated from BGE (2022/8, p. 8) (BGE definition) |
| protected assets (DE: <i>Schutzgüter</i>) | "Protected assets [] are 1. humans, and especially human health, 2. animals, plants, and biodiversity, 3. land, soil, water, air, climate, and landscape, 4. cultural heritage and other material assets as well as 5. interactions between the aforementioned protected assets." |
| | Source: Translated from section 2 para. 1 UVPG |



| prototype reactor | "A nuclear reactor for the scale demonstration of the function and |
|--|--|
| (DE: Prototypreaktor) | performance of a reactor type for industrial applications, e.g., THTR-300 [Thorium-Hochtemperaturreaktor – Thorium High-Tem- perature Reactor; a prototype pebble-bed reactor power plant in Hamm-Uentrop]. Also 'demonstration reactor.'" |
| | Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| proxy (DE: <i>Proxy</i>) | "A proxy variable (from Latin proximus, 'the next'), or a 'proxy' for short, is a quantitative substitute variable that can, by means of a transfer function, provide information about another quantitative variable. This cannot usually be measured objectively, [] [relia- bly,] and/or with a reasonable amount of effort." Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| quality check (DE: <i>Quality Check</i>) | "A check of the quality of test objects according to audit objectives and on the basis of quality evaluation criteria." Source: Translated from German BGE glossary (BGE definition) |
| quality gate (DE: <i>Quality Gate</i>) | "Point in the course of a process at which predefined approval cri- teria are used to decide on the release of the next project step." Source: Translated from German BGE glossary (BGE definition) |
| quality gate approval crite- rion (DE: Quality Gate-Passierkrite- rium) | "Criterion used for an approval decision of a quality gate." Source: Translated from German BGE glossary (BGE definition) |
| radiation protection labora- tory (DE: Strahlenschutzlabor) | "At a radiation protection laboratory, samples are prepared and evaluated using various measurement procedures." Source: Translated from German BGE glossary (BGE definition) |
| radioactive contamination (DE: Kontamination) | "Unintended or undesired presence of substances containing one or more radionuclides." Source: Translated from Section 5 para. 21 StrlSchG |



| radioactive material | "Radioactive materials (nuclear fuel and other radioactive sub- |
|--|---|
| (DE: <i>Radioaktive Stoffe</i>) | stances) are all materials containing one or more radionuclides and whose activity or specific activity [] cannot be disregarded []." |
| | Source: Adapted and translated from section 2 para. 1 AtG |
| radioactive waste (DE: <i>Abfälle, radioaktive</i>) | "Radioactive substances in the sense of section 2 para. 1 of the Atomic Energy Act [Atomgesetz – AtG], which have to be properly disposed of according to section 9a AtG." |
| | Source: BASE (2025b) |
| radioactivity (DE: <i>Radioaktivität</i>) | "The property of a nuclide to convert into another nuclide or to change its state spontaneously or when induced, emitting energy in the process." |
| | Source: Translated from German BGE glossary (BGE definition) |
| radionuclide (DE: <i>Radionuklid</i>) | "An unstable nuclide that transforms into another nuclide through radioactive decay." |
| | Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| radionuclide inventory (DE: <i>Radionuklidinventar</i>) | "The radionuclides and corresponding activities that are contained in a specific system, e.g. a waste package (a unit consisting of a waste product and waste container for final disposal) or in an em- placement chamber." |
| | Source: Translated from BASE (2025a) |
| recovery | "The unplanned retrieval of radioactive waste from a repository." |
| (DE: <i>Bergung</i>) | Source: Translated from section 2 no. 4 StandAG |
| release of radioactive sub- stances | "Escape of radioactive substances from the planned enclosures into the facility or the environment." |
| (DE: Freisetzung radioaktiver Stoffe) | Source: BASE (2025b) |



