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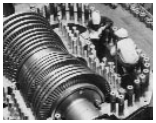

ILK Statement

on BMU Paper „Taking on Responsibility: Implementing the Consensus Agreement on Disposal“

Für deutsche Fassung bitte umdrehen!

July 2007
No.: ILK-30 E

Foreword

The International Committee on Nuclear Technology (Internationale Länderkommission Kerntechnik, ILK) was established by the three German states of Baden-Württemberg, Bavaria and Hesse in October 1999. It currently consists of 9 scientists and experts from Finland, France, Germany, Switzerland and USA. The ILK acts as an independent and objective advisory body to the three German states on issues related to the safety of nuclear facilities, radioactive waste management and the risk assessment of the use of nuclear power. In this capacity, the Committee's main goal is to contribute to the maintenance and further development of the high, internationally recognised level of safety of nuclear power plants in the southern part of Germany.

The ILK has already addressed the disposal of radioactive waste on several occasions, lastly in its recommendation on the revitalization of the repository projects Gorleben and Konrad (ILK-25) from November 2005. However, faced with a new BMU document which among other things makes suggestions on the further proceeding on the disposal of radioactive waste, the ILK has again deliberated this topic. In the current publication, which was adopted at the 46th ILK meeting held on July 3rd, 2007 in Munich, the ILK presents the results of its deliberations. The BMU paper does not prove suitable to make the issue of final disposal amenable to a timely solution, instead, it is rather set out to keep it unresolved in the longer term. Therefore, the ILK repeats its recommendation from ILK-25, to lift the Gorleben moratorium as fast as possible and to start the elaboration of a total system performance analysis immediately.

The chairman

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1 Introduction

The BMU presented a paper entitled *"Taking on responsibility: Implementing the Consen-sus Agreement on Disposal"* [1] which among other things makes suggestions on the further procedure for the disposal of high-level radioactive waste. With regard to heat-generating (high-level radioactive) waste, the paper argues as follows:

- The Gorleben site had not been selected on the basis of requirements that correspond to the current international state-of-the-art
- For this reason, a new selection procedure meeting these requirements should be carried out
- Aim of this procedure is to find the best possible site
- For this purpose, a maximum of two further sites – possibly in different host rocks – should be explored in addition to Gorleben
- The procedure should be carried out in several steps (dates given by BMU in [1], in the past these have been consistently turned out as being too short)

  - Decision on selection procedure (end of 2007)
  - Determination of promising options based on existing data (late 2010)
  - Geological exploration of the selected sites (from above ground) (2015)
  - In-depth geological (underground) exploration of the selected sites (2020)
- Since Gorleben has already been largely investigated, the procedure can be aborted in-process in favor of Gorleben if *"it can no longer be expected that one or several alternative sites with a higher safety level than Gorleben forcibly present themselves"* [1].

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2 Assessment of BMU Paper

This line of argumentation is full of incorrect factual claims:

1. There are no international requirements on the selection of repository sites. International requirements on the safety of repositories, e.g. [2], refer to characteristics of the repository and to the methods with which the safety of the repository is achieved and verified. Recommendations, however, exist for site selection, e.g. [3]. These provide a lot of room for interpretation for the individual case. This represents an appropriate approach, since the safety of a repository depends on its characteristics and not on the procedure with which it was selected.

2. The IAEA document [2] cited in the BMU paper does not represent requirements on the selection procedure but instead on the operational and post-operational phase of a repository (*„This publication establishes requirements to ensure the radiological safety of the geological disposal of radioactive waste during the operational period and especially in the post-closure period"*).

3. Although it makes sense – as was the case for Gorleben – to choose a site from a number of conceivable sites, this is neither the only recommended possibility for proceeding nor is it a requirement. [3] explicitly states: *„A suitable disposal site may be identified either by narrowing the field of candidates from a number of sites or by objectively evaluating one or more designated potential sites"*. Applied to Gorleben, this means: the site was originally determined according to the first method. If one considers the further procedure after two decades of successful exploration, it is only wise to mark Gorleben as a *"designated potential site"* – in perfect agreement with the IAEA recommendations.

