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**THIS ACTION IS FUNDED BY THE EUROPEAN UNION**

**ANNEX II**

of the Commission Implementing Decision on the Annual Action Plan for the European Instrument for International Nuclear Safety Cooperation for 2021

**Action Document for Safe management of spent fuel and radioactive wastes**

**ANNUAL PROGRAMME 2021**

This document constitutes the annual work programme within the meaning of Article 110(2) of Regulation (EU, Euratom) 2018/1046, and action plans within the meaning of Article 7 of Regulation (Euratom) 2021/948.

1 SYNOPSIS

Action Summary Table

<b>1. Title OPSYS business reference Basic Act</b>	Action document for safe management of spent fuel and radioactive wastes OPSYS/CRIS INSC/2021/43-278  Financed under Council Regulation (Euratom) 2021/948 of 27 May 2021 establishing a European Instrument for International Nuclear Safety Cooperation complementing the Neighbourhood, Development and International Cooperation Instrument – Global Europe on the basis of the Treaty establishing the European Atomic Energy Community, and repealing Regulation (Euratom) No 237/2014 <sup>1</sup>
<b>2. Team Europe Initiative</b>	No
<b>3. Zone benefiting from the action</b>	The action shall be carried out in the Neighbourhood East (Georgia), Iraq and Central Asia  The action shall be carried out at the following location: Tbilisi, Bagdad, Bishkek, Dushanbe and Tashkent
<b>4. Programming document</b>	European Instrument for International Nuclear Safety Cooperation Multiannual Indicative Programme (2021-2027) of 03.12.2021 (C(2021) 8687)
<b>5. Link with relevant MIP(s) objectives/expected results</b>	This action is contributing to the “Responsible and safe management of spent nuclear fuel and radioactive waste, including environmental remediation”
<b>PRIORITY AREAS AND SECTOR INFORMATION</b>	
<b>6. Priority Area(s), sectors</b>	Nuclear Safety
<b>7. Sustainable Development Goals (SDGs)</b>	Main SDG: 16 (strong institutions) Other significant: SDG 11 (Disaster Risk Reduction) and SDG 5 (Gender)

<sup>1</sup> OJ L 209, 14.6.2021, p. 79.

	Equality).			
<b>7 a) DAC code(s)</b>	23510			
<b>7 b) Main Delivery Channel @</b>	1000 – Public institutions			
<b>9. Targets</b>	<input type="checkbox"/> Migration <input type="checkbox"/> Climate <input type="checkbox"/> Social inclusion and Human Development <input type="checkbox"/> Gender <input type="checkbox"/> Biodiversity <input type="checkbox"/> Education <input type="checkbox"/> Human Rights, Democracy and Governance <sup>2</sup>			
<b>9. Markers <sup>3</sup> (from DAC form)</b>	<b>General policy objective @</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Principal objective</b>
	Participation development/good governance	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	Aid to environment @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Gender equality and women's and girl's empowerment	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Trade development	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reproductive, maternal, new-born and child health	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Disaster Risk Reduction @	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	Nutrition @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<b>RIO Convention markers</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Principal objective</b>
	Biological diversity @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Combat desertification @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Climate change mitigation @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Climate change adaptation @	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>11. Internal markers<sup>4</sup> and Tags<sup>5</sup>:</b>	<b>Policy objectives</b>	<b>Not targeted</b>	<b>Significant objective</b>	<b>Principal objective</b>
	Digitalisation @	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<sup>2</sup> Thematic target for geographic programmes (at least 15%) in delegated act.

<sup>3</sup> For guidance, see <https://www.oecd.org/development/financing-sustainable-development/development-finance-standards/> (go to “Data collection and resources for reporters”, select Addendum 2, annexes 18 (policy) and 19 (Rio) of the reporting directive).

If an action is marked in the DAC form as contributing to one of the general policy objectives or to RIO principles as a principal objective or a significant objective, then this should be reflected in the logframe matrix (in the results chain and/or indicators).

<sup>4</sup> The internal markers have been created to report on the implementation of the Commission's own policy priorities in areas where no DAC reporting tool is available. For the sake of consistency and comparability, the methodology is equivalent to the DAC markers, with three possible positions (main target, significant target, not targeted)

<sup>5</sup> Methodology for additional tagging providing granularity on internal markers is under development.