| relevance aspects (DE: <i>Relevanzaspekte</i>) | "The relevance aspects of the consideration criteria set out in sec- tion 7 para. 4 no. 1 to 3 of the Repository Safety Investigation Or- dinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiUntV] (relevance to safety, current knowledge, potential for gaining knowledge)." |
|--|---|
| | Source: BGE definition according to section 7 para. 4 no. 1 to 3 EndlSiUntV |
| relevance to safety (general and local-specific) (DE: Bedeutung für die Sicher- heit (generell und lokalspezi- fisch)) | "The suitability of a [representative preliminary safety analyses (repräsentative vorläufige Sicherheitsuntersuchungen –)] rvSU-cri- terion for spatially narrowing down areas is classified based on the general and local-specific relevance of criteria to repository safety. General relevance indicates whether a criterion is generally suita- ble for distinguishing between areas of the same host rock type from a safety perspective. Local-specific relevance indicates whether a criterion is suitable for spatially narrowing down a spe- cific area." |
| | Source: Translated from BGE (2023/3, p. 8) (BGE definition) |
| relevant exposure pathway (DE: <i>Relevanter Exposi-</i> <i>tionspfad</i>) | "Of the possible pathways of radioactive substances from dis- charge from a plant or facility via a dispersion or transport process to human radiation exposure, those that, according to current knowledge, can contribute significantly to human radiation expo- sure either by incorporation (via food chains), by inhalation or by external irradiation are considered relevant." |
| | Source. Translated from DIS 0. J.a |
| removal from radiation pro- tection areas (DE: Herausbringen aus Strah- lenschutzbereichen) | "The removal of objects from radiation protection areas that de- monstrably comply with the requirements of section 58 of the Ra- diation Protection Ordinance [Strahlenschutzverordnung – StrlSchV]." |
| | |
| repository (DE: <i>Endlager</i>) | "Site for the safe and maintenance-free storage for an unlimited period of time of hazardous materials in deep geological for- mations." |
| | Source: BfS (o. J.b) |



| repository area | "The area of rock in which a repository system is implemented or is to be implemented." |
|---|---|
| | Source: Translated from section 2 no. 12 StandAG |
| repository mine (DE: <i>Endlagerbergwerk</i>) | "The repository mine is the geological disposal facility used to re- ceive radioactive waste materials and emplace them in the host rock. It can be subdivided into multiple areas and components, in- cluding, in particular, the surface access points, the infrastructure areas, and the emplacement areas." Source: Translated from German BGE glossary (BGE definition) |
| repository system type 1 and type 2 (DE: Endlagersystem Typ 1 und Typ 2) | "A repository system effects a safe containment of radioactive waste through the combined action of various components and in- cludes the repository mine, the essential and further barriers, and the geological strata surrounding or overlying the repository mine and the barriers up to the surface, insofar as they contribute to the safety of the repository (see section 2 no. 11 StandAG). In reposi- tory system type 1, the effective containment zone [ein- schlusswirksamer Gebirgsbereich – ewG] forms the essential bar- rier; in repository system type 2, the essential barriers consist of technical and geotechnical components (BGE 2022/1, p. 27ff)." Source: Translated from German BGE glossary (BGE definition) according to section 2 no. 11 StandAG as well as translated from BGE (2022/1, p. 27ff) |
| repository-related document (DE: <i>Unterlage mit Endla-</i> <i>gerbezug</i>) | "Document that can serve during the planning, exploration, con- struction/conversion, and operation, including decommissioning, of federal facilities for the final disposal of radioactive waste as proof, evidence, or confirmation." Source: Translated from BGE (2022/8, p. 9) (BGE definition) |



representative preliminary Safety analyses (rvSU)

(DE: repräsentative vorläufige Sicherheitsuntersuchungen (rvSU)) "In accordance with section 27 para. 1 of the Repository Site Selection Act [Standortauswahlgesetz – StandAG], the key objective of the representative preliminary safety analyses [repräsentative vorläufige Sicherheitsuntersuchungen –] (rvSU) is to assess the extent to which the safe containment of radioactive waste can be expected using the geological conditions at the site. The contents of the rvSU are specified in Repository Safety Requirements Ordinance [Endlagersicherheitsanforderungsverordnung – EndlSiAnfV] and the Repository Safety Investigation Ordinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiUntV]. 'In further work in accordance with section 14 StandAG, the results of the rvSU form the basis for the development of site-specific exploration programs, the application of the geoscientific weighing criteria, and therefore the identification of favorable siting regions.'"

