JOINT CONVENTION

Dutch National Report 2006

Supplement

JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

National Report of the Kingdom of the Netherlands

Second review conference (May 2006)

Supplement

Answers to questions received from other parties

The Hague, 11 April 2006

Seq. No	Country	Article	Ref. in National Report
1	France	Article 4	Section G Page 63

Question/ Comment	Could the Netherlands provide information on the planned strategies for plutonium management?
Answer	There are two commercial entities that own quantities of plutonium: the EPZ utility, owner-operator of the Borssele NPP, and NEA, responsible for the fuel contracts of the shut down Dodewaard NPP. The utility EPZ has no plans to use for itself the plutonium arising from its existing reprocessing contracts with the French company COGEMA. Instead, EPZ has contracted the management and recycling of its plutonium, as MOX fuel, in foreign reactors. None of this plutonium is being returned to The Netherlands. These contractual arrangements are available on the AREVA internet website (www.AREVA.com) The destination of NEA's plutonium from reprocessing of spent fuel from the Dodewaard NPP, in the Thorp facility in the U.K., is currently being negotiated.

Seq. No	Country	Article	Ref. in National Report
2	Germany	Article 4	p. 67

Question/ Comment	The report says that spent fuel from NPPs is to be reprocessed with the aim to recover resource material from it. What will be done with this resource material? Are there any plans to recycle the separated plutonium in a Dutch reactor? If so, is the use of MOX fuel already licensed for the Borssele plant? And what strategy will be followed with regard to the management of the reprocessed uranium?
Answer	All products from reprocessing of the spent fuel of Borssele NPP are being recycled. The plutonium is being used for production of MOX for foreign reactors. The reprocessed uranium is being recycled in the Borssele reactor itself. The utility EPZ has contracted the production of fresh fuel from re-enriched reprocessed uranium. The Borssele reactor is presently loaded with ¼ reprocessed uranium and ¾ natural uranium. The destination of reprocessed plutonium and uranium from the Dodewaard NPP is currently being negotiated.

Seq. No	Country	Article	Ref. in National Report
3	Spain	Article 6	§6.1 (Pag. 69)

Question/ Comment	The report explains very well the steps taken towards the selection of the site for HABOG facility; however, it is not fully clear if the procedure that has been followed is set up in a legal instrument (rule, decree,…) or is the result of a socio-political agreement. Could you expand on this?
Answer	Site selection for any nuclear activity follows a complex, non-routine procedure. In this particular case the challenge was to find a suitable new site for the waste management organization (COVRA). The first selection step involved the definition of selection criteria. This was done under the auspices of a committee, established for this purpose by the government. The second step was an assessment of the possible impact of such activity on the environment. This involved application of the legal instrument of a site-independent Environmental Impact Assessment (EIA). The third step aimed to reduce the number of possible suitable sites to two or three locations. This required delicate negotiations with local communities. There are no fixed rules for this step, but in the end only two communities remained, which volunteered to accommodate COVRA. In this step the socio-political aspects prevail. The last two steps, a site-specific EIA and a license application again are legal instruments which are imposed by the Nuclear Energy Act.

Seq. No	Country	Article	Ref. in National Report
4	Belgium	Article 9	9 (vii), page 80

Question/ Comment: Decommissioning plans (not available for the storage facility HABOG): "In addition, in view of the anticipated storage period (100 years) there is ample time to make the decommissioning plans or provide for facility upgrades."
- Is there a mechanism or structure foreseen to guarantee this in the future?
- In the explanation about The Nuclear Energy Act (Kew) [see article 19.1 page 27] one states that "Applicants are required to supply the following information: … a global description of plans for eventual decommissioning and its funding". Does this also apply to the storage facility HABOG?

Answer: The main concern is the availability of adequate funds for decommissioning of the HABOG. The graph presented on page 80 of the report shows the following:

- a fund for future management of radioactive waste exists;
- the fund will grow steadily during the planned waiting period until the expenses for the establishment of an underground repository are covered.
- drawing a relatively small amount from the fund will hardly affect the duration of this waiting period.

It is further stated on the top of the same page that dismantling of the HABOG is not considered to be much different from demolition of any other robust building due to the absence of any radioactive contamination. A detailed decommissioning plan, which addresses also the technical aspects, will be put in place in due course, most likely close to the anticipated closure of the HABOG. The decommissioning costs are not considered excessive.
The article quoted originates from the Nuclear Installations, Fissionable Materials and Ores Decree from 2002. The application for the HABOG license was submitted in 1995. At that time the requirement of a global decommissioning plan did not exist. It was introduced in the national legislation after ratification of the Joint Convention.

Seq. No	Country	Article	Ref. in National Report
5	Germany	Article 9	p. 78 and 88

Question/ Comment: The safety reviews every 5 and 10 years described under Article 9 i appear very suitable to ensure the long-term safety of spent fuel and radioactive waste storage. Could you give some examples of safety re-assessments which have to be performed during these reviews and of the special requirements of 10-yearly reviews compared to 5-yearly reviews?

Answer: As stated in the report 5 year reviews would address typical operational aspects, such as monitoring problems, introduction of new technologies in the air- or water treatment installations, application of ALARA or improved logistics in the storage configuration of waste packages. The first 10 year review is scheduled for 2009. The report states that design basis aspects will be addressed. An example of such an issue is a reassessment of the capability of the HABOG facility design to protect the stored waste against flooding. The assumptions about the rise of the sea level due to global warming are a constituent part of the design criteria. The validity of these assumptions will typically be tested during a 10 year review.

