

# Nuclear Verification

## Objectives

*To deter the proliferation of nuclear weapons by detecting, as early as possible, the misuse of nuclear material or technology, and by providing credible assurances that States are honouring their safeguards obligations. To contribute to nuclear arms control and disarmament by responding to States' requests for verification and other technical assistance associated with related agreements and arrangements. To continually improve and optimize operations and capabilities to effectively carry out the Agency's verification mission.*

## Implementation of Safeguards in 2012

At the end of each year, the Agency draws a safeguards conclusion for each State for which safeguards are applied. This conclusion is based on an evaluation of all safeguards relevant information available to the Agency in exercising its rights and fulfilling its safeguards obligations for that year.

With regard to States with comprehensive safeguards agreements (CSAs), the Agency seeks to conclude that all nuclear material has remained in peaceful activities. To draw such a conclusion, the Agency must ascertain that: first, there are no indications of diversion of declared nuclear material from peaceful activities (including no misuse of declared facilities or other declared locations to produce undeclared nuclear material); and second, there are no indications of undeclared nuclear material or activities in the State as a whole.

To ascertain that there are no indications of undeclared nuclear material or activities in a State, and ultimately to be able to draw the broader conclusion that *all* nuclear material has remained in peaceful activities, the Agency assesses the results of its verification and evaluation activities under CSAs and additional protocols (APs). Thus, for the Agency to draw such a broader conclusion, both a CSA and an AP must be in force in the State, and the Agency must have completed all necessary verification and evaluation activities.

For States that have a CSA but not an AP in force, the Agency draws a conclusion for a given year only with respect to whether *declared* nuclear material remained in peaceful activities, as the Agency does not have sufficient tools to provide credible assurances regarding the absence of undeclared nuclear material and activities in a State as a whole.

For those States for which the broader conclusion has been drawn, the Agency implements integrated safeguards: an optimized combination of measures available under CSAs and APs to maximize effectiveness and efficiency in fulfilling the Agency's safeguards obligations. By the end of 2012, integrated safeguards were implemented for 53 States<sup>1</sup>.

In 2012, safeguards were applied for 179 States<sup>2</sup> with safeguards agreements in force with the

*"In 2012, safeguards were applied for 179 States...with safeguards agreements in force with the Agency..."*

Agency<sup>3, 4</sup>. Of the 114 States that had both a CSA and an AP in force, the Agency concluded that *all* nuclear material remained in peaceful activities in 60 States<sup>5</sup>; for the remaining 54 States, as all the necessary evaluations had yet to be completed, the Agency was unable to draw the same conclusion. For these 54 States, and for the 57 States with a CSA but with no AP in force, the Agency concluded only that *declared* nuclear material remained in peaceful activities.

Safeguards were also implemented with regard to declared nuclear material in selected facilities

<sup>1</sup> Armenia, Australia, Austria, Bangladesh, Belgium, Bulgaria, Burkina Faso, Canada, Chile, Croatia, Cuba, the Czech Republic, Denmark, Ecuador, Estonia, Finland, Germany, Ghana, Greece, the Holy See, Hungary, Iceland, Indonesia, Ireland, Italy, Jamaica, Japan, the Republic of Korea, Latvia, Libya, Lithuania, Luxembourg, Madagascar, Mali, Malta, Monaco, the Netherlands, Norway, Palau, Peru, Poland, Portugal, Romania, Seychelles, Singapore, Slovakia, Slovenia, Spain, Sweden, The former Yugoslav Republic of Macedonia, Ukraine, Uruguay and Uzbekistan.

<sup>2</sup> The 179 States do not include the Democratic People's Republic of Korea, where the Agency did not implement safeguards and, therefore, could not draw any conclusion.

<sup>3</sup> And Taiwan, China.

<sup>4</sup> The status with regard to the conclusion of safeguards agreements, APs and small quantities protocols (SQPs) is given in the Annex to this report.

<sup>5</sup> And Taiwan, China.