Source: Translated from BGE definition according to section 27 para. 1 StandAG as well as translated from BGE (2022/1, p. 11)

reprocessing"Process for the chemical separation of irradiated nuclear fuel with
the objective to separate high-level radioactive waste materials
and to recover uranium and plutonium for the production of MOX
[mixed oxide] fuel elements."

Source: Translated from BGE (2022/2, p. 49) (BGE definition)

research reactor"A nuclear reactor for supplying neutrons or isotopes for research
and medical and/or industrial applications, e.g., FRM II [For-
schungsreaktor München II – Research Reactor Munich II; a re-
search reactor at the Heinz Maier-Leibnitz Zentrum (MLZ) in
Garching, near Munich]."

Source: Translated from BGE (2022/2, p. 47) (BGE definition)

result report"Factual, concise, precise presentation of research results. Re-
ports concentrate on the results achieved and only briefly present
the methodological approach. The course of the research is not
discussed."

Source: Translated from Meyer (2009)

| retrievability | "The planned technical possibility of removing emplaced contain- |
|----------------------|--|
| (DE: Rückholbarkeit) | ers of radioactive waste during the operational phase." |
| | Source: Translated from section 2 no. 3 StandAG |



| (DE: Reversibilität) | "The possibility of reversing in the ongoing Site Selection Proce- dure to allow for correction of errors." |
|--|--|
| | Source: Translated from section 2 no. 5 StandAG |
| robustness (DE: <i>Robustheit</i>) | "The insensitivity of safety features of the repository system and its barriers to internal and external influences and disruptions." Source: Translated from section 2 no. 9 EndlSiAnfV |
| rough estimate (DE: Überschlägige Abschät- zung) | "A simplified but technically comprehensible and realistic estimate that is required either to simplify complex relationships or due to a lack of specific input variables." Source: Translated from BGE (2022/2, p. 49) (BGE definition) |
| rvSU criteria (DE: <i>rvSU-Kriterien</i>) | "The criteria derived from the requirements of the Repository Site Selection Act [Standortauswahlgesetz – StandAG], Repository Safety Requirements Ordinance [Endlagersicherheitsanforder- ungsverordnung – EndlSiAnfV], and Repository Safety Investiga- tion Ordinance [Endlagersicherheitsuntersuchungsverordnung – EndlSiUntV], which are used to evaluate other areas and ulti- mately to spatially narrow them down in the representative prelimi- nary safety analyses [repräsentative vorläufige Sicherheitsunter- suchungen –] (rvSU). All rvSU criteria used in the rvSU are sum- marized in host rock-specific criteria catalogs." |
| safe containment (DE: Sicherer Einschluss) | "This is defined by section 4 of the Repository Safety Require- ments Ordinance [Endlagersicherheitsanforderungsverordnung – EndlSiAnfV] such 'that, as far as possible, the radionuclides from the radioactive waste remain [within the essential barriers] at the location of their original emplacement." Source: Translated from German BGE glossary (BGE definition) according to section 4 para 4 EndlSiAnfV |
| safeguards (DE: <i>Safeguards</i>) | See "Nuclear material accountancy and control". |