Seq. No	Country	Article	Ref. in National Report
6	Romania	Article 9	Section G, page 79

Question/ Comment: It is mentioned in this section that “Decommissioning of the HABOG facility will not differ significantly from the demolition of any other robust building outside the

nuclear sector". Who will be responsible for the decommissioning of HABOG?

Answer The operator of the HABOG facility (COVRA) is responsible for all aspects of decommissioning

Seq. No	Country	Article	Ref. in National Report
7	France	Article 12	Section H Page 82

Question/ Comment Could the Netherlands provide information on the licensing procedure applied for the repackaging operations of the Petten reactor waste (modification of installation, approval of the packaging specifications, etc.)

Answer All manipulations with the radioactive waste, which include sorting, treatment, and repackaging of the various components, is envisaged to take place in a large dimension hot cell. This hot-cell for treatment of radioactive waste is not covered under the present license of the Petten site. It is envisaged that an Environmental Impact Assessment (EIA) be made. After favourable outcome of the EIA the license procedure can start. This includes a safety assessment of the installation. When safe operation has been demonstrated to the satisfaction of the regulatory body, the license will be granted. Package specifications should meet the acceptance criteria set by the radioactive waste management organization (COVRA).

Seq. No	Country	Article	Ref. in National Report
8	Romania	Article 12	Section H, page 82

Question/ Comment It is mentioned that "1,500 Drums of waste are stored at the NRG Waste Storage Facility at Petten. This waste, resulting from some four decades of nuclear research at that facility, includes some highly active waste containing fuel material residues and some highly active wastes not including fuel material (fission and activation products). The wastes are stored in metal drums placed inside concrete-lined pipes ("storage tubes")." Could you detail the financial arrangements in this case?
Also you mentioned that "In the course of a two-year campaign between 1999 and 2001 the waste was inspected and levels of activity were determined." Please detail who has determined the levels of activity for this type of waste.

Answer The radioactive waste in the pipe storage facility originates from multiple sources, many of them resulting from irradiation experiments carried out in the framework of European research programmes in the HFR research reactor. Due to the long history of this reactor, many of the original owners of the waste cannot be tracked down anymore. The responsibility for the management of radioactive waste rested with ECN, before nuclear research was split off from the research activities of ECN and transferred to NRG in 1998. ECN has established a fund for the management of this waste. When the available financial resources were found not to be sufficient the government has supplemented the resources for the additional costs based on an approved plan of action.
The activity levels in the waste drums were determined by NRG.

Seq. No	Country	Article	Ref. in National Report
9	Korea, Republic of	Article 14	p. 84 (14(i))

Question/ Comment What is the limitation of water content in the organic liquid that can be burned in an incinerator? What types of incinerator are used and what are their capacities?

Answer There is no limit to water content of the liquids that can be incinerated (or in some cases evaporated might be more appropriate). Fluids consisting of water up to 100 %. An extensive description of the incinerator has been given in the literature

(Codée, H.D.K., M.T.B.M. Berntsen, J. Hengst, H. Lagerwerf: Incineration of Radioactive organic liquids five years of experience in the Netherlands. Intern. Conference on Incineration and Thermal Treatment Technologies, IT3, Portland, Oregon, USA, May 8-12, 2000.)

Seq. No	Country	Article	Ref. in National Report
10	United States of America	Article 15	84

Question/ Comment: There is a description of COVRA's rather extensive program for treatment of various forms of LILW. Is there an environmental monitoring program associated with the treatment and/or disposition of LILW as there is for spent fuel management? If so, please describe.

Answer: The text in the last section of article 4(iv) on page 65 and 66 also applies to the treatment of radioactive waste.

Seq. No	Country	Article	Ref. in National Report
11	France	Article 19	Section E Page 28

Question/ Comment: Could The Netherlands provide information on the applicable clearance levels and implementing measures?

Answer: Leading principle in the national legislation is the numerical equivalence of exemption and clearance limits. Exemption levels have been laid down in Annex 1 of Directive 96/29/Euratom. The clearance values are consequently largely equal to these exemption values. For radionuclides of artificial origin the numerical values are higher than those in IAEA RS-G-1.7; for natural radionuclides they are largely equal. In order to prevent clearance of materials that can not be justified for reasons of radiation protection, the exemption values for some radionuclides have been decreased (e.g. Co-60).

Seq. No	Country	Article	Ref. in National Report
12	Romania	Article 19	Section E, page 23

Question/ Comment: Please, specify if your Regulatory Body requires that a periodic safety review to be performed for each nuclear facility, including a spent fuel or radioactive waste management facility.

Answer: Yes, it is a requirement in the license for operation of a spent fuel or a radioactive waste management facility. A major review should occur every 10 years.

Seq. No	Country	Article	Ref. in National Report
13	Romania	Article 19	Section E, page 26

Question/ Comment: It is mentioned in this section that "Bkse sets out additional regulations in relation to a number of areas, including the license application procedure and associated requirements. Applicants are required to supply the following information: a global description of plans for eventual decommissioning and its funding". Could you detail what should address a global description of plans for eventual decommissioning? Should applicants submit also information regarding radioactive waste management?

