Convention on Nuclear Safety
10th Review Meeting – 2026

Country Review Report for NETHERLANDS

Drafted by Country Group 6

(Albania, Angola, Australia, Austria, Bahrain, Bolivia, Chile, El Salvador, Hungary, Netherlands, Russian Federation, Singapore, Sweden, Uzbekistan)

Rapporteur: Ms. Purva Awasthi

Version: Final

DISCLAIMER: Pursuant to INFCIRC/571/Rev.9, Para. 16-19 and Annex IV, Contracting Parties were invited to comment on the implementation of the CNS reporting guidance. Contracting Parties were also encouraged to submit proposed Good Practices, Challenges, and Suggestions prior to the Review Meeting. The draft Country Review Report documents the preliminary observations identified by the Contracting Parties. The Country Review Report is the result of the CNS Review Process and was agreed by consensus by the Country Group.

1 EXECUTIVE SUMMARY

The Netherlands has 2 nuclear power reactor units 1 is in operation (PWR), and 1 has been permanently shut down (BWR). The Netherlands has plans to build up to four new nuclear power plants. The Netherlands also voluntarily reported on its research reactors; it has 2 research reactors in operation and 1 research reactor under construction.

3 out of 3 Challenges from the previous Review Meeting(s) have been closed. No Suggestions were identified in the previous Review Meeting(s).

The Country Group highlights the following measures to improve safety in the Netherlands' national nuclear programme:

- The Regulation on Basic Safety Standards for Radiation Protection by the Dutch Authority for Nuclear Safety and Radiation Protection (ANVS) entered into force on July 1, 2023.
- Guidelines on the Safe Design and Operation of Nuclear Installations were revised in 2025 and formalised in a policy rule.
- ANVS updated its Supervision and Enforcement Strategy in 2023, including a redesign of the intervention matrix.
- The programme New Initiatives Nuclear (NIN) was launched in 2024 at the ANVS to address new developments
- In 2023, the organizational structure of the ANVS was modified and three departments: Assessment & Advice, Business Operations & Information, and Competent Authority, were created.
- The national government launched a dedicated programme in 2024 through which € 65 million will be invested in the nuclear knowledge infrastructure until the year 2030.
- In 2023, PSR of Borssele NPP was conducted, safety measures were identified and action plan for implementation was developed.

The Country Group highlights the following results of international peer review missions of the Netherlands:

- The IRRS mission, ARTEMIS and IPPAS missions were conducted in 2023. The recommendations and suggestions resulting from these missions are incorporated into an action plan.
- OSART and Pre-SALTO missions were carried out at Borssele NPP in 2023 and 2024 respectively. A followup OSART mission was carried out at Borssele NPP in 2025. A WANO peer review was carried out at Borssele NPP in 2025.
- The second EU Topical Peer Review (TPR) on the topic of 'Fire Protection of nuclear installations' was carried out during 2022-2024.

The Country Group identified the following Challenges for the Netherlands:

- Challenge 1: Continue efforts to provide the ANVS with sufficient human workforce and competences to cope with future developments in the Dutch nuclear capacities.
- Challenge 2: Update the national legal framework, where needed, and continue

preparations by the ANVS for new initiatives concerning conventional NPPs, SMRs and other new technologies such as molten-salt reactors and high temperature gas cooled reactors, as well as preparations for the LTO of NPP Borssele.

In addition, the Country Group identified 5 Areas of Good Performance.

The Country Group concluded that the Netherlands:

- Submitted National Report for the 10th Review Meeting, and therefore complies with Article 5 and on time, following Rule 39 of INFCIRC/573/Rev.8
- Attended the 10th Review Meeting and therefore complies with Article 24.1 of the CNS
- Held a National Presentation and answered questions during the 10th Review Meeting and therefore complies with Article 20.3 of the CNS

2 BASIC INFORMATION ON THE NETHERLANDS' NUCLEAR PROGRAMME

The Netherlands has 2 nuclear power reactor units: 1 is in operation (PWR), and 1 has been permanently shut down (BWR). The Netherlands has plans to build up to four new nuclear power plants.

The Netherlands also voluntarily reported on its research reactors; it has 2 research reactors in operation and 1 research reactor under construction.