| safety case (DE: <i>Safety Case</i>) | "A collection of arguments and evidence in support of the safety of a facility or activity." |
|---|---|
| | Source: IAEA (2022) |
| safety concept (DE: Sicherheitskonzept) | "A safety concept must describe how the aim of concentration and safe confinement of the radioactive wastes pursuant to section 4 para. 1 is to be achieved. In this context, the entire repository sys- tem during construction, operation and decommissioning as well as during the assessment period shall be taken into account." Source: Translated from section 10 para. 1 EndlSiAnfV |
| safety function (DE: <i>Sicherheitsfunktion</i>) | "A feature of a component of the repository system or a process taking place within the repository system that fulfills the safety-rel- evant requirements for a safety-related system or subsystem or for an individual component." Source: Translated from section 2 no. 8 EndlSiAnfV |
| safety requirements (DE: Sicherheitsanforder- ungen) | "The provisions that are to be adopted in the form of an ordinance pursuant to section 26 para. 3 and that specify the safety level that a repositoriy for high-level radioactive waste in deep geological formations must meet in order to fulfill the requirements of nuclear legislation." (section 2 para. 15 StandAG) "The requirements to be defined include, in particular: requirements for the protection against damage caused by ionizing radiation; requirements concerning retrievability and to enable recoverability; requirements concerning the safety concept of the repository for the operating and the post-closure phases, including its gradual optimization." (section 26 para. 3 no. 1 to 3 StandAG) |
| safety reserve (DE: Sicherheitsreserve) | "A 'supplement' to a requirement that increases the robustness of the repository system's safety." Source: Translated from German BGE glossary (BGE definition) |



| safety-oriented integrated management system | "The interlinking of existing management systems in the Site Se- lection division at an overarching level. It serves to identify and re- |
|--|---|
| (DE: Sicherheitsgerichtetes In- tegriertes Management- system) | solve redundancies and promote possible synergies with a view to optimizing the Site Selection Procedure as a large-scale project within the BGE. At the same time, the safety-oriented integrated management system [sicherheitsgerichtetes Integriertes Manage- mentsystem –] (sgIMS) includes a definition of the existing level of safety and allows this level to be measured and continually im- proved." |
| | Source: Translated from German BGE glossary (BGE definition) |
| salt diapir | See "salt stock". |
| (DE: Salzdiapir) | |
| salt dome | "Salt stock or salt diapir with a dome-like exterior." |
| (DE: Salzdom) | Source: Translated from German BGE glossary (BGE definition) |
| salt stock (DE: <i>Salzstock</i>) | "The term salt stock or salt diapir refers to salt structures that have risen up from what were originally flat-lying salt layers under tec- tonic influence and have broken through overlying strata." |
| | Source: Translated from German BGE glossary (BGE definition) |
| salt table (DE: <i>Salzspiegel</i>) | "A horizontal surface produced by the leaching activity of ground- water on salt deposits, especially salt stocks. Residual rock (cap rock []) generally lies on top of the [salt table] as a dissolution residue." |
| | Source: Translated from Murawski & Meyer (2010, p. 142f.) |
| science-based work (DE: Wissenschaftsbasiertes Arbeiten) | "Science-based work is underpinned by the ongoing determination and consideration of the current state of the art of science and technology. Early uptake of new scientific findings, technical inno- vations, and societal changes allows knowledge gaps to be identi- fied and closed by means of research." |
| | Source: Translated from BGE (2020/7, p. 35) (BGE definition) |



| seismic survey (DE: <i>Seismik</i>) | "A technique used in applied geophysics whereby' mechanical ex- citement on the surface or in a borehole (e.g. by a hammer blow, small explosions, or vibrations at specific frequencies) produces 'elastic waves in the earth crust that propagate in the individual rock strata' and are refracted and reflected 'due to the different physical characteristics of the strata.' 'The waves are recorded [] using geophones' or hydrophones before being processed (see "processing") and interpreted." |
|---|---|
| | Source: Adapted and translated from Murawski & Meyer (2010, p. 151) |
| SEWD guideline IT SK III (DE: SEWD-Richtlinie IT SK III) | "Guideline setting out 'unified specifications' regarding the 'as- sumed attack scenarios' and 'security measures to be adopted' in order to 'ensure a uniform security level' of 'nuclear facilities [] against IT attacks." |
| , | Source: Translated from BASE (2022) |
| Site Selection Procedure (DE: Standortauswahlverfah- ren) | "In accordance with section 9a para. 3 clause 1 of the Atomic Energy Act [Atomgesetz – AtG], the Site Selection Procedure aims to identify a site for a final disposal facility in the Federal Republic of Germany providing the best possible safety for domestically pro- duced high-level radioactive waste by means of a participative, science-based, transparent, self-questioning, and learning pro- cess." Source: Translated from section 1 para. 2 StandAG |
| sites (DE: <i>Standorte</i>) | "The areas that are to be identified in accordance with section 16 para. 2. These are located within siting regions and are eligible for underground exploration in order to determine their suitability as a repository site." Source: Translated from section 2 para. 20 StandAG |
| siting regions (DE: <i>Standortregionen</i>) | "The areas that are to be identified pursuant to section 14. These are located in the sub-areas and are eligible for surface explora- tion in order to identify potentially suitable repository sites in these regions." Source: Translated from section 2 no. 19 StandAG |