Answer: It is a relatively new article in the national legislation of the Netherlands, introduced after ratification of the Joint Convention. So far not much experience with the level of detail required in a global decommissioning plan has been acquired. In the application for a modification of the operating license of the HFR research reactor the global description constituted of a list of subjects that will be addressed in the more detailed decommissioning plans. The operating license

requires the licensee to provide the regulatory body with an update of the plan every 5 years.

Seq. No	Country	Article	Ref. in National Report
14	Spain	Article 19	§ 19.2 (Pag. 33)

Question/ Comment: Is there any effective separation within the regulatory body to deal with safety and environmental impact assessment?

Answer: No, there is one regulatory body (RB), which is competent for both safety and environmental impact assessment. The only difference lies in the procedure. Before starting an EIA, the RB is required to ask advice from an independent EIA Commission. This advise forms the basis for guidelines on the contents of a specific EIA, to be issued by the RB. The EIA Commission is established for the occasion and its members are recruited from senior experts in the nuclear and environmental field. The EIA Commission also gives an opinion on the EIA itself. Although an advice by the EIA Commission is not binding to the regulatory body, it can not easily be ignored.

Seq. No	Country	Article	Ref. in National Report
15	Spain	Article 19	§ 19.1 b.3 (Pag. 28

Question/ Comment: The licensing procedure in application seems to be highly transparent and open to the public. Is the appeal procedure maintained over the duration of the license (i.e. may the public appeal due to safety concerns at any time)? Is any single member of the public taken as an interested party in front of the Court entitling him to place lawsuits without a need to justify a concrete and undue direct impact on his health or properties? Raising appeals to higher Courts gives strong legal guaranty and standing; however, they are typically burdensome, lengthy and expensive. Does the Dutch legal framework provide for any type of pre-judicial appealing instrument to speed up the procedure aiming to force agreement by arbitration?

Answer:

a) Duration of appeal procedure
Once the Council of State has made its final ruling, no further appeal can be raised. The license is final and valid for un undetermined period. Only if new evidence of an hazard would be provided or if it could be demonstrated that certain hazards have not been taken into account before, a new procedure can be started. Of course, changes to an existing facility that require modification of the license, are again subject to public scrutiny.

b) Justification
Any single individual is entitled to raise objections (anybody) or appeals (interested parties, including those who raised objections) until the highest court. There is no need to demonstrate occurrence of any health impact.

c) Pre-judicial appealing
Arbitration is not an instrument used in administrative law.

Seq. No	Country	Article	Ref. in National Report
16	Spain	Article 19	§ 19.2 (ii) b (P 29

Question/ Comment: What is the legal standing of IAEA nuclear safety standards within the Dutch legal framework? Are they legally binding and enforceable? Does the regulatory body have to endorse them before being enforceable? In the latter case, how is this done?

Answer: The IAEA safety standards as such do not have any legal standing in the national legislation. In practice however, many of these documents have been made legally binding in various ways. Some were implemented as a Nuclear Safety

Rule by ministerial ordinance (see page 29 of the report). Others were added as technical requirements to the license application by the operator and thus forming an integral part of the license. A third way to ensure that requirements, which are considered to be essential for safety by the RB, is inclusion in the conditions of the operating license. Together these requirements, which have legal status, form the reference levels against which compliance is assessed.

Seq. No	Country	Article	Ref. in National Report
17	Spain	Article 19	§ 19.2 (vi) (Pag. 34

Question/ Comment	How joint decisions (e.g. granting licenses) are coordinated and agreed by the various ministries with allocated competences in nuclear energy? Do all of them have to agree on the final decision? Is there any prevailing ministry? How disagreement in matters of joint (or not fully separate) responsibility is solved?
Answer	The ministry of VROM has been assigned most of the responsibilities for nuclear, radiation and waste safety and consequently, takes the lead in the co-ordination with other ministries involved. The responsibilities of other ministries are limited to the specific areas of their responsibility. As an example, the ministry of Health is involved in the license procedure of medical applications of radiation. However, involvement of other ministries means that their agreement on the areas of their responsibility is required. As a rule there is no disagreement between the different parts of the RB, because there are usually no conflicting competences. If such a situation does occur, the matter is discussed until consensus is reached.

Seq. No	Country	Article	Ref. in National Report
18	Spain	Article 20	§ 20.1 (Pag. 37)

Question/ Comment	The VROM Inspectorate has been divided into five regional offices; could expand on the duties and the legal standing of the regional offices? For instance, how they are staffed and empowered, if they intended only for inspection or they can make regulatory decisions and enforce regulations as well, what the relation is with headquarters…
Answer	As explained in the last paragraph on page 37, all inspection tasks for nuclear facilities, including the spent fuel and radioactive waste facilities have been allocated to the KFD. The regional offices of the VROM inspection exercise tasks related to the enforcement of general environmental laws. They do not have responsibilities in the area of law-making and establishment of regulations nor have the authority to issue licenses.

Seq. No	Country	Article	Ref. in National Report
19	Spain	Article 20	§ 20.1 (Pag. 39)

Question/ Comment	May KFD sign contracts with companies or institutes also rendering services to the nuclear industry? What guaranties are applied to external support subcontracting in order to ensure independence from the industry and unbiased advice?
Answer	KFD has a strong preference to sign contracts with institutes that are independent from the nuclear industry. At the moment KFD has permanent contracts with AVN (Belgium) and GRS/TUV (Germany) both Technical Support Organizations (TSO) who advise only to regulatory bodies.

