



**Country Waste Profile Report for  
NETHERLANDS  
Reporting Year: 2006**

*For guidance on reading Country Waste Profile Reports,  
please refer to the following internet based document:*

*<http://www-newmdb.iaea.org/help/profiles9/guide.pdf>*

*For further information, please contact the Responsible Officer via e-mail:  
[NEWMDB@IAEA.org](mailto:NEWMDB@IAEA.org)*

## Waste Classification Schemes

Country: NETHERLANDS

Reporting Year: 2006

Waste Class Matrix: **IAEA Def.**

This country does use the IAEA Scheme: No

Description:

The Agency's standard matrix

| Waste Class Name | Distribution % |         |       |
|------------------|----------------|---------|-------|
|                  | LILW-SL        | LILW-LL | HLW   |
| LILW-SL          | 100.0          | 0.0     | 0.0   |
| LILW-LL          | 0.0            | 100.0   | 0.0   |
| HLW              | 0.0            | 0.0     | 100.0 |

Waste Class Matrix: **National**

Yes

Description:

LILW, is called in Dutch the category of 'laag- en middel radioactief afval'. For the Dutch situation no distinction is made between short lived and long lived. The reason for this is that shallow land burial is not applicable for the Netherlands and therefore all categories of waste will be disposed of in a deep geologic repository after a period of long term storage. The long term storage will take place for a period of at least 100 years.

| Waste Class Name        | Distribution % |       |       |       |
|-------------------------|----------------|-------|-------|-------|
|                         | VLLW           | LLW   | ILW   | HLW   |
| LILW                    | 0.0            | 90.0  | 10.0  | 0.0   |
| LILW, NORM              | 0.0            | 100.0 | 0.0   | 0.0   |
| LILW, depU              | 0.0            | 0.0   | 100.0 | 0.0   |
| HLW, non heat producing | 0.0            | 0.0   | 100.0 | 0.0   |
| HLW, heat producing     | 0.0            | 0.0   | 0.0   | 100.0 |

Comment **# 250: national waste categories**

Three groups of LILW are identified:

- LILW;
- LILW,NORM and
- LILW, depU

The first group, LILW is the 'normal' waste generated by the nuclear industry, users of radioactivity and users of radiation sources. According to the nature of the activity this waste group is further classified as follows:

- category A: all alpha bearing wastes
- category B: beta/gamma waste from nuclear power plants only
- category C: beta/gamma waste with half-life >15 years
- category D: beta/gamma waste with half-life <15 years.

All beta/gamma waste from the nuclear power plants is kept as a separate group because this is a well defined group that generally contains higher levels of strong emitting gamma nuclides. The A category is kept separate because these nuclides have long half-lives and are highly radiotoxic. The separation between the C and D category is done on half-life, such as to include H-3 in the last category. Within a storage period of at least 100 years the last category will have decayed completely. SRS as a waste product is not kept separate. SRS is treated in the same way as 'normal' LILW, sources are embedded in a concrete matrix and subsequently stored together with other LILW.

HLW, heat producing, consists of:

- the vitrified waste from reprocessing of spent fuel from the two nuclear power plants (Borssele and Dodewaard);
- the spent fuel of the two research reactors (Petten and Delft).

HLW, non-heat producing, consists mainly of the reprocessing waste other than the vitrified residues. It also includes a small amount of waste from research on reactor fuel and some decommissioning waste.

The waste class scheme for The Netherlands is not based on a law or a regulation. It is since long (1985) common practice to use this class scheme.

The percentages in the matrix are based upon a comparison of the definitions of waste classes in both The Netherlands' and the IAEA's waste classification schemes. The percentages cited are a best estimate.

**Definition of «unprocessed waste» and «processed waste»:**

## Waste Classification Schemes

Country: NETHERLANDS

Reporting Year: 2006

Is not defined

Comment **# 12224: Definitions for Unprocessed Waste and Processed W**

The LILW is processed in such a way that a cemented waste form results. These cemented waste forms (mostly 200 and 1000 litre packages) are suitable for at least 100 year storage in above ground buildings and are expected to be suitable also for deep geologic disposal.

The LILW, NORM, is stored in 20 ft containers as unprocessed product. This is a calcinated product, that can easily be stored in containers for a period of 100 years. After 100 years the radioactivity will have decayed to a level that the material can be moved out of the radioactive materials regime (Po, Bi, and Pb-210 are short-lived). The material can either be reused, possibly after some treatment, in road-filling or comparable, or the material will be removed as chemical waste according to applicable rules and regulations at that time.

The LILW, depleted uranium, is stored as unprocessed U<sub>3</sub>O<sub>8</sub>, in DV70 containers. The material is stored in an unprocessed way because of the potential value of the material in the future. If, after 100 years storage, the material has to be disposed of in a deep geological repository, it has to be treated according to the requirements for disposal at that time.

