

# ILK

INTERNATIONALE  
LÄNDERKOMMISSION  
KERNTECHNIK

Baden-Württemberg · Bayern · Hessen



## ILK Statement

on the Proposals for EU Council Directives  
on Nuclear Safety  
and on Radioactive Waste Management

*Für deutsche Fassung bitte umdrehen!*

May 2003

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## 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 is currently composed of 13 scientists and experts from Germany, France, Sweden, Switzerland and USA. The ILK acts as an independent and objective advisory body to the 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 Proposals for EU Council Directives on Nuclear Safety and on Radioactive Waste Management represent a significant contribution towards the further development of the European level of safety. For this reason, the ILK has dealt with this subject comprehensively. The present ILK statement was adopted at the 23<sup>rd</sup> ILK meeting on May 13<sup>th</sup>, 2003 in Munich. Next to a critical appreciation of the proposed directives by the ILK, the present statement focuses on recommendations on what to include in these directives and on how to approach the development of European safety standards and corresponding nuclear oversight processes. The statement thus addresses all those who are involved with the European harmonization of nuclear safety requirements.

The Chairman



Dr. Serge Prêtre

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### ILK - Geschäftsstelle beim Bayerischen Landesamt für Umweltschutz

Bürgermeister-Ulrich-Str. 160  
 D-86179 Augsburg  
 Telefon: +49-173-65 707-11/-10  
 Telefax: +49-173-65 707-98/-96  
 E-Mail: [info@ilk-online.org](mailto:info@ilk-online.org)  
<http://www.ilk-online.org>

## 1 Introduction

On November 6, 2002, the European Commission proposed a package of measures for a common European Community approach to nuclear safety. This package included draft proposals of a directive on the safety of nuclear installations during operation and decommissioning as well as of a second directive on radioactive waste.

According to the Commission the proposal for these directives is based on Article 2(b) of the Euratom Treaty [1] which states that the Community shall “establish uniform safety standards to protect the health of workers and of the general public and ensure that they are applied”. To date no standards on nuclear safety have been implemented by the Commission, but the impending enlargement of the European Union is perceived as the right time to implement such standards. In the view of the Commission “it would be inconceivable to monitor nuclear safety just in the new Member States” - as requested by the European Council in 1999 and 2001 - “but not in the rest of the enlarged Union” [2].

The draft proposals of the two directives were then submitted to the group of experts provided for in Article 31 of the Euratom Treaty [1]. This group put forward its opinion on both directives on December 19<sup>th</sup>, 2002, and their points and criticisms were then incorporated into the two proposed directives [3].

On January 30<sup>th</sup>, 2003, the European Commission adopted the following two proposals:

- Proposal for a Council (Euratom) Directive: Setting out basic obligations and general principles on the safety of nuclear installations [4]
- Proposal for a Council (Euratom) Directive on the management of spent nuclear fuel and radioactive waste [5]

These two proposals will serve as the basis for the present ILK statement. It should be noted that at the time of this writing the proposals have not been finalized and may still be modified.

Before these two directives will be discussed in detail below, the ILK will briefly comment on the procedure shaping the development of these directives. As mentioned above the Commission submitted its initial proposals to the group of experts provided for in Article 31 of the Euratom Treaty [1].

The approach to ask the Article 31 group is, however, controversial. This group of experts with an emphasis on public health according to Article 31 of the Euratom Treaty [1] is appointed by the Scientific and Technical Committee. Its scientific competence at present is in the field of radiation protection. The ILK believes that considerable technical expertise in nuclear safety is essential in setting up these directives. Therefore, the ILK proposes that the Commission should rely on technical advice, provided by, for example, the expertise of the Scientific and Technical Committee and their members with high reputation. If necessary the composition of this committee could be reviewed. It should be noted that the Article 31 group itself suggests in its recommendations of December 19<sup>th</sup>, 2002 to consult with the Scientific and Technical Committee on the two directives. However, the latest information [3] on the future advancement of these directives does not indicate that the Commission will actually follow this advice.