Seq. No	Country	Article	Ref. in National Report
20	Belgium	Article 22	22 (ii), page 43

Question/ Comment: Once the transfer of the waste has been accomplished the customer is exempted from further responsibility for the waste.
The Netherlands have adopted a strategy of storage in dedicated facilities for at least 100 years (Article 32.1 (iii) page 17).
- With regard to the information concerning the historical waste: does the structure of the tariffs foresee the possibility to consider the coverage of the costs for non conform waste?
- Does the mechanism (calculation of tariffs) consider the evolution of the waste over these 100 years?

Answer:
a) The tariffs used by COVRA apply to standard situations. This means that the waste should be presented in packages of dimensions meeting acceptance criteria set by COVRA. For waste which does not meet the acceptance criteria, e.g. because of its large dimensions or need of special treatment, special prices apply, which are based on full cost coverage.
b) The waste is immobilized in a stable matrix, packaged and stored under controlled conditions. It is assumed to be stable and suitable for disposal without further treatment. Should somehow degradation of the waste packages occur during the storage period, the cost of repacking are to be borne by COVRA.

Seq. No	Country	Article	Ref. in National Report
21	Romania	Article 22	Section F, page 43

Question/ Comment: It is mentioned in this section that ” As regards the management of spent fuel and high level waste, the utilities and the operators of research reactors have agreed to jointly build a facility for treatment and long term storage of SF and HLW at the COVRA site.” This agreement, to jointly build a facility for treatment and long term storage of SF and HLW at COVRA site, was stipulated in a governmental decision or it was based on a contract between waste producers and COVRA?

Answer: It was based on a contract between the producers of the waste and COVRA.

Seq. No	Country	Article	Ref. in National Report
22	Spain	Article 22	§ 22 (ii) (Pag. 44)

Question/ Comment: Who is responsible for exercising the institutional oversight of the fund managed by COVRA and what financial criteria are applied in the use of the savings in the fund?

Answer: COVRA is a State-owned organization. Control of the waste management fund is exercised by the State, the ministry of Finance. Savings are added to the fund, deficiencies from the estimated growth curve are supplemented as operational costs.

Seq. No	Country	Article	Ref. in National Report
23	Spain	Article 22	§ 22 i (Pag. 43)

Question/ Comment: Are operational costs of HABOG charged to the waste generators by means of a fee or in terms of services rendered? How the losses of COVRA may be linked to the way the services provided are charged to the waste generators?

Answer: The operational costs of HABOG are borne by the users of HABOG. These are the 5 nuclear facilities, which generate HLW (the so-called basic clients). Some of these basic clients pay the operational costs as an annual contribution, others made a down payment by which they paid off all future waste management costs.

The waste generators of the latter category are discharged of any responsibility for the management of radioactive waste, once it is transferred to COVRA. In the contracts with COVRA refund of fees is not foreseen, if the management costs are less than estimated.

Seq. No	Country	Article	Ref. in National Report
24	Spain	Article 22	§ 22 i (Pag. 43&44)

Question/ Comment: Netherlands has set up a fund for long term management of HLW and spent fuel. Cost estimate for the contribution to fund foresees the construction of a repository after 100 years if deemed justified. What how happened if finally the repository is not needed, would the surpluses of the fund be reimbursed to the contributors?

Answer: No. If a repository is not required, the fund will be used for financing alternative management options. See also the answer to question no. 23.

Seq. No	Country	Article	Ref. in National Report
25	Croatia	Article 25	

Question/ Comment: In chapter "Intervention levels and measures" the generic intervention levels are given. Those intervention levels are significantly higher then the one recommended by IAEA in Safety Series No. 109 "Intervention Criteria in a Nuclear or Radiological Emergency". Can you please explain the differences?

Answer: The national intervention levels have been reviewed recently in the course of an update of the national emergency plan for response to nuclear accidents. The figures used are the result of expert judgment. As stated in the text international developments have also been taken into account. The intervention levels for evacuation and sheltering are equal or lie within the ranges recommended in Annex II and Annex III of IAEA Safety Standard GS-R-2. The intervention levels for drinking water are taken directly from EU regulations. Differences do occur with the intervention levels for iodine prophylaxis. The Netherlands is currently in the process of harmonizing the intervention levels for iodine prophylaxis with its neighbouring countries.

Seq. No	Country	Article	Ref. in National Report
26	Germany	Article 25	p. 59

Question/ Comment: The target for the removal of residual radioactive contamination from dismantling is clearance for unrestricted use. Can you describe the procedure how the supervisory authority can make sure that the clearance levels are not exceeded?

Answer: At present no formal procedures for the clearance of areas, which have become contaminated with radioactive material, are available. In the 40 years' period of safe enclosure a suitable procedure will be developed, based on experience acquired with dismantling of NPP's in other countries.

Seq. No	Country	Article	Ref. in National Report
27	Spain	Article 25	§ 25.1 (Pag. 54)

Question/ Comment: Could you clarify the meaning of the quotation "there are no legal requirements with respect to on-site emergency response measures"? Does it mean that radwaste and/or spent fuel management facilities are not required to have an on-site emergency plan? Does the regulatory body review and assess the on-site emergency preparedness arrangements or is the responsibility of the operator alone?

Answer: The operator of a nuclear facility is required to establish an on-site emergency

plan. However, this requirement is not set by an act or a decree but by a license requirement. As such this requirement has legal status. Compliance with this license requirement is assessed and as necessary enforced by the KFD.