	Tags: digital connectivity digital governance digital entrepreneurship job creation digital skills/literacy digital services		<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Connectivity @ Tags: transport people2people energy digital connectivity	<input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	Migration @ (methodology for tagging under development)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Reduction of Inequalities (methodology for marker and tagging under development)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Covid-19	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

### BUDGET INFORMATION

<b>12. Amounts concerned</b>	<p>Budget line: 14 06 0100</p> <p>Total estimated cost: EUR 26,903,000</p> <p>Total amount of EU budget contribution EUR 17,200,000</p> <p>This action is co-financed in joint co-financing by:</p> <ul style="list-style-type: none"> <li>- Sweden for an amount of EUR 500,000 <sup>6</sup>;</li> <li>- USA for an amount of USD 1,750,000 <sup>7</sup>;</li> <li>- France for an amount of EUR 160,000;</li> <li>- EBRD for an amount of EUR 6,943,000.</li> </ul>
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### MANAGEMENT AND IMPLEMENTATION

<b>13. Type of financing</b>	<p>Component A: Indirect management with the Swedish International Development cooperation Agency (SIDA)</p> <p>Component B: Indirect Management with Expertise France International (EFI)</p> <p>Component C: Indirect Management with the European Bank for Reconstruction and Development (EBRD)</p>
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#### Summary of the Action

In accordance with the Multi Annual Indicative Programme 2021-2027<sup>8</sup>, the overall objective of the action is to provide support in the safe management of radioactive wastes and spent nuclear fuel as well as in environmental remediation of former nuclear sites, which contributes to climate change adaptation. This action will be implemented in a COVID-19 context and adapted as necessary for a successful completion.

<sup>6</sup> Being currently negotiated between Georgia and Sweden

<sup>7</sup> Being currently negotiated between Georgia and USA

<sup>8</sup> C(2021)8687

## 2 RATIONALE

### 2.1. General Context

Regulation EURATOM 2021/948 of 27 May 2021 defines the strategic framework for the implementation of the European Instrument for International Nuclear Safety Cooperation (INSC) 2021 – 2027<sup>9</sup>. Deriving from the legal basis the Multi-annual Indicative Programme 2021-2027<sup>10</sup> has been adopted on 03 December 2021. In its article 2, the Regulation describes the “responsible and safe management of spent fuel and radioactive waste and the decommissioning and remediation of former nuclear sites and installations, including the promotion of transparency in decision-making processes of the authorities in third countries” as one of the objectives of the Instrument.

### 2.2. Problem Analysis

#### **Short problem analysis:**

#### **Component A: Georgia – Improving radioactive waste management at the Saakadze centralised waste management centre and enhancing the Georgian regulatory capabilities**

Georgia does not have any nuclear power plant. The operation of its only nuclear research reactor IRT-M was stopped in 1988. All the reactor fuel (spent and fresh) has been repatriated to Russia. The reactor operator – E. Andronikashvili Institute of Physics (IoP) - has conducted decontamination and processing of waste generated from the decommissioning which is kept at the premises of IoP (now known as a Applied Research Centre of IoP) at the Centralized Storage Facility (CSF). The site also hosts some liquid radioactive waste generated during the operation of the research reactor.

Georgia also operates “Radon” type closed near surface solid radioactive waste disposal vaults and radioactive liquid storage tanks at the Saakadze site. Both sites are now operated by the newly established Department of Radioactive Waste Management (DRWM).

Cooperation between Georgia and the European Commission started in 2004. Support has been provided to the regulatory body (Agency for Nuclear and Radiation Safety of Georgia – ANRS) in the frame of the TACIS and the INSC programmes in particular. Support is also provided to the operators of the two radioactive waste management sites (CSF and Saakadze). Previous EU projects evidenced a number of safety concerns for both of these sites. The main deficiencies found were: (i) the absence of an effective operator of the Saakadze site, (ii) The absence of security systems at the Saakadze site, (iii) the deteriorated conditions of the underground tanks at Saakadze (one of which containing contaminated liquid) and (iv) the major improvements needed for the safety at the CSF, leading to the implementation of important reforms in 2015-2016.

These reforms established a new independent regulatory body – the Agency of Nuclear and Radiation Safety (ANRS). ANRS Department for Radioactive Waste Management (DRWM) was established to operate a Centralized Storage Facility (CSF) and the Saakadze disposal. The functions of DRWM are clearly defined by the law “On Nuclear and Radiation Safety” and the law “On Radioactive Waste”. Although these laws do not guarantee full independence between the ANRS and the DRWM, they constitute a significant improvement from the preceding situation. ANRS takes several measures to enhance its activity to regulate and control nuclear and radiation activity within the country: a new inspection system was developed, twelve new regulations (including Basic Safety Standards - BSS) were developed and approved during the last 5 years, and a new electronic system was established for communication with licensees and licence seekers. An IAEA (International Atomic Energy Agency) Integrated Regulatory Review Service (IRRS) mission held in 2018 identified as ‘good practice’ that ANRS leverages the government of Georgia’s single