The HLW, heat producing, consists of vitrified reprocessing waste and spent fuel from the research reactors. The vitrified product is suitable for long-term storage as well as for deep geological disposal. The spent fuel is contained in helium-filled canisters, which are suitable for long-term storage. Repackaging or reconditioning might be needed after 100 years according to the requirements for disposal at that time.

## Groups Overview

Country: NETHERLANDS

Reporting Year: 2006

| <b>Reporting Group:</b>   | <b>COVRA</b>  |                    |         |  |
|---------------------------|---|--------------------|---------|--|
| Inventory Reporting Date: | December 2006   |                    |         |  |
| Waste Matrix Used:        | National  |                    |         |  |
| Description:              | COVRA, Centrale Organisatie Voor Radioactief Afval (Central Organisation For Radioactive Waste), the radioactive waste management organisation in the Netherlands |                    |         |  |
|                           |   |                    |         |  |
| Site Name                 | Facility Name   | Facilities Defined |         |  |
| BNFL                      | spent fuel  | processing         |         |  |
| Cogéma                    | spent fuel  | processing         |         |  |
| COVRA                     | COVRA-AVG   | processing         |         |  |
|                           | COVRA-stor  |                    | storage |  |

## Site (Structure) : BNFL

Country: NETHERLANDS

Reporting Year: 2006

Full Name: BNFL reprocessing facility

Description:

Official Website:

License Holder(s): BNFL

Waste management facilities that are located at this site:

|  |   |                |
|--|---|----------------|
| <b>Facility:</b>   | <b>spent fuel</b>   |                |
| <b>Description:</b>  | For a full description of the BNFL facilities go to the UK site. At BNFL the spent fuel of the Dodewaard nuclear reactor is stored, waiting to be reprocessed |                |
| <b>Processing part of facility</b>                               |   |                |
| The following shows processing status for waste classes and SRS. |   |                |
| <b>Waste Class</b>   | <b>Actual</b>   | <b>Planned</b> |
| LILW   | No  | No             |
| LILW, NORM   | No  | No             |
| LILW, depU   | No  | No             |
| HLW, non heat producing  | No  | No             |
| HLW, heat producing  | No  | No             |
| <b>Type:</b>   |   |                |
| <b>Year opened:</b>  |   |                |

## Site (Data) : BNFL

Stock of waste as at December 2006

Country: NETHERLANDS

Reporting Year: 2006

**Site Name:** BNFL

Full Name: BNFL reprocessing facility

Inventory Reporting Date: December 2006

Waste Matrix Used: National

**No Waste Data to report.**

## Site (Structure) : Cogéma

Country: NETHERLANDS

Reporting Year: 2006

Full Name: Cogéma reprocessing facility

Description:

Official Website:

License Holder(s): Cogéma

Waste management facilities that are located at this site:

|  |   |                |  |
|--|---|----------------|--|
| <b>Facility:</b>   | <b>spent fuel</b>   |                |  |
| Description:   | For a full description of the Cogéma reprocessing facility go to the France site. At Cogéma the spent fuel of the Borssele nuclear power plant is stored , waiting to be reprocessed. |                |  |
| <b>Processing part of facility                      spent fuel</b> |   |                |  |
| The following shows processing status for waste classes and SRS.   |   |                |  |
| <b>Waste Class</b>   | <b>Actual</b>   | <b>Planned</b> |  |
| LILW   | No  | No             |  |
| LILW, NORM   | No  | No             |  |
| LILW, depU   | No  | No             |  |
| HLW, non heat producing  | No  | No             |  |
| HLW, heat producing  | No  | No             |  |
| <b>Type:</b>   | Treatment, Conditioning   |                |  |
| <b>Year opened:</b>  | 0   |                |  |

**Site (Data) : Cogéma**

Stock of waste as at December 2006

Country: NETHERLANDS

Reporting Year: 2006

**Site Name:** Cogéma

Full Name: Cogéma reprocessing facility

Inventory Reporting Date: December 2006

Waste Matrix Used: National

**Processing - Treatment method(s)**

| Method                 | Status  |             |   |               |
|------------------------|---------|-------------|---|---------------|
|                        | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Calcination            | N       | N           | Same  | N             |
| Chemical Precipitation | N       | N           | Same  | N             |
| Compaction             | N       | N           | Increase  | N             |
| Size Reduction         | N       | N           | Same  | N             |
| Wastewater Treatment   | N       | N           | Same  | N             |

**Processing - Conditioning method(s)**

| Method         | Status  |             |   |               |
|----------------|---------|-------------|---|---------------|
|                | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Bituminization | N       | N           | Suspended   | N             |
| Cementation    | N       | N           | Same  | N             |
| Encapsulation  | N       | N           | Same  | N             |
| Grouting       | N       | N           | Same  | N             |
| Vitrification  | N       | N           | Same  | N             |



## Site (Structure) : COVRA

Country: NETHERLANDS

Reporting Year: 2006

Full Name: National radioactive waste treatment and storage site of COVRA

Description:

Official Website:

License Holder(s): COVRA N.V.  
Spanjeweg 1  
P.O.Box 202  
4380 AE Vlissingen  
The Netherlands