Seq. No	Country	Article	Ref. in National Report
28	Bulgaria	Article 26	

Question/ Comment: Has the decommissioning approach (immediate/deferred dismantling, etc.) for the two Dutch NPPs been determined?

Answer: Yes. The Dodewaard NPP will be dismantled after a 40 years' waiting period. Recently the government has reached an agreement with the operator of the Borssele NPP in the framework of an extension of its operating license on direct dismantling after shut down (now scheduled in 2033).

Seq. No	Country	Article	Ref. in National Report
29	France	Article 26	Section F Page 61

Question/ Comment: Could the Netherlands provide more detailed information on the implemented action plan for data collection, record keeping and the corresponding approval procedure for the safe enclosure of the Dodeward reactor?

Answer: In 1999 the operator of the Dodewaard NPP submitted an EIS and an application for a license to bring the plant in a safe enclosure for a period of 40 years. Both the EIS and the license application were subject to participation of the public. Both procedures, which ran in parallel, included a public hearing, during which comments/objections could be raised. The license was granted in May 2002. One of the requirements in the license for safe enclosure is to keep a record system of the inventory of all radioactive materials and components, which have become contaminated or activated during operation and to update it every 5 years.

Seq. No	Country	Article	Ref. in National Report
30	Germany	Article 26	p. 59

Question/ Comment: If ownership of the Dodewaard NPP (in safe enclosure) is to be transferred from the private operator to the state-owned Central Organisation for Radioactive Waste (COVRA), how would the transfer of plant knowledge (bound to the radiation experts) and of funds (accumulated by the private operator) be accomplished?

Answer: The preservation of knowledge during a waiting period of 40 years is a challenge, even without a transfer of the safe enclosure of the Dodewaard NPP to COVRA. Therefore much attention is paid to good record keeping. As described in article 26 (iv) of the report a comprehensive database has been set up for this purpose. It contains all known radiological data and other information provided by employees familiar with the operation of the reactor.
The costs for maintenance of the safe enclosure, the dismantling of structures and buildings and the management of the decommissioning waste a fund has been established. Transfer to COVRA of this fund is a relatively simple transaction. It is likely to be supplemented with a sum to cover conceivable risks associated with cost estimates over a long period of time.

Seq. No	Country	Article	Ref. in National Report
31	Korea, Republic of	Article 26	p.58

Question/ Comment: Table 12 in the report states that the Dodewaard NPP has been shut down in 1997. What were the licensing procedures and requirements for decommissioning

of the Dodewaard NPP?

Answer In 1998 a modification of the operating license made it possible to implement a number of measures entailing from the termination of normal operation and in preparation for the installation of a safe enclosure. These measures included the removal of spent fuel from the core and transfer to Sellafield for reprocessing. This operation was concluded in 2003.
The application for a license to bring and to maintain the NPP in a safe enclosure was submitted in May 1999. Since the decommissioning of a nuclear installation is an activity that falls under the scope of the EU's new Environmental Impact Assessment Directive (Directive 97/11/EC), an environmental impact assessment (EIA) was also performed as part of the application. This EIA compared three methods of decommissioning: (1) dismantling after 40 years, (2) direct dismantling and (3) in-situ decommissioning (entombment).In parallel, a new safety analysis report was prepared by the licensee. This was based solely on the licensee's preferred option of dismantling the installation after a waiting period of 40 years. The license for the safe enclosure was granted in 2002. Physically, the safe enclosure condition was achieved in July 2005.

Seq. No	Country	Article	Ref. in National Report
32	Korea, Republic of	Article 26	26(ii)(p.60)

Question/ Comment The report states that COVRA was responsible for the shutdown of the Dodewaard NPP. Were all the resources for decommissioning, including the fund, transferred from GKN to COVRA?

Answer The envisaged transfer of the safe enclosure of the Dodewaard NPP, including all financial assets has not yet been accomplished. The negotiations between the utilities and COVRA on the conditions under which such transfer could occur, are ongoing.

Seq. No	Country	Article	Ref. in National Report
33	Korea, Republic of	Article 26	p.60

Question/ Comment What is the plan to establish a legal basis for reserving decommissioning funds?

Answer A description of the plan is given in the first paragraph in Section K of the report. At the moment there are no more details available since they have to be elaborated in decrees. This work is currently under development.

Seq. No	Country	Article	Ref. in National Report
34	Romania	Article 26	Section F, page 59

Question/ Comment It is mentioned that "The Dodewaard NPP is the only nuclear facility that is currently in a state of decommissioning. It was shut down in 1997 after 28 years of operation". Which type of cost modeling and estimates were used to estimate the decommissioning costs? Where will be disposed of all radioactive waste types arising from decommissioning of Dodewaard NPP(other than spent nuclear fuel)? Which were the main points of discussion from the regulatory side at the time when the decision to shut down in 1997 the Dodewaard NPP was taken? Did the plant owner establish communication channels with the neighbouring communities on a professional basis?

Answer The STILLKO 2 programme, mentioned on page 60 of the report, was used to estimate the actual decommissioning costs of the Dodewaard NPP. Since the expenses will be made at different points in time, all figures were converted to net present values. These form the basis for the initial deposit in the decommissioning

fund. The net present value method is a standard method used in many countries.
The radioactive waste arising from dismantling operations will be transferred to COVRA. It is expected that after the waiting period of 40 years a substantial part of the radioactivity has decayed, so that large volumes of metal and concrete can be cleared from regulatory control and be made available for reuse.
The main points of discussion were the decommissioning strategy, i.e. direct vs. deferred dismantling and the adequacy of the financial provisions at the time they are needed. This last point has not yet been fully sorted out. For communication with stakeholders, established procedures exist, such as publication of the draft license in regional newspapers, deposition in public places in neighbouring communities, and direct distribution to people living close to the facility. These procedures are laid down in applicable legislation.