## 2 Directive on the safety of nuclear installations

The main aspects of this directive, as well as the underlying background and possible future proceedings are put forward in the explanatory memorandum and in the preamble [4]. They concern a possible set of common safety standards and requirements for the (national) safety authorities of the current and future member states of the European Union (EU), a system of independent verification and the question of adequate financial resources for decommissioning.

### 2.1 General comments

The work and the approach of the Commission deserves credit for intending to achieve a uniform and high level of safety in nuclear facilities in the current and future member states of the EU. Paragraph (8) of the preamble of the directive states that “nuclear safety measures still vary widely from one member state to another”. In the view of the ILK, the standards and guidelines of the member states are formally different, but the practice of ensuring a level of safety is certainly much more uniform. The competence and obligations of the member states and their safety authorities to license and supervise nuclear installations must be fully maintained and it should be clearly stated that the main responsibility for nuclear safety remains with the operating organisation of each installation.

In the explanatory memorandum's section on existing standards the Commission expresses regret that the Convention on Nuclear Safety [6] only applies to (land based) nuclear power plants and that it would be desirable to broaden the scope to include all nuclear installations. The ILK notes, however, that the basic design of research reactors varies greatly and is very different from those of nuclear power plants. The application to other fuel cycle installations is even more difficult, due to the enormous diversities in their design and operation. It is therefore suggested that the Commission should initially limit its activities to the harmonization of safety standards for nuclear power plants.

## 2.2 Common safety standards and requirements for safety authorities

The goal of the Commission to establish common safety standards for all current and future member states of the EU is an important one and certainly acknowledged by the ILK as a possible step towards achieving the same level of safety of nuclear installations within the EU.

Nevertheless, this call for common standards and common requirements for safety authorities might imply that deficiencies in certain states currently exist. It should be pointed out that all nuclear installations have been licensed within the framework of licensing procedures by the relevant member state authorities. This is partially acknowledged by the Commission in its statement that a system of common standards “should not duplicate what exists already within the member states” [4]. In addition all member states and most of the future member states have signed the Convention on Nuclear Safety [6], thereby adopting a certain framework of standards and procedures.

The ILK does not see a general need to create completely new standards and definitions. The Commission should rather invite the member states to participate very actively in the process leading to the development of harmonized safety standards. Looking at the conclusions of the review meetings under the Convention of Nuclear Safety might be helpful in this respect.

Regarding future proceedings towards common standards, the Commission should use the available surveys of the similarities and the differences of safety standards currently in place within the European Union as a basis. It should not be the task of the Commission to create a new body of rules, instead, existing guidelines should be consolidated, i. e. harmonized. During the intended process of establishing common safety standards, an extensive and formalized dialog with the manufacturers and the licensees is necessary. The whole process of establishing future common standards should be made transparent and published.

The ILK welcomes the approach taken by the Commission in its elaboration on the safety-related requirements to draw upon the work of the International Atomic Energy Agency (IAEA), as well as on the common positions of the licensing authorities within the community (Nuclear Regulators Working Group, NRWG) and on the work of the Western European Nuclear Regulators Association (WENRA). While the Commission regrets that, for example, the IAEA standards “reflect an international consensus, but are not legally binding” [4], this is solely due to a decision

of the members of IAEA. An attempt by the Commission to make certain IAEA standards binding within the member states would provide a good first approach to establish a common set of standards and therefore a common reference framework.

A common reference framework is ascertained by explicitly stating the requirements for safety authorities in articles 3 to 8 and 11 of the directive. The ILK welcomes these provisions, but again, stating these stipulations within a council directive does not necessarily mean that these aspects have not already been dealt with and satisfied, i. e. by the current member states.

The purpose of article 14 relating to the notification of more stringent measures undertaken by individual member states can not be clearly established. It is unclear whether it solely serves to provide information to the Commission or whether it is to be used as a basis for future more stringent measures within the EU.