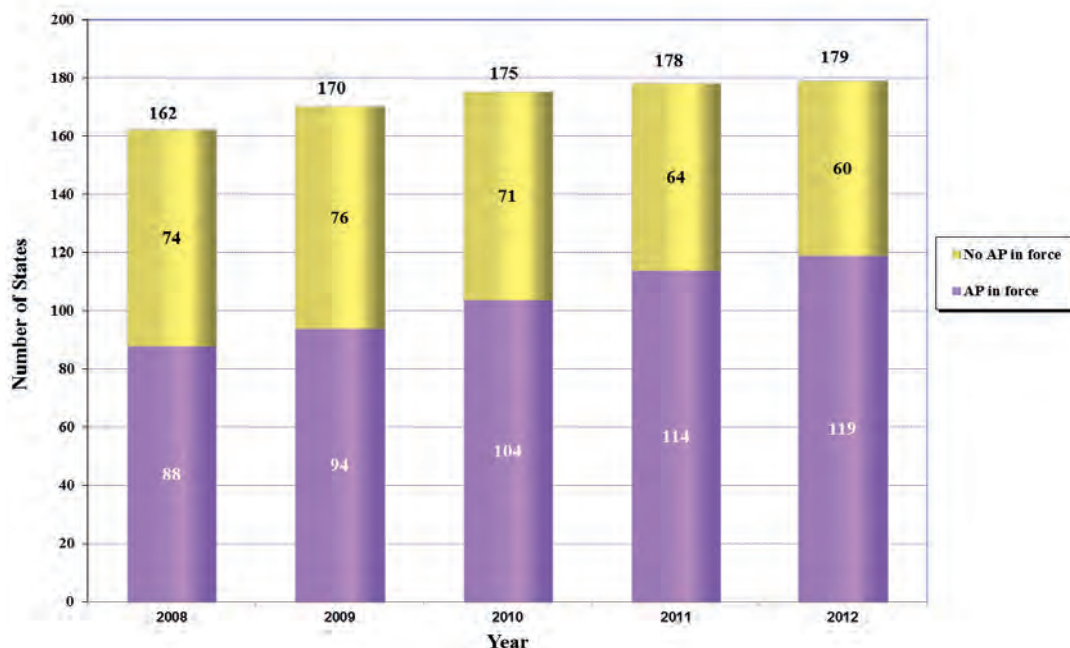


FIG.1. Number of APs for States with safeguards agreements in force, 2008–2012 (the Democratic People’s Republic of Korea is not included).

in the five nuclear-weapon States under their respective voluntary offer agreements. For these five States, the Agency concluded that nuclear material to which safeguards were applied in selected facilities remained in peaceful activities or had been withdrawn from safeguards as provided for in the agreements.

*“The Agency continued to facilitate the conclusion of safeguards agreements and APs, and the amendment or rescission of small quantities protocols (SQPs)...”*

For the three States in which the Agency implemented safeguards pursuant to safeguards agreements based on INFCIRC/66/Rev.2, the Secretariat concluded that the nuclear material, facilities or other items to which safeguards were applied remained in peaceful activities.

As of 31 December 2012, 13 non-nuclear-weapon States party to the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) had yet to bring CSAs into force pursuant to Article III of the Treaty. For these States, the Secretariat could not draw any safeguards conclusions.

## Conclusion of Safeguards Agreements and APs, and Amendment and Rescission of SQPs

The Agency continued to facilitate the conclusion of safeguards agreements and APs, and the amendment or rescission of small quantities protocols (SQPs)<sup>6</sup>. During 2012, a CSA entered into force for one State<sup>7</sup>, and APs entered into force for five States<sup>8</sup>. The status of safeguards agreements and APs as of 31 December 2012 is shown in Table A6 in the Annex to this report. During the year, one State<sup>9</sup> signed a CSA and an AP.

<sup>6</sup> Many States with minimal or no nuclear activities have concluded an SQP to their CSA. Under an SQP, the implementation of most of the safeguards procedures in Part II of a CSA is held in abeyance as long as certain criteria are met. In 2005, the Board of Governors took the decision to revise the standardized text of the SQP and change the eligibility criteria for an SQP, making it unavailable to a State with an existing or planned facility and reducing the number of measures held in abeyance (GOV/INF/276/Mod.1 and Corr.1). The Agency initiated exchanges of letters with all States concerned in order to give effect to the revised SQP text and the change in the criteria for an SQP.

<sup>7</sup> Togo.

<sup>8</sup> Iraq, Namibia, Republic of Moldova, Togo and Vietnam.

<sup>9</sup> Bosnia and Herzegovina.