Seq. No	Country	Article	Ref. in National Report
35	Romania	Article 26	Section F, page 59

Question/ Comment	It is mentioned that “Since the environmental impact was minute for all strategies considered the operator decided in favour of the least expensive strategy, namely postponed dismantling, with a waiting period of 40 years.” Have been considered ethical aspects, such as the responsibilities to the later generations, when developing the decommissioning strategy? Has been the public informed by a continuous dialog about postponed dismantling with a waiting period of 40 years in the case of decommissioning of the Dodewaard NPP?
Answer	An EIA focuses on the environment; ethical aspects have not been considered. The EIA procedure includes involvement of the public in a structured way. After a decision has been taken no further dialogue is envisaged.

Seq. No	Country	Article	Ref. in National Report
36	Romania	Article 26	Section F, page 60

Question/ Comment	Are EU Directives for decommissioning requirements correspondingly incorporated into the existing legislation? Are total decommissioning costs covered by the financial reservations made by Dodewaard NPP? Are cost for social measures covered by the financial reservations made by Dodewaard NPP?
Answer	There are no EU directives on decommissioning. At the time that the NPP Dodewaard was shut down there was no legislation on decommissioning. After ratification of the Joint Convention this has been introduced. The decommissioning funds have been established by the utilities on a voluntary basis. The cost estimates for decommissioning included the cost of a social plan for redundant personnel.

Seq. No	Country	Article	Ref. in National Report
37	Romania	Article 26	Section F, page 61

Question/ Comment	It is mentioned that “It is envisaged that COVRA, which is a 100 % state owned company will become responsible for the shut down Dodewaard NPP.” This provision / agreement will include the transfer of financial reservations from Dodewaard NPP to COVRA? Also, it is mentioned that “This decision in principle was taken to improve the efficiency of radioactive waste management in connection to the decommissioning steps following the removal of all spent fuel from the NPP.” Taking into account that this decision in principle was taken, could you detail how will improve this decision the efficiency of radioactive waste management in connection to the decommissioning steps and what is the link between this decision and the future decommissioning activities for the remaining

facilities (Borssele, HFR and LFR from Petten, URENCO, COVRA, etc)?

Answer There are two immediate advantages to the transfer of the responsibility for the decommissioned NPP Dodewaard to COVRA:

a) A decommissioned NPP is basically a collection of radioactive waste in various forms and dimensions. Management of radioactive waste is the core business of COVRA, and the COVRA site is also the destination of this waste. COVRA is therefore in the best position to find an optimum solution from a logistics point of view.
b) It is likely that COVRA will take on a similar role in relation to the future decommissioning of the other nuclear facilities. By carrying out the dismantling operations of these facilities consecutively, efficient use of human and financial resources can be achieved. In addition an increasing expertise with dismantling operations will be acquired.

Seq. No	Country	Article	Ref. in National Report
38	Spain	Article 26	§ 22 (ii) & SECT. K

Question/ Comment Could you give some more information on the concrete elements that will be changes/introduced to the nuclear energy act in the matter of decommissioning? For instance, how the decommissioning funds mentioned in section K relate to the fund managed by COVRA? What type documentation must be submitted by the licensees in relation to the management of the decommissioning funds? And what type of institutional oversight will be maintained?

Answer At the moment there are no more details available than given in Section K of the report. The details have to be elaborated in decrees. This work is currently under development.
There is no relationship between the decommissioning funds to be established and managed by the operators of NPP's and the fund for future costs for management of radioactive waste as kept by COVRA.

Seq. No	Country	Article	Ref. in National Report
39	Spain	Article 26	§ 22 (i) (Pag. 59)

Question/ Comment Apart from appointing a radiological expert for radiological purposes during the safe enclosure period of Dodewaard NPP, are there other requirement applicable to the staff (size and qualification) and organisation implementing the supervision of the safe enclosure? What type of oversight is maintained by the regulatory body during this period?

Answer The license for safe enclosure does not set quantitative requirements to the size of the staff. However, it specifies certain obligations and objectives that have to be fulfilled. The following requirements may serve as an example.

- By reference IAEA publications WS-R-2 (Predisposal management of radioactive waste) and WS-G-2.1 (Decommissioning of NPP's and Research Reactors) have been made applicable.
- Minimum qualifications for the radiation protection expert.
- A requirement to periodically update the radiological inventory system of the plant.
- A requirement to set up a corrosion control programme.
- A requirement to submit (ultimately 35 years after the start of the waiting period) a decommissioning plan in which the details for dismantling are specified.
- Access control of the site.
- Periodic transfer of radioactive waste that could possibly arise during the safe enclosure to COVRA.

Seq. No	Country	Article	Ref. in National Report
40	Romania	Article 28	Section J, page 93

Question/ Comment: “Subsequently one of the competent inspection services is alerted, which is authorized to impound such source and have it transferred to one of three appointed institutes, which are equipped to store the source.” Which are these three institutions? Which are their responsibilities in relation to the management of orphan sources? Could you detail the financial arrangements in the case of management of orphan sources?