### 2.3 Independent verification

Provisions for independent verification of the safety authorities in the member states are set forth in article 12 on monitoring of application and in article 13 on reports.

Article 12 stipulates that the member states shall provide the Commission with a list of experts in the field of nuclear safety. The Commission will then select a number of experts to carry out the verification, pending the approval of the experts by the member states where the verification is carried out. The verification results will be forwarded to the member states and will be incorporated by the Commission in a two-yearly report on the safety of nuclear installations within the EU.

The ILK does not see a general need to perform formal verifications or even inspections of the national safety authorities by the Commission or their agents. The Commission does not indicate which process they want to use for their intended verifications. Instead, if monitoring of the activities of the member states and of the compliance with the obligations due to this directive is desired this can, in the opinion of the ILK, be sufficiently established by reports of the member states. A "peer-review", supported by a transparent process and invited by the

member states is also perceived to be a better solution than the intended verification process. Such a peer-review approach would be very similar to the International Regulatory Review Team (IRRT) program of the IAEA. The IRRT program has been acknowledged by the ILK in its recent statement "Recommendation on Performing International Reviews in the Field of Nuclear Safety in Germany" [7]. In this statement, the ILK emphasized the additional benefit for the authority undergoing verification that it will likely undergo a highly useful self-assessment as well.

In the corresponding financial statement of the directive there is a passage pointing out that each verification will be conducted by two experts and will last two days. The ILK points out that an IRRT mission to review a regulatory body comprises a team of 7 or 8 experts and lasts 2 weeks. The approach of the proposed verification process of the Commission is limited in terms of personnel and time when compared with an IRRT mission. This might not support the credibility of this proposed verification process. In addition, if the Commission would want to recruit experts from most or even all member states, there would be a danger that these verifications are not done according to best knowledge and experience, due to the fact that in quite a few member states no nuclear power plants are in operation, while others have decided to phase out nuclear energy.

The reporting system that is to be established within the EU is set forth in article 13 stating that member states should submit an annual report to the Commission on their compliance "with the obligations under this directive and on the safety situation in nuclear installation located in their territory" [4]. These reports are examined in meetings with the member states.

The ILK notes that this approach very much resembles the one adopted within the framework of the Convention on Nuclear Safety [6], which has been signed by all member states of the EU and most of the candidate member states. It therefore appears sensible to interlock the interval and synchronize the content of the reporting system required by the EU with the one used by the Convention on Nuclear Safety by using the same three year reporting interval and generally the same content of the report. The annual reporting interval suggested by the Commission is too short and, due to the high volume of work involved, will produce an unnecessary burden on national authorities. Conceivably the reporting systems of the EU and the Convention on Nuclear Safety could be synchronized in such a way that the planned verification system is initiated with a year's head start over the reporting dates of the Convention on Nuclear Safety. In this way, once the Safety Convention meets, a reviewed report can already be presented by the member states.

At this point in time, the Commission has neither clearly established the objective of these proposed annual reports nor the assessment criteria, for example, in the form of standards or good practices, for the intended examinations with the member states. On the other hand, the Commission currently does not have sufficient technical expertise to decide on its own what to verify and what action to take, so again the experience of existing expert groups or organizations, as mentioned above, seems indispensable. The Commission should acquire the necessary technical expertise for fulfilling its mandate to implement this directive.

## 2.4 Decommissioning

The ILK approves the intention of the Commission that adequate financial resources should be made available to support the safety of nuclear installations, including decommissioning costs. However, the ILK will not specifically comment on this. In the ILK's opinion, the provisions of the annex seem out of context in this directive on nuclear safety.

Concerning the decommissioning of nuclear power plants, the Convention on Nuclear Safety includes an article on the necessity to approve a decommissioning plan before starting any irreversible operation. Such a principle could be included in the directive.