3 FOLLOW-UP FROM PREVIOUS REVIEW MEETING(S)

3.1 Challenges

The Netherlands provided the following updates on Challenges identified during previous Review Meeting(s):

Challenge 1: ANVS managing the (need for) fast growing human resources– Recruitment efforts in a tense labor market in competition with industry, – Dealing with the fast growing number of new workers (training/tutoring), – Prevention of existing and new workers leaving (worker satisfaction)

The Netherlands addressed this Challenge by developing a multi-year capacity building plan of ANVS (the Dutch Authority for Nuclear Safety and Radiation Protection). The ANVS is able to manage the workload and attract a significant number of new employees. A traineeship programme for recent graduates was started in September 2025. The ANVS Academy provides structured training and mentoring for new employees and personal development options for existing staff. In 2024, the Government committed financial resources to strengthen nuclear expertise via Human Capital Agenda and a Knowledge and Innovation Programme.

Follow-Up Status: Closed

Challenge 2: Readiness for the developments from the Government plan on nuclear energy and SMRs – Evaluation of nuclear framework (Ministry I&W), – Preparing for (pre-licensing of new NPPs, 2nd LTO, SMRs, ANR (ANVS)

The Netherlands addressed this Challenge by evaluation of Nuclear Framework by the Ministry of I&W and launching of the New Initiatives Nuclear Programme (NIN) at the ANVS. The evaluation carried out by the Ministry of I&W concluded that the current nuclear framework is solid, whilst also noting several points for improvement. The ANVS and the Ministry of I&W also take part in the SMR programme, initiated by the Ministry of Climate and Green Growth. The ANVS internal programme NIN was launched in 2024 to make sure that all chances, challenges, risks and opportunities with respect to the new initiatives, as well as the LTO of NPP Borssele, are consistently addressed and lessons learned are taken into account. Guidelines on the Safe Design and Operation of Nuclear Installations were revised in 2025 and formalised in a policy rule.

Follow-Up Status: Closed

Challenge 3: Attacks on automation systems: The threat of (digital) attacks on automation systems is growing rapidly, both nationally and internationally. The associated risks may increase as more operational technology systems are digitally and remotely controlled. In the nuclear domain, both criminal and state actors are considered as a threat. It is important to remain alert in order to minimise such risks in the nuclear

sectors. ANVS cooperates with LHs and various national security services in this field.

The Netherlands addressed this Challenge by issuing an updated Design Basis Threat (DBT) document in 2023, which places greater emphasis on digital threats to the licence holders (LHs). This updated DBT forms the input for an update of the security packages of the license holders.

Follow-Up Status: Closed

3.2 Suggestions

No suggestion was identified for the Netherlands in the previous Review Meeting.

4 MEASURES TO IMPROVE SAFETY

4.1 Changes to the Regulatory Framework and the National Nuclear Programme

Since the Joint 8th and 9th Review Meeting, the Country Group took note of the following changes to the regulatory framework and the national nuclear programme of the Netherlands:

- In September 2024, the Government reaffirmed the policy to pursue construction of new nuclear power reactors and planned to take the necessary steps for the construction of up to four new nuclear power reactors. The Government also decided to explore the possibility for SMRs in their nuclear new build plans.
- On January 1, 2024, the new Environment and Planning Act came into force, replacing the previous Environmental Protection Act and Environmental Impact Assessment Decree.
- The Ministerial Decree regarding Nuclear Pressure Equipment Regulation, Security and Decommissioning, was amended in January 2025 to include provisions for other pressure equipment. The ANVS Regulation regarding this Ministerial Decree entered into force in January 2025.
- The ANVS Regulation on Basic Safety Standards for Radiation Protection was amended in July 2023.
- The Guidelines on the Safe Design and Operation of Nuclear Installations were revised in 2025 and formalised in a policy rule in Quarter-1 of 2026.
- Lifetime extension for Borssele NPP beyond 2033 is being investigated.
- ANVS updated its Supervision and Enforcement Strategy in 2023, including a redesign of the intervention matrix.
- The Programme New Initiatives Nuclear (NIN) was launched in 2024 at the ANVS to address new developments.
- In 2023, the organizational structure of the ANVS was modified and three departments: Assessment & Advice, Business Operations & Information, and Competent Authority, were created. The modification was aimed to allow for further developments, making business operations more robust, clear division of roles & responsibilities between the layers, strengthening the functions of team leaders, better interaction between organization and board, etc.
- In 2024, the ANVS and the French regulator started a collaboration for a

preparatory review of the Thorizon design (molten salt thorium reactor).