Waste management facilities that are located at this site:

|  |   |                |  |
|--|---|----------------|--|
| <b>Facility:</b>   | <b>COVRA-AVG</b>  |                |  |
| <b>Description:</b>  | AVG, AfvalVerwerkingsGebouw (Waste Treatment Building) is the building at the COVRA site where low and intermediate level waste is treated and conditioned. |                |  |
| <b>Processing part of facility COVRA-AVG</b>                     |   |                |  |
| The following shows processing status for waste classes and SRS. |   |                |  |
| <b>Waste Class</b>   | <b>Actual</b>   | <b>Planned</b> |  |
| LILW   | No  | No             |  |
| LILW, NORM   | No  | No             |  |
| LILW, depU   | No  | No             |  |
| HLW, non heat producing  | No  | No             |  |
| HLW, heat producing  | No  | No             |  |
| <b>Type:</b>   | Treatment, Conditioning   |                |  |
| <b>Year opened:</b>  | 1992  |                |  |

## Site (Structure) : COVRA

Country: NETHERLANDS

Reporting Year: 2006

|                     |   |
|---------------------|---|
| <b>Facility:</b>    | <b>COVRA-stor</b>   |
| <b>Description:</b> | Separate storage buildings are present at the COVRA site for LILW (LOG), HLW (HABOG), NORM (COG) and for depleted U (VOG) |

**Storage part of facility**                      **COVRA-stor**

The following shows storage status for waste classes and SRS.

| Waste Class             | Actual | Planned |
|-------------------------|--------|---------|
| LILW                    | Yes    | Yes     |
| LILW, NORM              | Yes    | Yes     |
| LILW, depU              | Yes    | Yes     |
| HLW, non heat producing | No     | Yes     |
| HLW, heat producing     | Yes    | Yes     |

|            |    |
|------------|----|
| List SRS?  | No |
| List UMMT? | No |

|                  |  |
|------------------|--|
| <b>Capacity:</b> | All buildings are constructed such as to allow modular extension. At the site (25 ha) room is available for the waste expected to be generated in a period of 100 years. |
|------------------|--|

## Types of Storage Units

| Storage Unit Name | Type Name | Year Opened | Closed? | Full? | Modular? | Contains SRS? |
|-------------------|-----------|-------------|---------|-------|----------|---------------|
| LOG               | building  | 1991        | No      | No    | Yes      | No            |
| COG               | building  | 2000        | No      | No    | Yes      | No            |
| VOG               | building  | 2004        | No      | No    | Yes      | No            |
| HABOG             | bunker    | 2003        | No      | No    | Yes      | No            |

Site (Data) : COVRA

Stock of waste as at December 2006

Country: NETHERLANDS

Reporting Year: 2006

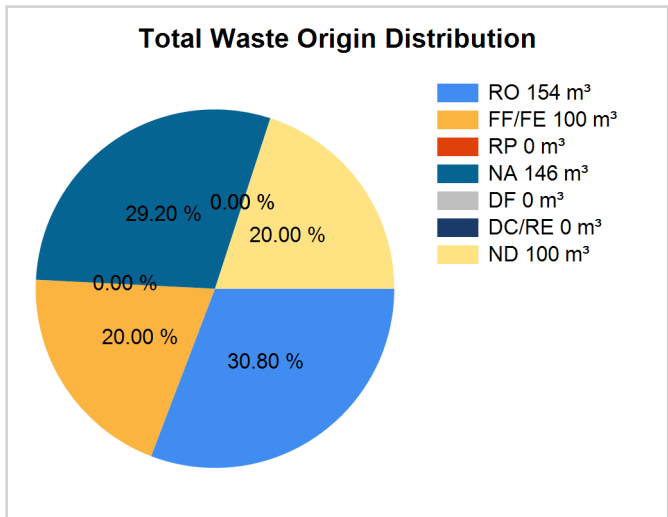
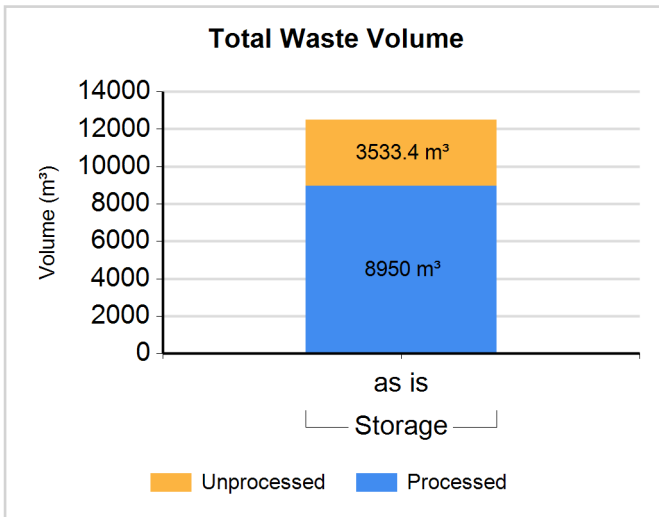
Site Name: COVRA

Full Name: National radioactive waste treatment and storage site of COVRA

Inventory Reporting Date: December 2006 Waste Matrix Used: National

Waste Inventory

Est=distribution is an estimate, Proc.=Is the waste processed (Yes/No)? RO=Reactor Operations, FF/FE=Fuel Fabrication/Fuel Enrichment, RP=Reprocessing, NA=Nuclear Applications,DF=Defence, DC/RE=Decommissioning/Remediation, ND=Not Determined



Note: where volume "as dispo" is provided, volume "as is" is used in the graph instead.