Answer: These institutes are COVRA and NRG for both fissionable and non fissionable radioactive material and RIVM for non-fissionable material only. These institutes have both storage capacity and qualified experts to ensure safe storage of the orphan sources. If the owner or sender of the source can be retrieved, the management costs will be charged to the owner or the sender. If there is no owner the State (in case of impoundment) will bear the costs.

Seq. No	Country	Article	Ref. in National Report
41	United States of America	Article 28	93

Question/ Comment: The report states that portal monitors have been installed at container terminals in the Rotterdam harbor. Please explain how the program for border protection, including radiation monitoring of exports precludes the inadvertent disposal of sources in shipments (e.g., scrap metal) that could result in the possible import by other countries and/or re-import of contaminated materials. Please describe the program for border protection, including radiation monitoring at airports.

Answer: At the moment about 40 portal monitors are being installed in the Rotterdam harbor. Their purpose is to monitor the vast majority of containers (about 80%) that are being exported, imported and transshipped through the Rotterdam harbor. At smaller terminals where no portal monitors are being installed, mobile detection systems are going to be used for monitoring at random. Most containers shipped abroad by the Rotterdam harbor are therefore monitored on the presence of elevated levels of ionizing radiation. Suspected containers are subject to risk assessment and may be scanned by X-ray. In the future it is possible that this program will not be limited to the Rotterdam harbor and that also monitors are going to be installed at other harbors and at airports, next to the X-ray scans for luggage control.

Seq. No	Country	Article	Ref. in National Report
42	Belgium	Article 32	32.1 (iii), page 15

Question/ Comment: "A substantial volume of the waste will decay to a non-radioactive level in 100 years." Shall the Netherlands foresee a “release”-program for this waste?

Answer: Yes, COVRA keeps a database in which the radioactive contents of each single package is recorded, as well as the expected date that the radioactivity has decayed below the clearance levels. Released packages will either be managed according to the applicable hazard class of other components, or as normal household waste.

Seq. No	Country	Article	Ref. in National Report
43	Bulgaria	Article 32	

Question/ Comment: How is very low level NPP waste managed in the Netherlands?

Answer: Very low level waste, with radioactivity concentrations in excess of the exemption

levels, is transferred to COVRA for treatment and conditioning, as applicable.

Seq. No	Country	Article	Ref. in National Report
44	Croatia	Article 32	

Question/ Comment: It is stated that the Netherlands has a very high ground water table and under these circumstances shallow land burial is not acceptable for the low and medium level waste.
Is it correct that, from the technical point of view, there is no suitable location for near surface disposal facility in the Netherlands? The Belgium is considering locating near surface repository near Mol, which is quite close to the Netherlands.

Answer: The selection of a site for shallow land burial is not only a matter of technical feasibility. Large parts of the country are certainly unsuitable because of the high water table. It cannot be excluded that there are regions where the water table would not be prohibitive at this moment. However, the Netherlands is a coastal state and the possible effects of sea level rising on the long term are largely unknown and would introduce an uncertainty factor. Under these circumstances near surface disposal is not a preferred option.
For the time being we are not in a position to express any judgment on the suitability of sites in Belgium. If, in due course, the Belgian government selects a disposal site, the procedure according to article 37 of the Euratom treaty applies. This means that this activity has to be notified and that neighbouring states will be informed about its potential impact.

Seq. No	Country	Article	Ref. in National Report
45	France	Article 32	Section D Page 22

Question/ Comment: Could the Netherlands clarify the presentation of the waste inventories (e.g. include the waste mentioned in the page 82 resulting from Petten reactor operation

Answer: As indicated on page 82 of the report, the storage facility with historical waste from experiments in the HFR research reactor, is considered a past practice. Partial degradation of the waste packages has limited full identification of the waste. It can not be included in the waste inventory because the data are incomplete and not always reliable.

Seq. No	Country	Article	Ref. in National Report
46	Germany	Article 32	p. 22

Question/ Comment: Could you give an indication of the quantities of NORM or other residues which result from past practices and which are not stored at the Central Organisation for Radioactive Waste (COVRA) (e.g. heaps of previous practices).

Answer: The quantities of NORM waste stored on other sites than COVRA are not exactly recorded. A large quantity of these wastes have radioactivity concentrations below the exemption levels, as specified in Annex 1 of the Radiation Protection Decree. As far as possible these wastes are reused as additives for the preparation of building materials, e.g. for road construction. Other wastes, particularly mixed wastes, containing both radioactive material and other hazardous material are destined to be disposed of in repositories for chemical waste. Consequently, the quantities kept in storage may vary considerably. NORM materials with radioactivity concentrations in excess of the exemption limits are stored at some sites of raw materials processing industries. The quantities are estimated to amount to about 10,000 tonnes.

Seq. No	Country	Article	Ref. in National Report
47	Romania	Article 32	Section B, page 14

Question/ Comment	Doesn't the concept of "long storage" conflict with one of the principles of radioactive waste management - "Burdens for future generation"? Please detail the related public perception in your country.
Answer	Long term storage implies that the care for spent fuel or r.a.w. will be passed on to the next generation. At the same time we think that this burden is not undue, because not only the burden of this care will be passed on to the next generation, but also financial resources and technical knowledge required to set favorable conditions for a good management of the spent fuel or r.a.w. In general there is no opposition from the public towards long-term storage.

