

# 2015 Review Conference of the Parties to the Treaty on the Non-Proliferation of Nuclear Weapons

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## European Union safeguards contribution to the global nuclear non-proliferation regime: safeguards implementation in the European Union\*

### Working paper submitted by the European Union

1. The European Union strongly supports all efforts to strengthen the effectiveness and improve the efficiency of nuclear safeguards.
2. Within the EU, the Euratom Treaty requires that the European Commission satisfies itself that in the territories of the EU Member States (MS), nuclear materials are not diverted from their intended uses as declared by the users. In addition to this primary objective, the Euratom Treaty also provides that the Commission must assure that all EU Member States are in compliance with the obligations of the agreements, concerning peaceful uses of nuclear energy, concluded by the European Atomic Energy Community (or “Euratom Community”) with third States and international organisations such as the IAEA.
3. The Euratom Safeguards system, established in 1957, comprises a set of controls and verification activities covering all civil nuclear installations throughout the EU, and hence provides assurance that all obligations on the peaceful use of nuclear material in the EU are complied with. The system also comprises Treaty provisions on research establishments, a supply agency and a court, all with independent supranational status protected by EU law.
4. The European Commission’s safeguards service in Luxembourg conducts verifications and inspections in the EU MS and draws its own independent conclusions. Its legal mandate is established by the Chapter VII of the Euratom Treaty, a Commission Regulation and two Commission Recommendations.<sup>1</sup> It deploys and, together with Commission’s Joint Research Centre and also with the European Safeguards Research and Development Association, develops world-

\* The present document is issued without formal editing.

<sup>1</sup> Commission Regulation (Euratom) No 302/2005 of 8 February 2005 on the application of Euratom Safeguards. Commission Recommendation of 15 December 2005, on guidelines for the application of Regulation No 302/2005. Commission Recommendation of 11 February 2009 on the implementation of a nuclear material accountancy and control system by operators of nuclear installations.



leading safeguards methodologies and technologies. Outside the EU, the Joint Research Centre implements safeguards projects and develops its technologies in close cooperation with key international partners such as the US, Japan and Canada. The Commission's safeguards service maintains the EU database on civil nuclear materials.

5. On an annual basis, the Commission conducts more than 1200 in-field inspections at over 500 installations. Over 860,000 kg of direct use material are under safeguards. The Commission receives and evaluates over 8500 accountancy reports (representing approximately 1.9 million accounting records) per year. The Commission interacts closely with MS regulatory and safeguards authorities. Policy and direction are determined by the Commission's safeguards service in full respect with MS competences.

### **Euratom Safeguards Cooperation with the IAEA**

6. Twenty-five EU Non-Nuclear Weapons States (NNWS) are party to INFCIRC/193, a Comprehensive Safeguards Agreement (CSA) and an Additional Protocol (AP) with the IAEA. Croatia, the most recent EU MS, holds its own CSA with the IAEA but will accede to INFCIRC/193 in the near future. The two Nuclear Weapons States (NWS) — UK and France — are party to separate trilateral Voluntary Offer Agreements (VOA) with the Commission and the IAEA, each with an Additional Protocol in place.

7. CSAs enable the use of safeguards measures on all declared nuclear material within a State. Through comprehensive safeguards agreements, the IAEA is mandated to verify that States' declarations are correct and complete, that is to confirm that all nuclear material in those States is used solely for peaceful activities. The AP helps to detect undeclared nuclear material, facilities and activities in a State or to detect the misuse of declared facilities. Together, a CSA with an AP provide the IAEA with the best ability to assure that all declared nuclear material remains in peaceful use and that there are no undeclared nuclear material, facilities and activities. For this reason, it is the EU's view that CSAs, together with APs, represent the verification standard and should be the global norm.

8. The European Commission inspects all civil nuclear installations in the EU, including those in the EU Nuclear Weapon States (NWS). In the NNWS, and at selected facilities in the NWS, safeguards activities are carried out jointly between the Commission and the IAEA as foreseen by the Safeguards Agreements. Inspections are carried out by joint teams of Commission and IAEA inspectors to avoid duplication of work and to avoid excess burden on the nuclear operators, whilst still allowing each inspectorate to draw its own independent conclusions. Of the 1200 inspections in the EU during 2014, over 600 were performed jointly between the Commission and the IAEA in a spirit of good cooperation and close collaboration between the Agency and the EU.

9. In conformity with the obligations stemming from the Safeguards Agreements, the Commission provides the IAEA with EU nuclear material accountancy reports. For example, in 2014, over 5400 accountancy reports, relating to installations under IAEA safeguards, were transmitted to the IAEA after being processed at the Commission's headquarters. As such, the Commission operates the inspectorate and act as a unique Regional System of Accounting for and Control of Nuclear Material (RSAC) on which the IAEA safeguards system can rely.