- The transfer of responsibility for 'Evaluating and preparing policies, acts and regulations' to the Ministry of I&W was formalized in 2024 by a change in the Nuclear Energy Act.
- The national government launched a dedicated programme in 2024 through which € 65 million will be invested in the nuclear knowledge infrastructure until the year 2030.
- The Netherlands is seeing increasing interest in nuclear power for maritime applications, including nuclear-powered shipping.

4.2 Safety Improvements for Existing Nuclear Power Plants

The Country Group took note of the following implemented and planned safety measures for existing nuclear power plants in the Netherlands:

- In 2023, the PSR of Borssele NPP was conducted. Planned safety measures from the PSR include improved prevention of station blackout situations, improvements in electrical configurations & emergency power, preventing deviations to the redundancy concept, improved fire protection, updating the probabilistic safety assessment, implementation of a radioactive waste reduction programme, improvements to the emergency response organisation, improvements to the radiation protection programme and reduction of the radiation exposure of workers.

4.3 Response to International Peer Review Missions

The Country Group took note of the following implemented or planned measures in response to the results of international peer review missions:

- The IRRS mission was carried out in 2023. The measures taken to address the recommendations of the IRRS mission include evaluation of nuclear regulatory framework, initiating development of ANVS Integrated Management System (AIM), approach to further implement IAEA safety requirements, safety guides & WENRA safety reference levels, update of requirements related to emergency preparedness & response, etc. Creation of the CaINET system for coordinated emergency response was considered as a Good Practice.
- OSART mission was carried out at Borssele NPP in 2023. The OSART team identified three recommendations, eight suggestions and six good practices. The identified issues are related to the use of non-authorised operating aids and documentation, the need to strengthen the radiation protection practices for contamination control, dose planning and the control of radioactive sources, and to improve chemical control practices. Measures have been implemented to address the issues identified by the mission. A follow-up OSART mission took place in 2025, which concluded that two recommendations and six suggestions have been implemented.
- Pre-SALTO mission was carried out at Borssele NPP in 2024. The pre-SALTO team identified seven suggestions, eight recommendations, two good practices, and four areas of good performance. The identified issues are related to the need for development and implementation of ageing management programmes for mechanical and electrical components, enhancement of ageing management of

civil structures, and an update and implementation of the human resources strategy.

- The second EU Topical Peer Review (TPR) on the topic of 'Fire Protection of nuclear installations' was carried out during 2022-2024. A National Action Plan is being drafted and will be published in 2026.
- WANO peer review was carried out at Borssele NPP in 2025.
- ARTEMIS and IPPAS missions were conducted in 2023. The recommendations and suggestions resulting from these missions are incorporated into an action plan.

The Netherlands has planned EPREV mission for 2027, IPPAS follow-up mission in 2027, IRRS follow-up mission in 2028 and a new full scope ARTEMIS mission in 2029.

5 RESULTS OF THE REVIEW

5.1 Implementation of the Vienna Declaration on Nuclear Safety (VDNS)

On 9 February 2015, the Contracting Parties adopted "Vienna Declaration on Nuclear Safety" (INFCIRC/872), which is a commitment to certain principles to guide them in the implementation of the CNS objective to prevent accidents and mitigate their radiological consequences, should they occur. The Contracting Parties agreed to discuss the principles of the VDNS in their National Reports to the 7th and the subsequent Review Meetings.

The Netherlands reports the following safety improvements to existing nuclear power plants:

- The PSR of Borssele NPP was conducted in 2023 (refer section 4.2)

The Netherlands reports the following enhancements to its regulatory framework for the design, siting and construction of new nuclear power plants:

- Guidelines on the Safe Design and Operation of Nuclear Installations were revised (refer section 4.1).
- ANVS is working on a guidance document which aims to include direct reference to the up-to-date IAEA framework in the licence of NPPs.

The Netherlands reports the following planned activities related to the principles of the VDNS:

- Implementation of planned safety measures from PSR of Borssele NPP (refer section 4.2)

The Country Group made the following observations:

- The national report of the Netherlands addresses compliance with the principles of Vienna Declaration on Nuclear Safety.