## Site (Data) : COVRA

Stock of waste as at December 2006

Country: NETHERLANDS

Reporting Year: 2006

**Waste Class: LILW**

| Waste Class Name | Location / Facility  | Proc | Est. | Volume "as is" (m <sup>3</sup> ) | Volume "as dispo" (m <sup>3</sup> ) | RO %  | FF/FE % | RP % | NA %  | DF % | DC/RE % | ND % |
|------------------|----------------------|------|------|----------------------------------|-------------------------------------|-------|---------|------|-------|------|---------|------|
| LILW             | Storage / COVRA-stor | Y    | N    | 8935.000                         | 8935.000                            | 54.00 | 0.00    | 0.00 | 46.00 | 0.00 | 0.00    | 0.00 |

**Waste Class: LILW, NORM**

| Waste Class Name | Location / Facility  | Proc | Est. | Volume "as is" (m <sup>3</sup> ) | Volume "as dispo" (m <sup>3</sup> ) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND %   |
|------------------|----------------------|------|------|----------------------------------|-------------------------------------|------|---------|------|------|------|---------|--------|
| LILW, NORM       | Storage / COVRA-stor | N    | N    | 2400.000                         | 2400.000                            | 0.00 | 0.00    | 0.00 | 0.00 | 0.00 | 0.00    | 100.00 |

Comment # 9595: Waste Storage facilities/Class LILW, NORM

The LILW, NORM is generated in the phosphor plant. Because of the nature of the production process it is a calcinate with Po-210, Bi-210 and Pb-210 only.

**Waste Class: LILW, depU**

| Waste Class Name | Location / Facility  | Proc | Est. | Volume "as is" (m <sup>3</sup> ) | Volume "as dispo" (m <sup>3</sup> ) | RO % | FF/FE % | RP % | NA % | DF % | DC/RE % | ND % |
|------------------|----------------------|------|------|----------------------------------|-------------------------------------|------|---------|------|------|------|---------|------|
| LILW, depU       | Storage / COVRA-stor | N    | N    | 1130.000                         | 1130.000                            | 0.00 | 100.00  | 0.00 | 0.00 | 0.00 | 0.00    | 0.00 |

**Waste Class: HLW, heat producing**

| Waste Class Name    | Location / Facility  | Proc | Est. | Volume "as is" (m <sup>3</sup> ) | Volume "as dispo" (m <sup>3</sup> ) | RO %   | FF/FE % | RP % | NA %   | DF % | DC/RE % | ND % |
|---------------------|----------------------|------|------|----------------------------------|-------------------------------------|--------|---------|------|--------|------|---------|------|
| HLW, heat producing | Storage / COVRA-stor | N    | N    | 3.400                            | 3.400                               | 0.00   | 0.00    | 0.00 | 100.00 | 0.00 | 0.00    | 0.00 |
| HLW, heat producing | Storage / COVRA-stor | Y    | N    | 15.000                           | 15.000                              | 100.00 | 0.00    | 0.00 | 0.00   | 0.00 | 0.00    | 0.00 |

Comment # 9614: Waste Storage facilities/Class HLW, heat produc

The processed waste consists of the vitrified waste product resulting from the reprocessing of fuel from n.p.p. Borssele. Apart from this waste also 3.2 m<sup>3</sup> of spent fuel from the research reactors at Petten and Delft is stored at COVRA as well as 0.2 m<sup>3</sup> of enriched uranium filters from molybdenum production. Spent fuel and filters are packaged in a canister filled with helium; they are however considered here as 'unprocessed' waste.

**Processing - Treatment method(s)**

| Method                   | Status  |             |   |               |
|--------------------------|---------|-------------|---|---------------|
|                          | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Chemical Precipitation   | N       | N           | Same  | N             |
| Compaction               | N       | N           | Same  | N             |
| Incineration             | N       | N           | Same  | N             |
| Shredding and Compaction | N       | N           | Same  | N             |
| Size Reduction           | N       | N           | Same  | N             |
| Super Compaction         | N       | N           | Same  | N             |
| Wastewater Treatment     | N       | N           | Same  | N             |

## Site (Data) : COVRA

Stock of waste as at December 2006

Country: NETHERLANDS

Reporting Year: 2006

**Processing - Conditioning method(s)**

| Method        | Status  |             |   |               |
|---------------|---------|-------------|---|---------------|
|               | Planned | R&D program | Current practice method use over the last 5 years | Past Practice |
| Cementation   | N       | N           | Same  | N             |
| Encapsulation | N       | N           | Same  | N             |

Comment **# 7369: Cementation and encapsulation**

All LILW is brought into a cemented waste form for storage.