The Secretariat continued to implement the *Plan of Action to Promote the Conclusion of Safeguards Agreements and Additional Protocols*, which was updated in September 2012. During the year, the Director General wrote to each of the 13 non-nuclear-weapon States party to the NPT which had yet to conclude a CSA to encourage them to bring such an agreement into force. The Agency convened a briefing on the Agency's safeguards for States in the Pacific region (held in Fiji in June 2012), and a regional seminar on safeguards for States in the greater Caribbean region with limited nuclear material and activities (held in Mexico City in June 2012). In addition, consultations on the amendment or rescission of SQPs and the conclusion of safeguards agreements and APs were held throughout the year with representatives from Member and non-Member States in Berlin, Fiji, New York and Vienna, and also during training events organized by the Agency in Vienna and elsewhere.

### *Amendment and rescission of SQPs*

The Secretariat continued to communicate with States in order to implement the Board's 2005 decisions regarding the amendment or rescission of SQPs to reflect the revised standardized text and changed eligibility criteria. During the year, an SQP with one State<sup>10</sup> was amended and two States rescinded their SQPs<sup>11</sup>. This means that 46 States have amended their SQPs and 48 States have yet to amend or rescind their SQPs.

### **Implementation of Safeguards in the Islamic Republic of Iran (Iran)**

During 2012, the Director General submitted four reports to the Board of Governors entitled *Implementation of the NPT Safeguards Agreement and relevant provisions of Security Council resolutions in the Islamic Republic of Iran* (GOV/2012/9, GOV/2012/23, GOV/2012/37 and GOV/2012/55).

In 2012, contrary to the relevant binding resolutions of the Board of Governors and the United Nations Security Council, Iran did not: implement the provisions of its AP; implement the modified Code 3.1 of the Subsidiary Arrangements General Part to its Safeguards Agreement; suspend its enrichment related activities; suspend its heavy

water related activities; or address the Agency's serious concerns about possible military dimensions to Iran's nuclear programme, in order to establish international confidence in the exclusively peaceful nature of Iran's nuclear programme.

While the Agency continued throughout 2012 to verify the non-diversion of declared nuclear material at the nuclear facilities and locations outside facilities (LOFs) declared by Iran under its Safeguards Agreement, as Iran did not provide the necessary cooperation, including not implementing its AP, as required in the binding resolutions of the Board of Governors and the United Nations Security Council, the Agency was unable to provide credible assurance about the absence of undeclared nuclear material and activities in Iran and, therefore, was unable to conclude that all nuclear material in Iran was in peaceful activities.

In light of the Board of Governors' resolution GOV/2011/69 of November 2011 (adopted by a vote), in which, inter alia, the Board had called on Iran to engage seriously and without preconditions in talks aimed at restoring international confidence in the exclusively peaceful nature of Iran's nuclear programme, in 2012 Agency and Iranian officials held seven rounds of talks in Vienna and Tehran, including during a visit by the Director General to Tehran in May 2012, aimed at reaching agreement on a structured approach to the clarification of all outstanding issues related to Iran's nuclear programme.

On 13 September 2012, the Board of Governors adopted, by a vote, resolution GOV/2012/50 in which, inter alia, the Board stressed that it was essential for Iran to immediately conclude and implement such an approach, including as a first step providing the access the Agency had requested to relevant sites. By the end of the year, however, no agreement had been reached on the structured approach and substantive work on the outstanding issues, including those related to the possible military dimensions of Iran's nuclear programme, had yet to begin.

### **Implementation of Safeguards in the Syrian Arab Republic (Syria)**

On 30 August 2012, the Director General submitted a report to the Board of Governors entitled *Implementation of the NPT Safeguards Agreement in the Syrian Arab Republic* (GOV/2012/42). The Director General informed the Board that the Agency had not received any new information from Syria or other Member States that would have an impact on

<sup>10</sup> Antigua and Barbuda.

<sup>11</sup> Ghana and Nigeria.

the Agency's assessment that it was very likely that a building destroyed at the Dair Alzour site was a nuclear reactor which should have been declared to the Agency by Syria.

The Board of Governors, in its resolution GOV/2011/41 of June 2011 (adopted by a vote), had, inter alia, called on Syria to remedy urgently its non-compliance with its NPT Safeguards Agreement and, in particular, to provide the Agency with updated reporting under its Safeguards Agreement and access to all information, sites, material and persons necessary for the Agency to verify such reporting and resolve all outstanding questions so that the Agency could provide the necessary assurances as to the exclusively peaceful nature of Syria's nuclear programme.