10. Under the AP, it is the Commission's role to provide the periodical declarations on nuclear installations and other locations in the EU NNWS related to the nuclear fuel cycle. The Commission collects all required data on nuclear sites and other locations holding nuclear material either directly from the individual operators, or from the MS. Eleven MS, so called "Side-Letter States" have asked the Commission to collect AP data such as exports of trigger list items, research & development activities and development plans for the nuclear fuel cycle and to transmit these to the IAEA on their behalf, while the other MS report these data directly to the IAEA. During 2014, over 400 AP declarations were provided to the IAEA for the 27 MS under the reporting requirements.

11. In addition, the IAEA has the right to access locations it considers necessary to provide assurance of the absence of undeclared nuclear material, facilities and activities, during so called Complementary Accesses. The Commission was present at all Complementary Accesses in the EU in 2014, where required.

12. The EU continues to firmly support the development and implementation of the IAEA's State Level Concept (SLC). The SLC takes into account all objective safeguards-relevant information available on a State and considers a number of State-Specific Factors, including the effectiveness of State and Regional Systems of Accounting for and Control of nuclear material (S/RSAC), when determining the Agency's verification activities, which allow for tailored approach to each State. The Euratom system of Safeguards, as the common regional system of accountancy and control of nuclear material of all 28 Member States of the EU, is an important factor in the efficient and effective implementation of State-level approaches for EU States. Given the scope of the nuclear fuel cycle in the EU, the Commission's safeguards service may also be considered a model S/RSAC for the wider global community.

13. As the SLC is progressively developed in EU MS over the coming years, the Commission's safeguards service will thereby be in a position to further aid and strengthen the effectiveness and efficiency of the IAEA safeguards system.

### **Nuclear safeguards research and development**

14. The EU reiterates its full support for the work of the IAEA in applying safeguards. In addition to the support provided through the Euratom safeguards system, the EU continues to provide important technical and R&D support to the IAEA through the European Commission's Support Programme (ECSP) — one of the largest support programmes to the IAEA — as well as through the Support Programmes of some EU MS. The ECSP is managed by the Commission's Joint Research Centre.

15. So far, the ECSP has engaged in 132 tasks in the areas of measurement technology, containment, surveillance, and sealing, development of reference materials, information technologies for non-proliferation studies, process monitoring techniques, concepts, approaches and methodologies and training of inspectors. There are currently 45 ongoing tasks, and 874 tasks have been completed since the programme's creation in 1981.

16. Frequently, the ECSP has helped to make technology available to the IAEA for global use which initially had been developed by the JRC for Euratom Safeguards. Two examples may be cited: firstly, the development of the IAEA safeguards analytical on-site laboratory at Rokkasho reprocessing plant in Japan (which

benefited greatly from the experience gained during the design, construction and operation of Euratom's on-site laboratories), and secondly, an advanced combined chemistry spectrometry method to verify fresh nuclear fuel, used by the Commission already for a number of years, and now in full use by the IAEA (so-called category A equipment).

17. In addition, in recent years, five more JRC developments were approved for IAEA safeguards use, the details of which were recently presented to all IAEA Member States at the Safeguards Symposium of October 2014. Moreover, the Commission's support to the IAEA includes analysis of nuclear materials, environmental sample analysis, and the provision of reference and quality control materials. These activities are performed in the framework of IAEA's Network of Analytical Laboratories (NWAL).

18. The value of the support programme, which only provides in-kind contributions, is estimated at around 3-4 million euros per year (JRC institutional funding). The EU also recognizes the need to strengthen the IAEA's capability to provide credible and timely analysis of safeguards samples. Since 2010, the EU has committed more than 10 million euros from the Instrument for Stability to the international project Enhancing the Capabilities of the IAEA Safeguards Analytical Services for the construction of the new IAEA Nuclear Material Laboratory, which was inaugurated in September 2013 and became fully operational in December 2014.

#### **Summary: Towards the future global non-proliferation regime**

19. The EU, through the European Commission's safeguards service has the required technical and legal competencies to work more closely with the IAEA. It is an internationally recognized Regional System of Accounting for and Control of Nuclear Material, and has a long experience of joint safeguards implementation with the IAEA in the EU. It also has a high degree of functional independence that needs to be considered more extensively in the further development of the global non-proliferation regime. All of this is possible based exclusively on the existing legal framework.

20. The EU continues to support the development and implementation of the IAEA's State Level Concept, considering that it will provide the IAEA with the required flexibility in identifying, within each State, the most cost-effective combination of safeguards measures, focusing on key activities necessary to implement effective safeguards. The IAEA's system of safeguards is a fundamental component of the nuclear non-proliferation regime and plays an indispensable role in the implementation of the NPT. IAEA safeguards continually evolve to address new challenges, to learn from experience gained and to introduce new techniques and technologies that benefit safeguards implementation. The EU supports the efforts of the IAEA to strengthen the effectiveness and to improve the efficiency of the Agency's safeguards system.

21. The European Union continues to view the Comprehensive Safeguards Agreement together with the Additional Protocol as the global safeguards standard and verification model.