The spent fuel of the research reactors as well as the uranium filters from molybdenum production are encapsulated in a cannister filled with helium gas.

## Regulators

Country: NETHERLANDS

Reporting Year: 2006

|               |  |
|---------------|--|
| <b>Name:</b>  | <b>VROM</b>  |
| Full Name:    | Ministerie van Volkshuisvesting, Ruimtelijke Ordening en Milieubeheer (Ministry of Housing, Spatial Planning and Environment)                        |
| Divison:      | Directie Stoffen, Afvalstoffen, Straling (Directorate for Chemicals, Waste, Radiation protection)<br>KernFysische Dienst (Nuclear Safety Department) |
| City or Town: | Den Haag (The Hague)   |
| Main Website: |  |

Comment **# 5218: Wastes that are regulated by the Regulator**

Matrix National - HLW, heat producing, HLW, non heat producing, LILW

|               |   |
|---------------|---|
| <b>Name:</b>  | <b>EZ</b>   |
| Full Name:    | Ministerie van Economische Zaken ( Ministry of Economic Affairs)                                |
| Divison:      | Directoraat-Generaal voor Marktordering en Energie (Directorate-General for Markets and Energy) |
| City or Town: | Den Haag (The Hague)  |
| Main Website: |   |

Comment **# 5219: Wastes that are regulated by the Regulator**

Matrix National - HLW, heat producing, HLW, non heat producing, LILW

|               |   |
|---------------|---|
| <b>Name:</b>  | <b>SZW</b>  |
| Full Name:    | Ministerie van Sociale Zaken en Werkgelegenheid (Ministry of Social Affairs and Employment) |
| Divison:      | Directie Arbeidsveiligheid en -Gezondheid (Directorate for Safety and Health at Work)       |
| City or Town: | Den Haag (The Hague)  |
| Main Website: |   |

## Regulations / Laws

Country: NETHERLANDS

Reporting Year: 2006

|                                 |  |  |     |
|---------------------------------|--|--|-----|
| <b>Name:</b>                    | <b>Kew</b>                             |  |     |
| Title or Name:                  | Kernenergiewet (Nuclear Energy Act)    |  |     |
| Reference Number:               | Staatsblad 82, 1963, last revised 2003 |  |     |
| Date Promulgated or Proclaimed: | 2/21/1963                              |  | Law |

Comment **# 5220: Wastes that are regulated by the Law**  
 Matrix National - HLW, heat producing, HLW, non heat producing, LILW

|                                 |   |  |     |
|---------------------------------|---|--|-----|
| <b>Name:</b>                    | <b>WMO-decree</b>   |  |     |
| Title or Name:                  | Beschikking inzake erkenning Centrale Organisatie voor Radioactief Afval N.V. als ophaaldienst (Decree on establishment of COVRA as recognised waste management organisation) |  |     |
| Reference Number:               | Staatsblad 176, 1987  |  |     |
| Date Promulgated or Proclaimed: | 8/31/1987   |  | Law |

Comment **# 5221: Wastes that are regulated by the Law**  
 Matrix National - HLW, heat producing, HLW, non heat producing, LILW

## Milestones

Country: NETHERLANDS

Reporting Year: 2006

|  |      |           |      |
|--|------|-----------|------|
| Start Year or Reference Year:  | 2006 | End Year: | 2034 |
| Description of Milestone:  |      |           |      |
| <p>The nuclear power plant Borssele started its operational life in 1973. Originally a lifetime of 30 year was foreseen. After technical improvements and evaluation it has been decided to extend the lifetime to 60 years. In 2006 an agreement was signed with the government that approves operation of the npp till 2033. Included in this agreement is the decision for direct dismantling at the end of the operational life.</p>   |      |           |      |
| Start Year or Reference Year:  | 2003 | End Year: | 2130 |
| Description of Milestone:  |      |           |      |
| <p>Between 2003 and 2015 the HABOG building will receive HLW, this is the active phase of the facility. Between 2015 and 2130 HABOG will be in a passive storage phase. From 2130 all LILW, HLW and SF will be placed in a disposal facility, where the waste will be retrievable until the decision is taken for permanent closure.</p>   |      |           |      |
| Start Year or Reference Year:  | 2002 | End Year: |      |
| Description of Milestone:  |      |           |      |
| <p>In April 2002 all shares within COVRA were transferred from the largest waste producers to the State. All shares were transferred to the State because:</p> <ul style="list-style-type: none"> <li>- the n.p.p. Dodewaard stopped the production of electricity in 1997;</li> <li>- the Energy Research Foundation (ECN) placed its nuclear activities in a special business unit (NRG) together with the nuclear activities of KEMA and therefore ECN was no longer interested to hold shares in COVRA;</li> <li>- liberalisation of the electricity market and therefore the n.p.p. Borsele focussed on core-business activities;</li> <li>- no important nuclear activities are expected in the foreseeable future.</li> </ul> <p>As only shareholder acts the Ministry of Finance. This Ministry keeps close contacts with the Ministry of Environment, which is responsible for the general policy of the Netherlands with respect to radioactive waste.</p> |      |           |      |
| Start Year or Reference Year:  | 1994 | End Year: | 2003 |
| Description of Milestone:  |      |           |      |
| <p>In 1994 the preparations were started to obtain a license for the storage building for HLW and SF (HABOG building). After a long legal process, the granted license could be used in 1999. Construction of HABOG started in 1999 and was finished in 2003. In September 2003 the facility was officially inaugurated by HM the Queen Beatrix. The first HLW was stored in the building in November of that year.</p>  |      |           |      |
| Start Year or Reference Year:  | 1984 | End Year: | 1992 |
| Description of Milestone:  |      |           |      |
| <p>Between 1984 and 1987 a site selection procedure was followed to find a site where treatment and long term storage of all the nations radioactive waste could be established. In 1987 COVRA applied for a license (Nuclear Energy Act) for the present site at the Harbour and Industrial Area Vlissingen-Oost. The license was granted in 1989. Construction of waste treatment and storage facilities for LILW took place between 1989 and 1992. All LILW temporarily stored at the Petten site was transferred to the new site between 1992 and 1994.</p>  |      |           |      |