In February 2012, in response to an Agency proposal to hold further discussions to address all the outstanding questions, Syria indicated that it would provide a detailed response at a later time, noting the difficult prevailing security situation in the country. The Agency has taken note of Syria's position and has reiterated its request to Syria to hold further discussions to address all the outstanding questions.

For 2012, the Agency was able to conclude for Syria that declared nuclear material remained in peaceful activities.

### Implementation of Safeguards in the Democratic People's Republic of Korea (DPRK)

In August 2012, the Director General submitted a report to the Board of Governors and General Conference entitled *Application of Safeguards in the Democratic People's Republic of Korea* (GOV/2012/36-GC(56)/11), which provided an update of developments since the Director General's report of September 2011.

Since 1994, the Agency has not been able to conduct all necessary safeguards activities provided for in the DPRK's NPT Safeguards Agreement. From the end of 2002 until July 2007, the Agency was not able, and since April 2009 has not been able, to implement any verification measures in the DPRK and, therefore, could not draw any safeguards conclusion regarding the DPRK.

Since April 2009, the Agency has not implemented any measures under the ad hoc monitoring and verification arrangement agreed between the Agency and the DPRK and foreseen in the Initial Actions agreed at the Six-Party Talks. Statements by the

DPRK about uranium enrichment activities and the construction of a light water reactor in the DPRK continued to be deeply troubling.

Although not implementing any verification activities in the field, the Agency continued to monitor the DPRK's nuclear activities by using open source information, satellite imagery and trade information. The Agency also continued to further consolidate its knowledge of the DPRK's nuclear programme with the objective of maintaining operational readiness to resume safeguards implementation in the DPRK.

### Enhancing Safeguards Implementation

In 2012, within its existing legal authority, the Agency continued to seek means for pursuing safeguards implementation that enhance the Agency's ability to provide credible assurances on the peaceful use of nuclear energy and are as effective and efficient as possible. In doing so, the Agency continued to focus on addressing safeguards objectives that are derived from safeguards agreements in a manner that better took into account all safeguards relevant information about a State.

Efforts during the year continued to focus on ways to better integrate verification activities at Headquarters and in the field with those related to performing State evaluations. In addition, the Agency continued to improve internal work practices through, inter alia, clarification of roles and responsibilities, streamlining the evaluation process, and enhancement of Agency oversight to ensure consistency and non-discrimination in the application of safeguards.

### Cooperation with State and regional authorities

The effectiveness and efficiency of Agency safeguards depend, to a large extent, on the effectiveness of State systems of accounting for and control of nuclear material (SSACs) and, where relevant, regional systems (RSACs), and on the level of cooperation between State or regional safeguards authorities and the Agency. The Secretariat routinely meets State and regional authorities to address safeguards implementation issues, such as the quality of operator systems for the measurement of nuclear material, the timeliness and accuracy of State reports and declarations, and the support provided for the Agency's verification activities.

The IAEA SSAC Advisory Service (ISSAS) provides States, at their request, with advice



and recommendations on the establishment and strengthening of SSACs. Although no ISSAS missions were conducted in 2012, preparations for missions to Tajikistan and Romania were initiated. The Agency also organized 12 international, regional and national training courses for personnel responsible for overseeing and implementing SSACs, and participated in meetings or workshops supporting the development of national infrastructures, particularly for States developing a nuclear power programme.

The Agency published the *Guidance for States Implementing Comprehensive Safeguards Agreements and Additional Protocols* (IAEA Services Series No. 21) in March 2012, which contains detailed and up to date practical guidance for States on the implementation of safeguards. The Agency also established a web page (located at [www.iaea.org/safeguards](http://www.iaea.org/safeguards)) providing State and regional authorities with access to associated guidance, forms, templates and other reference documents.

### Information analysis

The analysis of safeguards relevant information is an essential part of evaluating a State's nuclear activities and drawing safeguards conclusions. In drawing its safeguards conclusions, the Agency processes, evaluates and conducts consistency analysis of State declarations, verification data and other safeguards relevant information available to the Agency. In support of this process, the Agency draws on an increasing amount of data from verification activities performed at Headquarters and in the field, including the results from non-destructive assay (NDA), destructive assay (DA), environmental sample analyses and remotely monitored equipment, and from a diverse range of information sources, including satellite imagery, trade data, open sources, and other sources of information. Throughout 2012, the Agency enhanced and diversified its capabilities to acquire and process data, analyse and evaluate information, generate knowledge, and securely distribute information internally. It also continued to investigate new tools and methodologies to streamline and prioritize workflows and processes.