5.2 Challenges

The Country Group identified the following Challenge(s) for the Netherlands:

- Challenge 1: Continue efforts to provide the ANVS with sufficient human workforce and competences to cope with future developments in the Dutch

nuclear capacities.

- Challenge 2: Update the national legal framework, where needed, and continue preparations by the ANVS for new initiatives concerning conventional NPPs, SMRs and other new technologies such as molten-salt reactors and high temperature gas cooled reactors, as well as preparations for the LTO of NPP Borssele.

5.3 Suggestions

No Suggestion was identified for the Netherlands

5.4 Good Practices and Areas of Good Performance

During the peer review of the Netherlands' National Report, the Contracting Parties were invited to recommend Good Practices and to highlight Areas of Good Performance.

The following Areas of Good Performance of the Netherlands were commended by the Country Group:

- Area of Good Performance 1: Update of the Supervision and Enforcement Strategy in 2023, including a redesign of the intervention matrix.
- Area of Good Performance 2: Creation by the ANVS of the "New Initiatives Nuclear" programme to monitor, prioritize, and anticipate the resources needed to establish the safety requirements of new projects (Borssele LTO, new nuclear power plants, SMRs) in a timely manner
- Area of Good Performance 3: Launch of ANVS traineeship in 2025
- Area of Good Performance 4: New cooperation agreements signed with Regulatory Bodies of South Africa (2023), France (2023), UK (2024), South Korea (2024), Poland (2024), Sweden (2025) and Finland (2025) by the ANVS.
- Area of Good Performance 5: Publication of revised Guidance on Safe Design and Operation of Nuclear Installations (VOBK) by ANVS, which refers the IAEA safety standards and WENRA safety reference levels.

6 COMPLIANCE WITH THE CNS AND ITS GUIDELINES

6.1 National Reports

Contracting Parties and Officers were invited to provide general comments on the Netherlands' implementation of the obligations of the CNS (e.g. National Report submitted on time, addressed all CNS articles, addressed the VDNS, and addressed all Challenges), transparency issues, and compliance with the CNS guidance documents and Major Common Issues identified at the Joint 8th and 9th Review Meeting.

Regarding the compliance with the requirements of the CNS and its Guidelines, the members of the Country Group made the following observations:

- The Netherlands submitted the National Report for the 10th CNS Review Meeting on time
- The content and structure of the Netherlands' National Report for the 10th Review Meeting complies with the CNS guidance.
- The directions of the Summary Report of the Joint 8th and 9th Review Meeting

were taken into consideration in the Report for the 10th Review Meeting.

6.2 Participation in the Review Process

With regard to the Netherlands' participation in the review process, the members of the Country Group made the following observations.

In the 10th Review Cycle, the Netherlands

- posted 63 questions to other Contracting Parties;
- delivered 135 answers to the questions from other Contracting Parties on time.
- delivered its National Presentation during the 10th Review Meeting.

ANNEX I. GLOSSARY

The Glossary lists the definitions of “Challenge”, “Suggestion”, “Good Practice”, “Area of Good Performance”, and “Major Common Issue” as found in Annex V of INFCIRC/571/Rev. 9.

Challenge

A Challenge is a difficult issue for the Contracting Party and may be a demanding undertaking (beyond the day-to-day activities); or a weakness that needs to be remediated.

Suggestion

A Suggestion is an area for improvement. It is an action needed to improve the implementation of the obligations of the Convention.

Area of Good Performance

An Area of Good Performance is a practice, policy or programme that is worthwhile to commend and has been undertaken and implemented effectively. An Area of Good Performance is a significant accomplishment for the particular Contracting Party although it may have been implemented by other Contracting Parties.

Good Practice

A Good Practice is a new or revised practice, policy or program that makes a significant contribution to nuclear safety. A Good Practice is one that has been tried and proven by at least one Contracting Party but has not been widely implemented by other Contracting Parties; and is applicable to other Contracting Parties with similar programs.

Major Common Issue

A Major Common Issue is an important safety-related issue shared by a significant number of Contracting Parties. Contracting Parties are encouraged to report, as appropriate, on their actions to address the Major Common Issues in their subsequent National Report.