## Milestones

Country: NETHERLANDS

Reporting Year: 2006

|  |      |           |      |
|--|------|-----------|------|
| Start Year or Reference Year:  | 1982 | End Year: | 1992 |
| Description of Milestone:  |      |           |      |
| <p>Seadumping was abandoned.<br/> COVRA was established as national waste management organisation. COVRA started as private company with limited liability (Naamloze Vennootschap or N.V. in Dutch). Shareholders:</p> <ul style="list-style-type: none"> <li>- 30% n.p.p. Borssele (EPZ)</li> <li>- 30% n.p.p. Dodewaard (GKN)</li> <li>- 30% Energy Research Foundation (ECN)</li> <li>- 10% the State of the Netherlands.</li> </ul> <p>The structure changed in 2002 (see milestone 2002)<br/> As an interim solution all LILW was conditioned and stored at the site of the Energy Research Foundation at Petten (Noord-Holland). This ended in 1992, because a new site was opened at the Harbour and Industrial Area Vlissingen-Oost.</p> |      |           |      |
| Start Year or Reference Year:  | 1950 | End Year: | 1982 |
| Description of Milestone:  |      |           |      |
| Seadumping was used as disposal for LILW.  |      |           |      |

## Policies

Country: NETHERLANDS

Reporting Year: 2006

## National Systems

| Policy | (Yes;Partially;No) |
|--------|--------------------|
|--------|--------------------|

|     |  |     |
|-----|--|-----|
| Q14 | Has your Country implemented a national policy for radioactive waste management? | Yes |
|-----|--|-----|

Comment **# 7380: National waste management policy**

Since 1984 the government of the Netherlands follows a straightforward policy based on the principle that hazardous materials must be 'isolated, controlled and monitored'. Main elements of this policy are:

- all kinds and categories of radioactive waste will be stored for at least 100 years above ground in engineered structures which allow retrieval at all times;
- long-term storage, together with a central treatment facility is seen as a normal industrial activity and will be located on one single site;
- research will be performed on final disposal possibilities within the Netherlands or within an international framework;
- COVRA will take care of all the wastes produced.

Direct disposal is not yet feasible in the Netherlands. A disposal site for this type of waste is not available, the public acceptability for deep geologic disposal is low and the small volumes of waste do not yet require an immediate final solution. Also the financial burden of a direct disposal facility is prohibitive for the small quantities concerned. The money can however be generated when a capital growth fund is allowed to grow over a substantial time period.

Long-term storage also allows for the application of future international or regional disposal solutions or even complete new techniques to remove the hazardous constituents.

The choice to store for a long time was well considered and was not taken as a 'wait and see' option. This is clearly demonstrated by the fact that integral parts of the policy are:

- the creation of a capital growth fund;
- a clear choice to transfer the ownership of the waste fully to COVRA.

This policy does not leave the burden of the waste generated today to future generations. Only the execution of the disposal is left as a task for the future, as will be the closing of the disposal site. This is a step-wise approach, where each step can be undone and replaced by another activity if so desired.