## 3 Directive on radioactive waste management

Apart from the general requirements to be fulfilled by the member states that are designed to ensure the safe management of spent nuclear fuel and radioactive waste, the proposal for a directive provides that each member state should establish a clearly defined national program for radioactive waste management with a timetable comprising in particular the geological disposal of high-level radioactive waste. The member states are required to select suitable disposal sites for high-level radioactive waste by 2008 at the latest and to have the sites operational no later than 2018. For short-lived low- and intermediate-level radioactive waste, the deadline for commissioning of final repositories is 2013. Cooperation solutions for final repositories between member states are envisaged, but no member state is required to accept imports of radioactive waste from other member states. Every three years, each member state shall submit a report to the Commission on the status of radioactive waste management. Furthermore, the Commission encourages the cooperation between national research activities in the field of waste management and intends to propose at a later stage the creation of a joint undertaking for managing and directing research funds.

The ILK shares the view of the Commission that each member state needs to establish a well defined program for radioactive waste management, giving special attention to final disposal, to avoid passing on to future generations the responsibility for disposing of our wastes. The ILK believes that the dates prescribed by the Commission for achieving final disposal especially of high-level radioactive waste seem to be difficult to reach or even unrealistic for some countries, both member states as well as candidate countries, while for other countries it might indeed represent a feasible timeframe. However, these ambitious objectives are useful for making clear how important the problem is and that the identification and licensing of suitable disposal sites should not be delayed. Final disposal is the best option for the management of low- and intermediate-level radioactive waste as well as of high-level waste. Long-term interim storage requires intensive monitoring and maintenance measures leading to radiation exposure of the personnel, and it adds to the total fuel cycle costs. Because low- and intermediate-level waste do not require a cooling down period before final disposal and they can thus be disposed of immediately, there is no need to store them in an interim storage over several years. Some member states (Finland, France, Spain, Sweden, UK) already practice the final disposal of this kind of radioactive waste. Germany will be able to practice it within the time period set by the Commission if, as recommended by the ILK in its statement on the

final storage of radioactive waste from July 2000 [8], the site Konrad is put into operation without further delay. The compliance with the time period suggested by the Commission is also feasible for the final disposal of high-level waste in Germany if the exploratory work at the Gorleben site is continued. However, according to the German federal government it is sufficient for one repository for all types of radioactive waste to be operational from 2030 onwards. In the opinion of the ILK, final repositories used by two or more countries should really represent the exception for countries with very low amounts of radioactive waste given the possibility to join a large project in the region, but it might be difficult to gain public acceptance for such solutions.

The reports on the status of radioactive waste management to the Commission that are to be submitted every three years provide a good opportunity to keep track of each country's progress in this field. These reports provide the basis for the Commission's overall report on the status of radioactive waste management in the European Union which could be also be used for the reporting procedures employed by the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management [9], thereby interlocking and synchronizing the approach of the Commission with the one by the Joint Convention. The lessons learnt from the first review meeting of this Joint Convention in November 2003 should be taken into account.

The ILK welcomes the Commission's intention to encourage the cooperation between countries in the research field related to radioactive waste. Research on partitioning and transmutation should also be included in this research effort as the ILK has already pointed out in its statement on the reprocessing of spent fuel elements from November 2001 [10]. These techniques could reduce waste quantities and shorten the necessary confinement periods in the future.

## 4 Observations and Recommendations by the ILK

The ILK supports the objective to harmonize safety standards in the field of nuclear safety and acknowledges the objective to develop a framework for the management of radioactive waste within the European Union. At the same time, the ILK makes the following observations and recommendations.