<sup>9</sup> COUNCIL REGULATION (Euratom) 2021/948 of 27 May 2021 establishing a European Instrument for International Nuclear Safety Cooperation complementing the Neighbourhood, Development and International Cooperation Instrument – Global Europe on the basis of the Treaty establishing the European Atomic Energy Community, and repealing Regulation (Euratom) No 237/2014

<sup>10</sup> (C/2021/8687)

window portal to communicate with licensees, and allow submission of license applications and annual reports through an electronic portal, which has led to a significant increase in compliance with annual reporting requirements. According to the national legal requirements ANRS is also responsible for the preliminary assessment of incidents (accidents) and leads the activity for mitigation of their consequences. A number of activities are planned to ensure effective fulfilment of ANRS's functions. One notable event was EU support to ANRS - providing a mobile laboratory for emergency response, environmental monitoring and other radiological assessments conducted on site.

The most important achievement in radioactive waste management was the development of the country's national strategy for 2017-2031 (based on the support of the Swedish Radiation Safety Authority SSM). One of the main goals set by this strategy is the establishment of a central waste management centre for processing (treatment and conditioning), storage and disposal of all radioactive waste present in the country. It is assumed that achieving this goal will provide enhancement of safety for radioactive waste management, and increase the protection level for humans and the environment from the hazardous impact of radioactive waste. Simultaneously, it allows to develop an integrated system for radioactive waste management. Other factors, which were considered in defining the given goals are the following:

- Existing CSF cannot meet all safety requirements;
- CSF cannot be reconstructed to meet safety requirements;
- CSF building seismic resistance does not meet requirements for the seismic zone.

Following the strategy goals, two EU projects were implemented for the design and safety assessment of new storage and waste processing facilities. During the process, the Saakadze site was selected for allocation of all radioactive waste management facilities. The statement was officially approved by Georgian government decision.

Additionally, a number of activities were also conducted by the operator to enhance the safety and security of the CSF and the Saakadze sites:

The proposed project is a logical continuation of the ongoing projects, and will provide country support for commissioning of the new waste management facilities, and other measures to enhance the safety level in nuclear and radiation field in accordance with international standards and requirements. It is assumed that the buildings for new waste management facilities will be constructed using local funds.

The proposed budget will be used to perform the 5 upgrading activities mentioned AND in work on commissioning for Saakadze site (storage and processing). The distribution of the budget over the activities is to be determined later once the contribution from other donors -*inter alia* USA and Sweden- is known and in discussion with ANRS and SSM the defined outcomes will be fixed in (a) contract(s).

Previously under INSC AAP 2017<sup>11</sup> and 2019<sup>12</sup>, projects for Georgia were planned and all directed solely to developing Saakadze site, not support to working of Agency for Nuclear and Radiation Safety of Georgia (ANRS) itself. The 2017 project was completed. The 2019 project succeeding is still ongoing. The presently proposed 2021 project, besides support to working of ANRS itself, is in part dedicated to succeed the still running 2019 project on Saakadze site with an estimated budget of EUR 5 million. However as mentioned above, the exact distribution of EU contribution to each activity will depend also on not yet finalised contributions from other donors. The present state of working with ANRS is that with the support of the previous project and the currently running one, the necessary plans and documents for approval of the site construction will be available -foreseeably- by the years 2023 - 2024. Then with the funds allocated under the project now planned, it is foreseen to support equipping the site for commissioning. A new component in working with ANRS in that project, *since not addressed so far*, will be to bring its organisation, regulatory and technical ability further up to international and European standards. Whereby the exact measure of achievement will be fixed in the agreement between Sweden and the EU to implement this project.

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<sup>11</sup> Commission implementing decision of 21.6.2017 on the Annual Action Programme 2017 for Nuclear Safety Cooperation to be financed from the general budget of the Union; C(2017) 4212 final

<sup>12</sup> Commission implementing decision of 12.7.2019 on the Annual Action Programme 2019 for Nuclear Safety Cooperation to be financed from the general budget of the Union; C(2019) 5169 final

## **Component B: Iraq- Strengthening the capabilities of the radioactive waste management organisation**

The EU Project to enhance the overall capabilities of the regulatory body Radiation Protection Center (RPC) implemented by a Consortium led by ANDRA (France) has just been successfully completed. It assisted RPC and its personnel in all aspects of their mission, including improvement of the regulatory infrastructure, the licensing process and licensee oversight, the regulation and oversight of nuclear safety and radiation protection of radioactive waste (RW) management activities, as well as decommissioning and remediation. The aim was to achieve, in all regulatory activities, a level of efficiency in line with international standards, consistent with EU best practice and IAEA recommendations. The project included support to the licensing process of the planned Al-Tuwaitha RW Disposal Facility (ATDF) close to Baghdad.