| Strategies | (Yes;Partially;No) |
|------------|--------------------|
|------------|--------------------|

|     |   |     |
|-----|---|-----|
| Q15 | Has your country developed strategies to implement a national policy? | Yes |
|-----|---|-----|

| Requirements | (Yes;Partially;No) |
|--------------|--------------------|
|--------------|--------------------|

|     |   |     |
|-----|---|-----|
| Q17 | identified the parties involved in the different steps of radioactive waste management                                      | Yes |
| Q18 | specified a rational set of safety, radiological and environmental protection objectives                                    | Yes |
| Q19 | implemented a mechanism to identify existing and anticipated radioactive wastes   | Yes |
| Q20 | implemented controls over radioactive waste generation  | Yes |
| Q21 | identified available methods and facilities to process, store and dispose of radioactive waste on an appropriate time-scale | Yes |
| Q22 | taken into account interdependencies among all steps in radioactive waste generation and management                         | Yes |
| Q23 | implemented appropriate research and development to support the operational and regulatory needs                            | Yes |
| Q24 | implemented a funding structure and the allocation of resources that are essential for radioactive waste management         | Yes |
| Q25 | implemented formal mechanisms for disseminating information to the public and for public consultation                       | Yes |

## Policies

Country: NETHERLANDS

Reporting Year: 2006

| Responsibilities |   | (Complete;Incomplete) |
|------------------|---|-----------------------|
| Q28              | establish and implement a legal framework for the management of radioactive waste   | Complete              |
| Q29              | establish or designate a regulatory body that has the responsibility for carrying out the regulatory function with regard to safety and the protection of human health and the environment. | Complete              |
| Q30              | define the responsibilities of waste generators and operators of waste management facilities  | Complete              |
| Q31              | provide for adequate resources  | Complete              |
| Q33              | enforce compliance with regulatory requirements   | Complete              |
| Q34              | implement the licensing process   | Complete              |
| Q35              | advise the government   | Complete              |
| Q37              | identify an acceptable destination for the radioactive waste  | Complete              |
| Q114             | comply with legal requirements  | Complete              |

| Activities |  | (Yes;Partially;No) |
|------------|--|--------------------|
| Q43        | perform safety and environmental impact assessments for radioactive waste management facilities  | Yes                |
| Q44        | ensure adequate radiation protection for workers, the general public and the environment   | Yes                |
| Q45        | ensure suitable staff, equipment, facilities, training and operating procedures are available to perform the safe radioactive waste management steps                               | Yes                |
| Q46        | establish and implement a quality assurance programme for the radioactive waste generated or its processing, storage and disposal  | Yes                |
| Q47        | establish and keep records of appropriate information regarding the generation, processing, storage and disposal of radioactive waste, including an inventory of radioactive waste | Yes                |
| Q48        | provide surveillance and control of activities involving radioactive waste as required by the regulatory body  | Yes                |
| Q49        | collect, analyze and, as appropriate, share operational experience to ensure continued safety improvements in radioactive waste management   | Yes                |
| Q50        | conduct or otherwise ensure appropriate research and development to support operational needs in radioactive waste management  | Yes                |

| Clearance |   | (Yes;No) |
|-----------|---|----------|
| Q128      | Does your country have "clearly defined clearance levels based on radiological criteria, with policy statements that material below those levels can be recycled or disposed of with non-radioactive wastes"? | Yes      |
| Q129      | Has your country ever used a "case-by-case" approach to clearing radioactive wastes (excluding spent/disused sealed radioactive sources)?   | No       |
| Q130      | Has your country ever used clearance levels to dispose of, reuse or recycle radioactive waste as non-radioactive waste or as a non-radioactive resource (excluding spent/disused sealed radioactive sources)? | Yes      |

Comment **# 9714: Policies National Systems-Clearance**

Clearance is regularly used for short lived waste in the medical and research area. Waste can be stored for two years maximum at the generator's site to allow for decay under the clearance level. Then the waste is disposed of as non-radioactive material.

Clearance and exemption levels are the same in the national legislation.

## Policies

Country: NETHERLANDS

Reporting Year: 2006

## Disposal Facilities

| Licensing |  | (Yes - All;Yes - Some;No) |
|-----------|--|---------------------------|
| Q53       | Environmental Assessment (EA)  | Yes - All                 |
| Q54       | Environmental Impact Statement (EIS)   | Yes - All                 |
| Q55       | Performance Assessment (PA)  | Yes - All                 |
| Q56       | Quality Assurance (QA)   | Yes - All                 |
| Q57       | Safety Assessment (SA)   | Yes - All                 |
| Q59       | If Quality Assurance is part of your Country's current, waste disposal facility licensing policy, does the QA Program conform to international standards (such as the ISO9000 series)? | Yes - All                 |

| Operation |  | (Yes - All;Yes - Some;No) |
|-----------|--|---------------------------|
| Q60       | Does your Country have formal, documented waste acceptance criteria for its operating or proposed disposal facilities? | Yes - Some                |

## Comment # 351: Acceptance criteria for disposal

There is no operating disposal facility, however waste has to be conditioned according to approved schemes and then it will be suitable for final disposal (reference disposal facility is a deep disposal facility in salt). For LILW and for HLW conditioning schemes are present, not yet for SF.

| Post-Closure |  | (Yes;No) |
|--------------|--|----------|
| Q61          | Does your Country have any written policies to address the maintenance of records that describe the design, location and inventory of waste disposal facilities?   | No       |
| Q63          | Does your Country have any written policies to address active institutional controls or passive institutional controls, such as monitoring or access restrictions? | No       |