Seq. No	Country	Article	Ref. in National Report
48	Romania	Article 32	Section B, page 14

Question/ Comment	Did Netherlands develop a strategy for public acceptance related to radioactive waste disposal?
Answer	Public acceptance is an integral part of the research programme on retrievable disposal of radioactive waste in the deep underground. This research programme is ongoing and addresses specifically public acceptance issues. A formal strategy for public acceptance has not yet been established.

Seq. No	Country	Article	Ref. in National Report
49	Romania	Article 32	Section B, page 19

Question/ Comment	It is mentioned that "All categories of waste will be disposed of in a deep geologic repository in the future." Where is this statement from?
Answer	This statement should not be construed as a political decision, but as a design feature of a future geological repository. Due to the small amounts of radioactive waste, no separate disposal facilities for LILW and HLW are envisaged, but one for both categories.

Seq. No	Country	Article	Ref. in National Report
50	Romania	Article 32	Section D, page 22

Question/ Comment	What is the storage strategy of spent ion exchangers from NPP Borsele?
Answer	COVRA has no other strategy for the spent ion exchangers from Borsele NPP than for other LILW. The waste is conditioned at the Borsele site with cement in 200 liter drums. These can directly be stored in the storage building for low and intermediate level waste (LOG) along with the 200 and 100 liter drums produced at the COVRA site.

Seq. No	Country	Article	Ref. in National Report
51	Romania	Article 32	Annex 1, page 99

Question/ Comment	Are there any legal requirements regarding the very low level waste?
Answer	It is assumed that reference is made to very low level waste containing radionuclides of natural origin. In that case the following applies: Natural radioactive materials with an activity or activity concentration in excess of the exemption levels, but less than 10 times the exemption levels, should be

notified to the regulatory body. Reuse or recycling is the preferred option for this material, but the regulatory body can impose restrictions to its recycling or reuse for radiation protection purposes.
For the use of natural radioactive materials with an activity or activity concentration in excess of 10 times the exemption levels, a license to be issued by the regulatory body is required. If no further use of the material is foreseen, it is considered radioactive waste, and it should be transferred to COVRA.
For waste containing artificial radionuclides, the clearance levels – which equal the exemption levels – are determining. Waste containing radionuclides in excess of the exemption/clearance levels should be transferred to COVRA, unless their physical half-life is less than 100 days, in which case on-site storage for decay is allowed.

Seq. No	Country	Article	Ref. in National Report
52	Spain	Article 32	§ 32.1 (iv) (Pag. 18

Question/ Comment: We miss information about the radioactive wastes generated in URENCO's enrichment plant and the policy and management practices applied on it.

Answer: The radioactive waste originating from the uranium enrichment facility of URENCO is not considered a special type of waste. It involves minute quantities of low level uranium containing waste, which are collected, treated, conditioned and stored by COVRA, basically as the radioactive waste of any other small generator of waste. The tails that remain after the enrichment process are not considered as waste as long as they are available for re-enrichment. If re-enrichment is not possible, the tails are converted to solid uranium oxide and stored in a dedicated building at the COVRA site.

Seq. No	Country	Article	Ref. in National Report § 32.2 (iii) (P. 22)
53	Spain	Article 32	

Question/ Comment: Once the radioactive wastes are transferred to COVRA, are the property and liabilities kept by the licensee, transferred to COVRA or transferred to the State? In the affirmative case, is such transference reflected in any type of legal value paper (authorisation, exchange of property titles,…)?

Answer: The property and liabilities are transferred to COVRA. The fact that COVRA takes full title of waste is reflected in the Transfer document and laid down in the General Conditions of COVRA.

Seq. No	Country	Article	Ref. in National Report
54	United States of America	Article 32	121

Question/ Comment: Please provide, if possible, the inventories for stored SNF and vitrified HLW at the HABOG facility in MTUs (and/or numbers of assemblies) for SNF and number of canisters for vitrified HLW glass canisters, respectively.

Answer: Inventory SNF and vitrified HLW at the HABOG facility (01-01-2006)

	Assemblies	Canisters
SNF	326	10
vitrified HLW	X	56

Each canister for SNF can contain a maximum of 33 SNF assemblies.

Seq. No	Country	Article	Ref. in National Report
55	United States of America	Article 32	16

Question/ Comment	The objective of assuring waste is retrievable at any time for any reason seems at odds with the definition of disposal in the Joint Convention, which specifies that there be no intention of retrieval. Waste emplacement is typically followed by an institutional control period and then permanently sealed. For salt and clay formations, waste is permanently encapsulated through the creep properties of the geologic formations.
Answer	It is a conceptual issue. There is no conflict with the definition in the Joint Convention. Any repository will be designed and constructed in such a way that the waste emplaced in it can be retrieved. Consequently, the *possibility* of retrieving the waste during a certain period will be created, but there is no *intention* to retrieve it. After emplacement there are two possibilities: either a political decision to close the repository will be taken or, in the absence of such a decision a fail-safe situation exists: in a neglect scenario the plastic properties of the geological formation will enclose the waste and isolate it from the biosphere.

Seq. No	Country	Article	Ref. in National Report
56	United States of America	Article 32	17

Question/ Comment	Beginning a new research program on deep geologic disposal was scheduled to start in 2005. This program includes cooperation with other countries and joint projects. Please describe this program at the Review Meeting.
Answer	Some key elements of the research programme will be included in the presentation of the national report at the Review Meeting.