4. The *"Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management"* (Joint Convention) [4] stipulates: *"Each Contracting Party shall take the appropriate steps to ensure that procedures are established and implemented for a proposed spent fuel management facility: .."*. It is not stipulated by the Convention how these steps, which are to be taken by the contracting parties, are defined in detail. The Convention does not at all mention the method of selecting a suitable site. At the second review meeting of this Convention the establishment of transparent criteria and of a process for the site selection, following the practice in many other countries [5], was called a challenge for Germany. It can not be derived from this, however, that a process such as proposed by the BMU should be established.

5. The idea of a best possible site is an invention by the BMU/BfS. The quotation mentioned in point 3 above continues as follows: *"For either method it is not essential to locate the best possible site, but to provide an overall disposal system of natural and engineered barriers which can be convincingly shown to comply with safety and environmental protection requirements."* This passage also concisely provides the justification why a best possible site is a fiction. Every repository is a complex system with different characteristics and measures that must be adapted appropriately. It doesn't make any sense to try to construe a ranking of sites characterized by different parameters if the sites all indicate a safe long-term inclusion of waste.

6. Accordingly, there are no international criteria on how to determine the best possible site from among several possible ones. All criteria are directed towards establishing whether a site is suitable for construction of a safe repository at this site. Germany, too, has criteria of this kind. They were adopted in 1983 by the RSK and have been updated several times on behalf of the BMU by the GRS. However, none of the updates has been implemented.

7. The phrase *"forcibly present themselves"* can only be interpreted as one alternative having very definite advantages. According to the above-mentioned explanations, this could only occur if Gorleben were to display deficiencies, which the exploratory results to date do not suggest in any way. Therefore, if one wants to determine whether a site *"forcibly presents itself"*, it would be logical to bring about clarity about the suitability of the Gorleben site as soon as possible. The necessary Total Systems Performance Assessment (TSPA) and the remaining exploratory investigations can be finalized within a few years. According to the BMU, the exploration of Gorleben would only be continued in the phase beginning 2015.

8. Without further site exploration at Gorleben, the announcement that the procedure could be aborted in favor of Gorleben during the various phases is without substance. As long as a better state of knowledge has not been reached for the alternative sites than it is currently the case for Gorleben, their suitability cannot be proven, much less can any kind of attempt of comparison with Gorleben be undertaken. The procedure would only be aborted if the alternative sites prove to be unsuitable. Given sufficient care, this cannot be expected in the early phases of their selection. Thus, the BMU suggestion translates into an extensive or complete exploration of 2 to 3 sites. This would require further investments in the magnitude of billions of Euros in addition to the currently already approx. 20 million € per year spent on keeping the Gorleben site open.

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3 Conclusion by ILK

In summary, the BMU paper does not prove suitable to make the issue of the disposal of high-level radioactive waste amenable to a timely solution; instead, it is rather set out to keep it unresolved in the longer term. It is to be expected that its short-term impact will be to bar any progress in the current period of legislation.

Therefore, the ILK repeats its previous recommendation [6] that the moratorium on the underground exploration of the Gorleben site is to be lifted as soon as possible and the elaboration of a TSPA ("Total Systems Performance Assessment") for the Gorleben project shall be started immediately.

4 Literature

[1] BMU (Bundesumweltministerium): *"Verantwortung übernehmen: Den Endlagerkonsens realisieren"* ["Taking on Responsibility: Implementing the Consensus Agreement on Final Disposal"], Berlin, 18.09.2006 [German version only]

[2] IAEA (International Atomic Energy Agency): *"Geological Disposal of Radioactive Waste"*, Safety Requirements No. WS-R-4, Vienna, 2006

[3] IAEA (International Atomic Energy Agency): *"Siting of Geological Disposal Facilities"*, IAEA Safety Series No. 111-G-4.1, Vienna, 1994

[4] IAEA (International Atomic Energy Agency): "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management", Vienna, 05.09.1997

[5] IAEA (International Atomic Energy Agency): *"Country Group 5 - Rapporteur's Report: Germany"*, Vienna, 2005, Link: http://www.bmu.de/files/pdfs/allgemein/appli cation/pdf/rapporteursbericht_deutschland.pdf