| socio-economic potential analysis | "An instrument for determining the socio-economic status quo in affected siting regions in the interests of the local population vis-à- |
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| (DE: Sozioökonomische Po- tenzialanalyse) | vis the project sponsor. Its results are then to be taken into ac- count when weighing up siting regions respectively sites with equally good suitability with regard to safety aspects, and in each case subordinate to the safety aspects. Lastly, the results provide indications for the future compensation of socio-economic disad- vantages of the region that ultimately provides the site and are therefore associated with the fairest possible distribution of bur- dens." |
| | Source: Translated from K-Drs. 268, p. 352 |
| specific activity (DE: <i>Spezifische Aktivität</i>) | "The ratio of the activity of a radionuclide to the mass of the mate- rial in which the radionuclide is distributed. In solid radioactive sub- stances, the reference mass to determine the specific activity equals the mass of the body or object which is inseparable from the radioactivity when used as intended. For gaseous radioactive substances, the reference mass equals the mass of the gas or the mix of gases." |
| | Source: Translated from section 1 para. 17 StrlSchV |
| strategic environmental as- sessment (DE: Strategische Umwelt- prüfung) | "The strategic environmental assessment [Strategische Umwelt- prüfung – SUP] complements the environmental impact assess- ment [Umweltverträglichkeitsprüfung – UVP]. The difference be- tween the two is that an SUP is carried out at an earlier stage than an UVP. While an UVP is not carried out until an environmentally relevant project enters the approval process, an SUP is carried out at the planning stage because important decisions relating to the environment often have to be taken in the context of preparatory plans and programmes." Source: Translated from BMUV (o. J.) |
| stratigraphy (DE: <i>Stratigraphie</i>) | "A branch of geological sciences that sorts rocks according to their chronological formation, considering all of their inorganic and or- ganic characteristics and contents, and establishes a timescale for dating geological processes and events. [Stratigraphy] therefore forms the basis for reconstructing the history of Earth and life but also, crucially, for questions of regional geology." |
| | Source: Translated from Murawski & Meyer (2010, p. 159); see also Grotzinger & Jordan (2017, p. 745) |



| sub-areas (DE: <i>Teilgebiete</i>) | "The areas that are to be identified pursuant to section 13 and that can be expected to provide favorable geological conditions for the safe disposal of high-level radioactive waste." |
|--|---|
| | Source: Translated from section 2 no. 18 StandAG |
| subrosion (DE: Subrosion) | "Underground leaching of soluble rocks, especially salts, by groundwater. — This underground leaching can result in subsid- ence of the overlying rock, such that a depression (a subrosion de- pression [or sinkhole]) forms on the surface." Source: Translated from Murawski & Meyer (2010, p. 164) |
| subsystem (DE: <i>Teilsystem</i>) | "Subsystems of a repository are characterized by the fact that the areas and components they contain have similar principal func- tions and similar operating sequences. In some circumstances, an influence in the area of a subsystem can be expected to have sim- ilar effects on the repository's operational safety, which is why the same safety systems and technical and organizational measures can be considered within a subsystem." Source: Translated from BGE (2022/2, p. 48) (BGE definition) |
| surface contamination (DE: Oberflächenkontamina- tion) | "Contamination of a surface with radioactive substances, including the non-fixed and fixed activity that has penetrated via the surface. The unit of the measured value of the surface contamination shall be the activity for surface areas in becquerels per square centime- tre." Source: Translated from section 1 para. 10 StrlSchV |
| surface installations (DE: <i>Tagesanlagen</i>) (DE: Übertägige Anlagen) | "Operative sections of a mine that are located above ground." Source: Translated from BGE (2021/3, p. 6) (BGE definition) |
| technical and geotechnical barriers | "Technically 'engineered units that inhibit or prevent the migration of radionuclides." |
| (DE: Technische und geotech- nische Barrieren) | Source: Translated from section 2 para. 8 StandAG |