The Agency also analyses an increasing amount of field data, including NDA measurement results, as well as laboratory analysis of samples for DA of nuclear material and from environmental sampling – essential contributions to State evaluations.

In an effort to continuously improve the quality of reporting, the Agency: monitored laboratory

and measurement systems performance; organized international technical meetings; and provided to States training and workshops on nuclear material accounting, including measurement and material balance evaluation concepts. Workshops on the procurement outreach programme yielded reports on suspicious procurement attempts and current procurement trends. Ongoing reviews of technical cooperation projects and procurements provided relevant safeguards input to decision making. Information analysts made important contributions to continuous State evaluations through their analyses of satellite imagery, material balance evaluations, statistical safeguards approaches, field measurements, nuclear material and environmental samples, procurement data, and scientific and technical literature.

*“Throughout 2012, the Agency enhanced and diversified its capabilities to acquire and process data, analyse and evaluate information, generate knowledge, and securely distribute information internally.”*

### Safeguards equipment and tools

Throughout 2012, the Agency ensured that across the world its instrumentation and monitoring equipment vital to the implementation of effective safeguards continued to function as required.

During 2012, 1948 separate pieces of equipment were prepared and assembled into 892 portable and resident NDA systems. By the end of 2012, a total of 153 unattended monitoring systems were in operation worldwide, and the Agency had 1283 cameras connected to 591 systems operating at 251 facilities in 33 States.<sup>12</sup> In addition, the Agency is responsible for maintaining approximately 200 further cameras used jointly with other regional/State authorities. The total number of electronic seals transmitting remote data to Headquarters was 163. By the end of 2012, there were 288 safeguards systems with remote monitoring installed at 118

<sup>12</sup> And Taiwan, China.

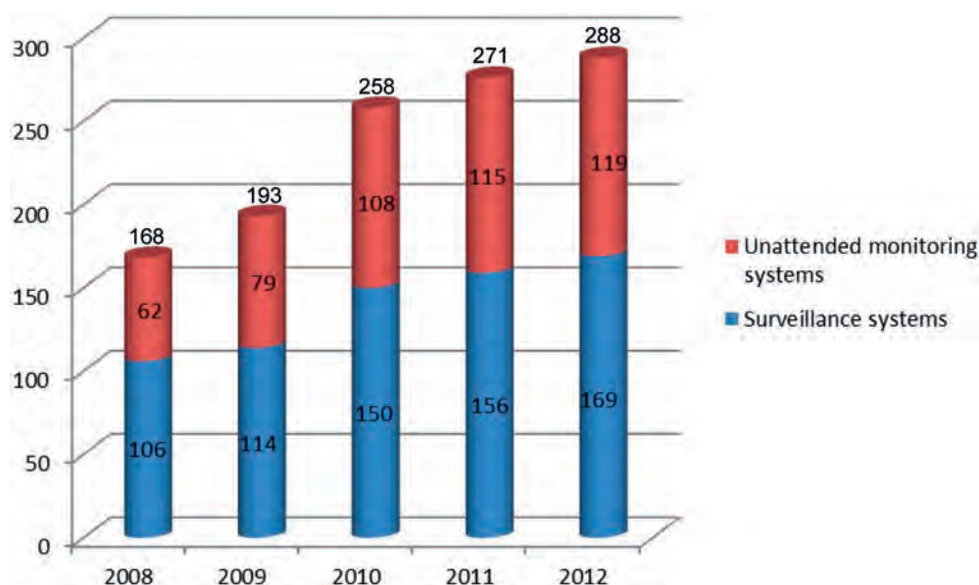


FIG. 2. Implementation of safeguards systems in remote monitoring mode, 2008–2012.

facilities in 22 States<sup>13</sup> (Fig. 2 illustrates the increased use of remote monitoring over the past five years).

Member State Support Programmes continued to provide significant resources to safeguards equipment innovations. During 2012, this contributed, inter alia, towards the successful completion of the Next Generation Surveillance System project and the upgrade of the mini multichannel analyser, along with numerous other improvements and upgrades aimed at achieving better standardization of safeguards instrumentation.

*“Throughout the year, numerous workshops were held to further international cooperation in addressing safeguards needs...”*

Throughout the year, numerous workshops were held to further international cooperation in addressing safeguards needs, as well as technical meetings to evaluate techniques with potential safeguards applications, such as image processing and inertial navigation. A security policy for the development of instrumentation was also established.