### 4.1 Proposal for a Council (Euratom) Directive: Setting out basic obligations and general principles on the safety of nuclear installations

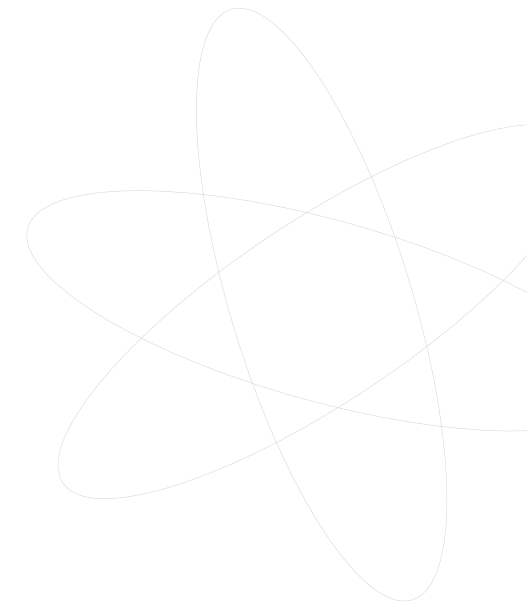
1. The competence and obligations of the member states and their safety authorities to license and supervise nuclear installations must be fully maintained and it should be explicitly stated that the main responsibility for nuclear safety remains with the operating organisation of each installation.
2. The ILK does not see a general need to create completely new standards and definitions. The Commission should rather invite the member states to participate very actively in the process leading to the development of harmonized safety standards. Looking at the conclusions of the review meetings under the Convention of Nuclear Safety might be helpful in this respect. The Commission should use the available surveys of the similarities and the differences of safety standards currently in place within the European Union as a basis for its future proceedings regarding common standards. The intended process of establishing future common standards should be made transparent and published.
3. Because of basic design differences in the various nuclear installations (i. e. nuclear power plants, nuclear research reactors and fuel cycle facilities), the ILK suggests that the Commission should initially limit its activities to the harmonization of safety standards for nuclear power plants.

4. The Commission should take note that the scientific competence of the Article 31 group at present is in the field of radiation protection according to Article 30 of the Euratom Treaty. The ILK believes that considerable technical expertise in nuclear safety is essential. Therefore, the ILK proposes that the Commission should rely on technical advice to establish harmonized standards, provided by, for example, the expertise of WENRA or the Scientific and Technical Committee of the Euratom Treaty. The Commission should acquire the necessary technical expertise for fulfilling its mandate to implement this directive.
5. There is no need to perform formal inspections of the national safety authorities by the Commission or their agents. A "peer-review", supported by a transparent process and invited by the member states is a better solution. If monitoring of the activities of the member states is desirable it should be based on the national reports. Independent of the verification process, it should be ensured that the experts have excellent scientific-technical expertise and considerable practical experience.
6. The frequency of annual reporting on the safety situation in nuclear installations in member states is judged by the ILK as being too high and will produce an unnecessary burden on national authorities. Since a very similar reporting system is required by the Convention on Nuclear Safety every 3 years, these two reporting systems should be synchronized by using the same interval and generally the same content.

#### 4.2 Proposal for a Council (Euratom) Directive on the management of spent nuclear fuel and radioactive waste

1. The ILK believes that the dates prescribed by the Commission for achieving final disposal especially of high-level radioactive waste seem to be difficult to reach or even unrealistic for some countries, both member states as well as candidate countries, while for other countries it might indeed represent a feasible timeframe.
2. In the opinion of the ILK, final repositories shared by two or more countries represent a reasonable solution for countries with very low amounts of radioactive waste given the possibility to join a large project in the region.

3. The reports on the status of radioactive waste management could also be used for the reporting procedures employed by the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management, thereby interlocking and synchronizing the approach of the Commission with the one by the Joint Convention. The lessons learnt from the first review meeting of this Joint Convention in November 2003 should be taken into account.
4. While the Commission's intention to encourage the cooperation between countries in the research field related to radioactive waste is welcomed by the ILK, research on partitioning and transmutation should also be included in this research effort as has already been pointed out by the ILK in its recent statement on the reprocessing of spent fuel elements.