## Policies

Country: NETHERLANDS

Reporting Year: 2006

**Processing/Storage**

| <b>Policies/Procedures</b> |  | <b>(Yes;No)</b> |
|----------------------------|--|-----------------|
| Q73                        | waste sorting/segregation  | Yes             |
| Q74                        | waste minimization   | Yes             |
| Q75                        | waste storage  | Yes             |
| Q76                        | processing and/or storing and/or disposing of nuclear fuel cycle waste separately from non-nuclear fuel cycle waste (also known as nuclear applications waste) | No              |
| Q78                        | Does your country have any legislation, regulation, or policy that waste processing must take place prior to storage (see following note)                      | Yes             |
| <b>Implementation</b>      |  | <b>(Yes;No)</b> |
| Q80                        | In your Country are there any waste processing facilities at the same location where the waste is generated?   | Yes             |
| Q81                        | In your Country are there any centralized waste processing facilities?   | Yes             |
| Q82                        | In your Country are there any mobile waste processing facilities?  | Yes             |
| <b>Foreign</b>             |  | <b>(Yes;No)</b> |
| Q121                       | Has your country sent any wastes or spent fuel to another country for processing (reprocessing for fuel)?  | Yes             |
| Q122                       | Will some or all of the product(s) of processing/reprocessing be returned to your country?   | Yes             |
| Q123                       | Currently, are any of your country's wastes (processed or unprocessed, including the products of reprocessing) or spent fuel being stored in another country?  | Yes             |
| Q124                       | Has your country accepted any wastes or spent fuel from another country for processing (reprocessing for fuel)?  | No              |

## Policies

Country: NETHERLANDS

Reporting Year: 2006

**Spent/Disused SRS**

| <b>Registration</b>       |   | <b>(Yes;No)</b> |
|---------------------------|---|-----------------|
| Q84                       | Is there a national level registry?   | Yes             |
| Q85                       | If answer was yes, is the registry used only for disused/spent SRS?   | No              |
| Q87                       | Are there regional-level registries (one or more)?  | No              |
| Q90                       | Are there local-level registries (one or more)?   | No              |
| <b>Procedures</b>         |   | <b>(Yes;No)</b> |
| Q91                       | Does your Country have documented procedures in place to ensure that sealed radioactive sources (SRS) are transferred to secure facilities in a timely manner after their user declares them to be spent? | Yes             |
| <b>Agreements</b>         |   | <b>(Yes;No)</b> |
| Q93                       | Government to Government agreements   | No              |
| Q94                       | Government - Supplier agreements  | No              |
| Q95                       | Supplier-User agreements  | Yes             |
| Q97                       | Do any agreements include suppliers that are outside of your Country?   | Yes             |
| <b>Release / Disposal</b> |   | <b>(Yes;No)</b> |
| Q99                       | Does your Country have any regulations to free-release spent sealed radioactive sources (SRS)?  | No              |
| Q100                      | Has your Country disposed of spent SRS in existing disposal facilities for LILW or HLW waste?   | No              |
| Q101                      | Does your Country plan to dispose of spent SRS in existing or planned disposal facilities for LILW or HLW waste?  | Yes             |
| Q102                      | Has your Country implemented dedicated disposal facilities for spent SRS?   | No              |
| Q103                      | Does your Country have plans to implement dedicated disposal facilities for spent SRS?  | No              |
| <b>Import-Export</b>      |   |                 |
| <b>Radioactive Waste</b>  |   | <b>(Yes;No)</b> |
| Q104                      | Does your Country have laws or Regulations restricting either the import or export of radioactive waste (excluding spent fuel)?   | Yes             |
| <b>Spent Fuel</b>         |   | <b>(Yes;No)</b> |
| Q105                      | Does your Country have laws or Regulations restricting either the import or export of spent fuel?   | Yes             |

## Policies

Country: NETHERLANDS

Reporting Year: 2006

**Liquid HLW****Storage****(Yes;No)**

Q106 Does your Country have high-level liquid wastes in storage? No

**UMMT****Responsibility****(Yes;No)**

Q110 Does your Country have any Uranium Mine and Mill Tailings sites that do not have a designated authority to manage them? No

**Decommissioning****Funding****(Yes - All;Yes - Some;No)**

Q111 Does your Country require that funds should be set aside in support of future waste management activities, such as decommissioning activities? Yes - All

**Facilities****(Yes;No)**

Q119 Does Your Country have any nuclear fuel cycle facilities? Yes

Q120 Does Your Country have any nuclear applications facilities (non fuel cycle facilities)? Yes

**Timeframe****(Yes - All;Yes - Some;No)**

Q112 Does your Country require a time frame for the decommissioning of nuclear fuel cycle facilities once these facilities cease operation? Yes - All

Q113 Does your Country require a time frame for the decommissioning of non-nuclear fuel cycle facilities once these facilities cease operation? No

## Future Outlook

Country: NETHERLANDS

Reporting Year: 2006

**Data not available.**



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