In 2012, the Agency refurbished its surveillance laboratories and began work on the assembly and long term testing area for unattended monitoring systems.

<sup>13</sup> And Taiwan, China.

The Network of Analytical Laboratories (NWAL) consists of the Safeguards Analytical Laboratories (SAL) and 20 other qualified laboratories in Australia, Brazil, France, Hungary, Japan, the Republic of Korea, the Russian Federation, the United Kingdom and the USA, as well as of the European Commission. In 2012, the NWAL was enlarged by two laboratories — from Australia and the Republic of Korea, for particle analysis of environmental samples and bulk analysis of environmental samples, respectively. Additional laboratories in the areas of environmental and/or nuclear material sample analysis are in the process of qualification in Argentina, Belgium, Canada, China, France, Hungary, the Netherlands and the USA. In 2012, SAL analysed all nuclear material samples (506) collected by inspectors in the field and 949 sub-samples from environmental swipe sampling were analysed in the NWAL (including at SAL). Proficiency tests and quality procedures were applied to ensure the correctness and accuracy of all results.

## Support

### *Developing the safeguards workforce*

As demands on its workforce evolve, so does the Agency’s training curriculum. In 2012, the Agency conducted 117 safeguards training courses for safeguards staff, including its revised ‘Introductory Course on Agency Safeguards’. Training courses were developed, improved or updated in order to provide all safeguards staff with the necessary competencies. Examples of such training included a complementary access exercise; an analytical

skills workshop; a nuclear fuel cycle indicators course; and advanced training in fuel cycle facilities supporting State evaluation. Advanced training on a range of more specialized areas was also organized, including proliferation indicators for different types of nuclear fuel cycle facilities. Training on safeguards activities at facilities and at Headquarters was complemented by seven new courses including an advanced uranium gas centrifuge enrichment plant course, a course on analytical techniques for State evaluation and a course on preparing and conducting complementary access in a facility involved in research and development in reprocessing.

The Agency's long-standing, ten month Safeguards Traineeship Programme graduated six participants in 2012 — from Central African Republic, Chile, Malaysia, Namibia, South Africa and Sudan.

### Quality management

In 2012, improvements were made to the safeguards reporting processes, including the statements provided to States on the verification activities performed in the field and the reporting of verification activities internally within the Agency. Quality audits were conducted on the handling and processing of surveillance media and review of surveillance data, the radiation protection programme and the training of Safeguards Analytical Services staff. Training courses were provided on management system tools, such as the corrective action report system, the document management system and internal quality audits. The safeguards cost calculation methodology has been improved, performance indicators for monitoring the efficiency of safeguards processes have been developed and knowledge management efforts focused on retaining the critical knowledge of retiring staff were conducted. Development was started of a role based access system to streamline controls over internal access to safeguards information.

### Standing Advisory Group on Safeguards Implementation

The Standing Advisory Group on Safeguards Implementation (SAGSI) held two series of meetings in 2012, at which, inter alia, it considered: efforts to further the application of the State level concept; internal guidance on preparing State level safeguards approaches for States with CSAs; and the Agency's safeguards information management systems. Australia hosted a meeting of the SAGSI working

group and provided a tour of mines and conversion facilities, in support of SAGSI's consideration of safeguards activities at the front end of the nuclear fuel cycle.

## Significant Safeguards Projects

### ECAS

To maintain and strengthen its capabilities to provide independent and timely analysis of environmental and nuclear material samples, the Agency continued and expanded the project



FIG. 3. View of the construction activities for the Nuclear Material Laboratory in Seibersdorf, Austria, November 2012.

entitled Enhancing Capabilities of the Safeguards Analytical Services (ECAS). Construction of the Nuclear Material Laboratory (NML) building progressed on schedule and within budget, reaching 70% completion in 2012 (Fig. 3). The building is expected to be approved for operation in mid-2013. Thereafter, a phased transition of functions from the old Safeguards Analytical Laboratory to the NML

*“Construction of the Nuclear Material Laboratory (NML) building progressed on schedule and within budget, reaching 70% completion in 2012...”*

will commence, extending into 2014 when the old laboratory will be fully vacated. Construction of additional non-laboratory space for the NML and of site infrastructure is expected to be completed in 2015.