## Literature

- [1] Treaty establishing the European Atomic Energy Community (Euratom), March 25<sup>th</sup>, 1957
- [2] European Commission: Directorate-General for Energy and Transport: "Towards a community approach in nuclear safety", Memo, Brussels, November 6<sup>th</sup>, 2002
- [3] Communication from Commissioner Mrs de Palacio to the Commission, Brussels, January 30<sup>th</sup>, 2003
- [4] Proposal for a Council (Euratom) Directive: Setting out basic obligations and general principles on the safety of nuclear installations, Revision January 30<sup>th</sup>, 2003
- [5] Proposal for a Council (Euratom) Directive on the management of spent nuclear fuel and radioactive waste, Revision January 30<sup>th</sup>, 2003
- [6] International Atomic Energy Agency (IAEA): "Convention on Nuclear Safety", June 17<sup>th</sup>, 1994
- [7] Internationale Länderkommission Kerntechnik (ILK): "ILK Recommendation on Performing International Reviews in the Field of Nuclear Safety in Germany", September 2002, No. ILK-11
- [8] Internationale Länderkommission Kerntechnik (ILK): "ILK Statement on the Final Storage of Radioactive Waste", July 2000, No. ILK-02
- [9] International Atomic Energy Agency (IAEA): "Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management", September 5<sup>th</sup>, 1997
- [10] Internationale Länderkommission Kerntechnik (ILK): "ILK Recommendation on Reprocessing of Spent Fuel Elements", November 2001, No. ILK-07

1. **Prof. Dr. George Apostolakis, USA**  
Professor of Nuclear Engineering and Engineering Systems at the Massachusetts Institute of Technology (MIT) in Cambridge, USA
2. **Prof. Dr. phil., Dr.-Ing. E.h. Adolf Birkhofer, Deutschland**  
Managing Director of ISaR Institute for Safety and Reliability GmbH  
Holder of the Chair for Reactor Dynamics and Reactor Safety at the Technical University of Munich
3. **Ms. Annick Carnino, France**  
Former Director of the Division of Nuclear Installations Safety at the IAEA
4. **Prof. Dr.-Ing. Dr.-Ing. E. h. Dr. techn. h. c. Josef Eibl, Germany**  
Former Director of the Institute for Massive Construction and Building Material Technology at the University Karlsruhe
5. **Prof. Dr.-Ing. habil. Hans Dieter Fischer, Germany**  
Holder of the Chair for Communication Theory at the Ruhr-University Bochum
6. **Ing. Bo Gustafsson, Sweden**  
Managing Director of SKB International Consultants AB founded in 2001 as the international branch of SKB
7. **Prof. Dr. rer. nat. habil. Winfried Hacker, Deutschland**  
Former Professor for General Psychology at the Technical University of Dresden
8. **Prof. Dr.-Ing. habil. Wolfgang Kröger, Switzerland**  
Head of the Department of Nuclear Energy and Safety and Member of the Directorate, Paul Scherrer Institute (PSI) in Villigen  
Holder of the Chair for Safety Technology at the ETH Zurich
9. **Ing. Marcel Lallier, France**  
Former Head of Operations of the "EPR" (European Pressurized Reactor) Project
10. **Dr.-Ing. Erwin Lindauer, Germany (Vice Chairman)**  
Chief Executive Officer of the GfS Gesellschaft für Simulatorschulung mbH  
Chief Executive Officer of the KSG Kraftwerks-Simulator-Gesellschaft mbH

- 11. Dr. Serge Prêtre, Switzerland** (Chairman)  
Former Director of the Swiss Nuclear Safety Inspectorate  
(HSK, Hauptabteilung für die Sicherheit der Kernanlagen)
- 12. Prof. Dr.-Ing. habil. Eberhard Roos, Germany**  
Holder of the Chair for Material Testing, Material Science and Material  
Properties at the University Stuttgart  
Director of the State Materials Testing Institute, University Stuttgart
- 13. Prof. Dr. Frank-Peter Weiß, Germany**  
Professor of Plant Safety at the Technical University Dresden  
Director of the Institute for Safety Research at the Research Centre Rossendorf

(Members are listed in alphabetical order)

#### ILK Publications:

- 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 the 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 Airlines 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-CD** CD with all presentations held at the ILK Symposium "Opportunities and Risks of Nuclear Power" in April 2001