Lessons learnt from these activities are:

- RPC became aware of the necessity of establishing a national radioactive waste management plan in Iraq and a radioactive waste inventory;
- RPC got acquainted with licensing of RW disposal facilities and, in particular, their nuclear safety assessment;
- RPC got acquainted with principles and practice of inspections of nuclear installations and more generally with operation of radioactive waste disposal facilities. It gained a clearer picture of what was still missing in Iraq to meet international standards.

Furthermore, a need has been identified for support to Iraq in:

- Adequate legal requirements and governmental support to the regulatory body;
- Adequate working procedures;
- A waste management plan based on a precise inventory of waste and possible technical solutions;
- Training and building safety culture for inspections;
- Definition of site selection criteria for a disposal site.

Based on these findings, France wishes to pursue the RPC capacity building referring to the Standards applied in EU, and at the IAEA. France is willing to support RPC in establishing global nuclear safety capacity building to protect the environment from radiological risk.

## **Component C: Central Asia – contribution to the Environmental Remediation Account for Central Asia**

The EU led initiative to address the issue of environmental remediation of former uranium sites needs international support to finance necessary activities. The corresponding remediation works will help the beneficiary countries (the Kyrgyz Republic, Tajikistan and Uzbekistan) to contribute to SDGs 3 (Good Health and Well-Being), 6 (Clean Water and Sanitation) and 15 (Life on Land).

The current situation for the projects funded by the EBRD Multi-donor fund is:

- the Kyrgyz Republic: The remediation works at the Shekaftar and Min-Kush sites in the Kyrgyz republic are progressing at high speed and the completion of both remediation projects is now expected for November 2021. Both Shekaftar and Min-Kush settlements are visibly transformed by the removal of contaminated waste material and dilapidated structures. Work at another site Mailuu-Suu will start in 2022;
- Uzbekistan: There has been significant progress in Uzbekistan that enable the start of Environmental Remediation operations in 2021. The administrative restructuring took place to allow project implementation at the Yangiabad and Charkesar uranium legacy sites;
- Tajikistan: the situation in Tajikistan remains uncertain due to visibly cumbersome national decision-making processes and administrative bottlenecks slowing them even further.

It must be noted that with the additional EU contribution proposed under the current Annual Action Programme, the EBRD will be able to cover 100% of needs in Kyrgyzstan and Uzbekistan, that motivates the EU proposal. All environmental remediation activities (as described and budgeted in the corresponding feasibility studies financed by previous INSC projects) will therefore be successfully implemented and completed at the five sites in the two countries. Any new contribution to overcome the current funding gap of EUR 40 million will be conditional on a formal commitment from Tajikistan.

**Identification of main stakeholders and corresponding institutional and/or organisational issues (mandates, potential roles, and capacities) to be covered by the action:**

The government of Georgia will receive support from the Swedish Radiation Safety Authority (SSM) for the implementation of the 2016 new law on radioactive waste; according to this law, radioactive waste management on behalf of the state is now conducted by the recently established Department for Radioactive Waste Management (DRWM), which operates the Centralized Storage Facility (CSF) and the Saakadze disposal site. Directly, the increased safety will benefit the population of Georgia and its neighbouring countries.

The Beneficiary of the Project is the Ministry of Environment (MoEN) of Iraq and the End-User is the Iraqi Regulatory Body, the Radiation Protection Centre (RPC) within the MoEN. The Ministry of Science and Technology (MoST) of Iraq is also indirectly involved in the project.

The main stakeholder for Central Asia is the European Bank for Reconstruction and Development that is operating an international fund (the Environmental Remediation Account for Central Asia – ERA) which is financing the necessary activities to implement the EU programme addressing the uranium legacy sites for the benefit of the government, the local authorities and the population of the Kyrgyz Republic, Tajikistan and Uzbekistan.

### 2.3. Lessons Learnt

Extensive and broad experience has been gained in successfully implementing similar activities in other third countries, both in the framework of the TACIS Nuclear Safety Programme and the Instrument for Nuclear Safety Cooperation (INSC). This experience will be used in optimising the design and implementation of this action.