[6] ILK (Internationale Länderkommission Kerntechnik): *"ILK Recommendation on the Revitalisation of the Repository Projects Gorleben and Konrad"*, ILK-25, Augsburg, November 2005

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9. **Antero Tamminen, Finland**
   Former long-time Technical Manager at Loviisa NPP, Finland

(Members are listed in alphabetical order)

ILK-01 ILK Statement on the Transportation of Spent Fuel Elements and Vitrified High Level Waste (July 2000)

ILK-02 ILK Statement on the Final Storage of Radioactive Waste (July 2000)

ILK-03 ILK Statement on the Safety of Nuclear Energy Utilisation in Germany (July 2000)

ILK-04 ILK Recommendations on the Use of Probabilistic Safety Assessments in Nuclear Licensing and Supervision Processes (May 2001)

ILK-05 ILK Recommendation on the Promotion of International Technical and Scientific Contacts of the Nuclear Safety Authorities of the German States (October 2001)

ILK-06 ILK Statement on the Draft Amendment dating from July 5, 2001 to the Atomic Energy Act (October 2001)

ILK-07 ILK Statement on Reprocessing of Spent Fuel Elements (November 2001)

ILK-08 ILK Statement on the Potential Suitability of the Gorleben Site as a Deep Repository for Radioactive Waste (January 2002)

ILK-09 ILK Statement on the General Conclusions Drawn from the KKP 2 Incidents associated with the Refueling Outage of 2001 (May 2002)

ILK-10 ILK Statement on the Handling of the GRS Catalog of Questions on the "Practice of Safety Management in German Nuclear Power Plants" (July 2002)

ILK-11 ILK Recommendation on Performing International Reviews in the Field of Nuclear Safety in Germany (September 2002)

ILK-12 Internal ILK-Report on the Intentional Crash of Commercial Airliners on Nuclear Power Plants (March 2003)

ILK-13 ILK Statement on the Proposals for EU Council Directives on Nuclear Safety and on Radioactive Waste Management (May 2003)

ILK-14 ILK Statement on the Recommendations of the Committee on a Selection Procedure for Repository Sites (AkEnd) (September 2003)

ILK-15 ILK Recommendation on the Avoidance of Dependent Failures of Digital I&C Protection Systems (September 2003)

ILK-16 ILK Statement on Sustainability Evaluation of Nuclear Energy and other Electricity Supply Technologies (January 2004)

ILK-17 ILK Statement on Maintaining Competence in the Field of Nuclear Engineering in Germany (March 2004)

ILK-18 ILK Summary Report of the 2nd International ILK Symposium „Harmonisation of Nuclear Safety Approaches – A Chance for Achieving more Transparency and Effectiveness?" (May 2004)

ILK Publications

ILK-19 ILK Statement on the Regulator's Management of the Licensee Self-Assessments of Safety Culture (January 2005)

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ILK-22 ILK Recommendations on Requirements on Updated General Nuclear Regulatory Guidelines in Germany (July 2005)

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ILK-25 ILK Recommendation on the Revitalisation of the Repository Projects Gorleben and Konrad (November 2005)

ILK-26 ILK Statement on the Impacts of the Chernobyl Accident – An Inventory after 20 years (January 2006)

ILK-27 ILK Recommendations on the Further Development of Periodic Safety Reviews in Germany (November 2006)

ILK-28 ILK Report on the Assessment of Nuclear Oversight Activities of the Ministry of Environment, Baden-Württemberg (December 2006)

ILK-29 ILK Statement on BMU Project „Update of Nuclear Regulatory Guidelines" (June 2007)

ILK-30 ILK-Statement on BMU Paper „Taking on Responsibility: Implementing the Consensus Agreement on Final Disposal" (July 2007)

- CD with presentations held at the ILK Symposium "Opportunities and Risks of Nuclear Power" in April 2001
- Proceedings of presentations held at the 2nd ILK Symposium "Harmonisation of Nuclear Safety Approaches – A Chance for Achieving more Transparency and Effectiveness?" in October 2003

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