| technical facility | "[], the term technical facility refers summarily to mechanical |
|---|---|
| (DE: Technische Einrich- tungen) | components and systems, to electrical and instrumentation and control equipment and components as well as to the structural components (buildings, partial structures, structural systems and components)." |
| | Source: KTA 1403, p. 5 |
| test certificate (based on KTA 1202) | "Documentation of the execution and the results of a quality check." |
| (DE: Prüfprotokoll) | Source: Translated from German BGE glossary (BGE definition) |
| test object (based on KTA 1401) | "Evalution of a report (e.g. result report, fundamental report, pro- gress of work, fundamental technical input)." |
| (DE: Prüfobjekt) | Source: Translated from German BGE glossary (BGE definition) |
| testing schedule (based on KTA 1202) | "Overview that summarizes and documents planned and executed quality checks for a document." |
| (DE: <i>Prüfplan</i>) | Source: Translated from German BGE glossary (BGE definition) |
| transport and storage con- tainers (DE: <i>Transport- und Lagerbe- hälter</i>) | "A collective term for containers that are approved for the transport of radioactive waste and that additionally have time-limited authori- zation for the dry interim storage of such waste." |
| | Source: Translated from BGE (2022/2, p. 49) (BGE definition) |
| transport model (DE: <i>Transportmodell</i>) | "Mathematical model of radionuclide transport over the evaluation period." |
| | Source: Translated from BGE (2022/2, p. 49) (BGE definition) |
| trial operation (DE: <i>Probebetrieb</i>) | "The operation of the repository must have been successfully trialled before radioactive waste is first accepted for the purpose of final disposal' (section 16 para. 1 of the Repository Safety Re- quirements Ordinance [Endlagersicherheitsanforderungsver- ordnung – EndlSiAnfV]). Operation is trialled 'cold', i.e. with reposi- tory packages or containers that are not loaded with radioactive materials." |
| | See "Cold testing". |
| | Source: BGE definition, see also section 16 para. 1 EndlSiAnfV |



| uncertainties (DE: <i>Ungewissheiten</i>) | "Uncertainty is a lack of certainty and/or information to describe the system and therefore to assess potential negative conse- quences. Uncertainties can arise both due to a lack of knowledge [] and due to natural variability." Source: Translated from BGE (2022/2, p. 49) (BGE definition) |
|---|--|
| verbal-argumentative (DE: <i>verbalargumentativ</i>) | "As part of the identification of siting regions, a verbal-argumenta- tive approach aggregates qualitative, semiquantitative, and quanti- tative evaluations, establishes contentual linkages, and draws logi- cal conclusions in order to reach an evaluation of a set of facts. A verbal-argumentative process is therefore distinguished from purely quantitative model calculations." |
| vitrified waste (DE: Verglaste Abfälle) | Source: Translated from German BGE glossary (BGE definition) "In reprocessing, spent fuel elements are chemically dissolved into their individual components using nitric acid. Uranium and pluto- nium are recovered and used to produce new fuel elements. The remainder of the [] [higher actinides and fission products, e.g.,] cesium, strontium, etc., are [calcinated and] bound within liquid glass [which is then poured into a steel canister] []. The finished product is referred to as a glass canister and falls within the cate- gory of high-level radioactive waste." Source: Translated from BASE (2025a) |
| waste inventory (DE: <i>Abfallinventar</i>) | "The entirety of the high-level radioactive waste that is to be disposed." Source: Translated from BGE (2022/2, p. 46) (BGE definition) |



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