In the Environmental Sample Laboratory, the Agency's first multi-collector inductively coupled

plasma mass spectrometer was brought into service to further improve the precision of analysis of uranium and plutonium particles collected through environmental swipe sampling. A laser ablation module was procured to further complement this technology.

In 2012, significant progress was also made in defining requirements and designing the infrastructure and security components necessary for efficient, sustainable laboratory operations. With the help of continuing support from Member States, and in order to minimize long term costs and avoid interruptions to analytical services during the transition, additional activities were incorporated into the project during 2012. These activities, financed exclusively through extrabudgetary funding, lifted the total project budget to an approved €80.82 million.<sup>14</sup>

### *Information technology*

In 2012, the Agency continued to make improvements to the overall performance and security of its safeguards information systems. To further strengthen the capability to protect confidential information, the Agency started using a highly secure internal network. Stricter measures were enforced to encrypt all newly configured laptops, and industry standard best practices and process improvements were implemented.

*“In 2012, significant progress was also made in defining requirements and designing the infrastructure and security components necessary for efficient, sustainable laboratory operations.”*

To provide better support for analytical capabilities, two new systems were developed and released and a new collaborative analysis platform was developed. Several systems, including the ‘State

<sup>14</sup> The additional activities are explained in the report of the Director General contained in document GOV/INF/2012/15, Enhancing Capabilities of the Safeguards Analytical Services: Delivery of Fully Integrated Safeguards Laboratories at Seibersdorf (6 September 2012).

File’, became available in the highly secure internal network and continue to mature. Advancements in IT security included the enhancement of forensic IT capabilities with more mature and standardized procedures and reporting methodologies. The entire firewall infrastructure was upgraded with new hardware and software.

### *MOX fuel fabrication plant in Japan*

Construction of the MOX fuel fabrication plant in Japan (J-MOX), which had been suspended following the major earthquake of March 2011, resumed in April 2012. Design information verification was performed in October 2012 to verify the conformity of the basement construction of the main process building. The conceptual design of some safeguards equipment, as well as testing of some prototype equipment that will be needed at the plant, were finalized.

### *Chernobyl*

The objective of the Chernobyl Safeguards Project is to develop safeguards approaches and instrumentation for routine safeguards implementation at the Chernobyl facilities. The Agency is involved in the early design stages in order to integrate appropriate safeguards measures in an effective and efficient manner. During 2012, discussions took place with the Chernobyl site operator and State Regulatory Authority concerning the construction schedule for the New Safe Confinement and the Interim Storage Facility for Spent Nuclear Fuel No. 2, and the submission of revised design information. Construction of the spent fuel conditioning and dry storage facility is now expected to be in operation in 2015. The New Safe Confinement over the damaged Reactor Unit 4 is expected to be completed in 2016.

### **Preparing for the Future**

The long term strategic planning process for the Agency’s nuclear verification programme, which began in 2012, addresses the conceptual framework for safeguards implementation, legal authority, technical capabilities (expertise, equipment and infrastructure) as well as the human and financial resources necessary for the Agency’s verification efforts. It also considers communication, cooperation and partnerships with the Agency’s stakeholders and sets in motion various improvements. In 2012, the



Agency also began implementation of the *Medium Term Strategy 2012–2017*.

Research and development are essential to meet the safeguards needs of the future. The Agency prepared the *Department of Safeguards Long-Term R&D Plan, 2012–2023*. This document outlines the capabilities that are needed to achieve its strategic objectives and for which Member State R&D support is needed. In doing so, the Plan covers a number of topics, including concepts and approaches, detection of undeclared nuclear material and activities, safeguards equipment and communication, information technology, analytical services and training.

To address near term development objectives and to support the implementation of its verification activities, the Agency continued to rely on Member State Support Programmes (MSSPs) in implementing

its *Research and Development Programme for Nuclear Verification 2012–2013*. At the end of 2012, 20 States<sup>15</sup> and the European Commission had formal support programmes with the Agency, supporting over 300 tasks, valued at over €20 million per year. During 2012, the Secretariat finalized the review of its R&D activities implemented in 2010–2011 and published the *Biennial Report on the Research and Development Programme for Nuclear Verification 2010–2011*, which presented its accomplishments over this two year period.

---

<sup>15</sup> Argentina, Australia, Belgium, Brazil, Canada, China, the Czech Republic, Finland, France, Germany, Hungary, Japan, the Republic of Korea, the Netherlands, the Russian Federation, South Africa, Spain, Sweden, the United Kingdom and the USA.