The 2021 proposals build on previous INSC projects successfully implemented in the past years in Georgia, Iraq and Central Asia:

- In the period 2012-2015 two INSC projects –“Support of the operators (G4.01/08 Survey and strategic assessment of Georgian radwaste disposal and interim storage sites (CSF)” and ”G4.01/09 Support to the operators in the preparation of Safety Assessment Reports for Georgian radwaste disposal and interim storage sites (CSF)”;
- Project (IQ13.01/14) “Support to the Regulatory Body of Iraq on Radioactive Waste Management, Decommissioning of Nuclear Facilities and Remediation of Contaminated Sites” was signed on 10 February 2016 between the EC and an international consortium led by ANDRA (Agence Nationale pour la Gestion des Déchets Radioactifs in France);
- In Central Asia, a series of environmental impact assessment and feasibility projects have been implemented to define the best remediation options for each priority site. This initial phase of the EU’s environmental remediation flagship programme for uranium legacy sites in Central Asia has been successfully completed and the corresponding remediation activities have started financed by an international donors’ fund managed by the EBRD.

### 3 DESCRIPTION OF THE ACTION

#### 3.1. Objectives and Expected Outputs

The overall objective is to contribute to the sound management of the programme, to the achievement of its expected results and objectives and to the measurement, analysis and reporting on its impact.

#### 3.2. Indicative Activities

##### **Component A: Georgia – Improving radioactive waste management at the Saakadze centralised waste management centre and increasing the Georgian regulatory capabilities**

The action aims at improving the safety of radioactive waste management in the country and to support the implementation of the national radioactive waste management strategy prepared by the Georgian authorities in collaboration with the Swedish radiation regulatory authority SSM.

The proposed project has also wider goal to support Georgian regulatory body the Agency of Nuclear and Radiation Safety (ANRS) in its activity to conduct effective state regulation and control of nuclear and radiation activity and actions for emergency response on any nuclear and radiological incident and accident.

The main tasks, implemented and co-funded by Sweden (with potentially a US contribution as well) are as follows:

- Identify needs and provide support for development of regulatory functions in ANRS:
  - Upgrading the Integrated management System (IMS) within ANRS (QMS, knowledge management, record producing and keeping system and others);
  - Upgrading ANRS capability to conduct regulatory review and assessment of nuclear and radiation activity (medical and industrial application of ionization radiation, scientific activity, radioactive waste management, public exposure and others);
  - Upgrading of ANRS capability to conduct inspection of nuclear and radiation activity medical and industrial application of ionization radiation, scientific activity, radioactive waste management, public exposure and others);
  - Upgrading of ANRS capability for emergency response;
  - Technical support to ANRS (purchasing equipment, necessary software) to increase its effectiveness.
- Conducting commissioning of radioactive waste storage and processing facilities.

##### **Component B: Iraq- Strengthening the capabilities of the radioactive waste management organisation**

The overall objective is to build the necessary national framework for handling radiological issues for the population and the environment, by acquiring key knowledge and capacities.

##### **Task B1: Training in site selection and evaluation**

The planned Iraqi site for hosting low level radioactive waste is selected by the MoST, and the related data for characterizing the site is available in documented reports. However, the site is still not licensed to accept the disposal of radioactive waste. Following IAEA Safety Standards, this license can only be granted following the completion of a comprehensive safety assessment, based on thorough knowledge of the waste inventory and a detailed description of the disposal facility design. As a result, the training programme is twofold:

- Methodology used in France by the waste management organization to devise a safety case encompassing the characteristics of the planned site for disposal. The main points to be analyzed are:
  - geology
  - hydrology
  - hydrochemistry
  - meteorology
  - local human activities to be potentially impacted by the disposal facility

- Methodology used in France for the effective regulatory review of the above mentioned safety case. This includes the competences and processes needed for the evaluation of the selected site, leading to the licensing of the disposal facility.

ANDRA's teams will train and recommend RPC on how to perform the site characteristics' review, to identify which, if any, of the requested information is missing, and to confirm any additional site surveys to be proposed by the future licensee when necessary.

IRSN teams will provide insights into the regulatory review process and competence building in the field of safety and radiation protection, dedicated to the evaluation of a low level waste disposal site.

Training sessions can be complemented by tutoring programmes involving Iraqi staff on specific technical areas.

### **Task B2 Evaluation of input data robustness of radioactive waste inventory, radioactive waste characterization methods and radioactive waste acceptance criteria development**

The site radiological capacities are derived from the radiological forecast inventory and the impact of the water transfer scenario in normal and altered scenarios (water wells). The normal evolution scenario considers containment performance of the disposal system (waste packages, disposal vaults during the operational and closure phases).

The waste manager (MoST) must intervene in the waste disposal development process in order to ensure its consistency, to build up a safety assessment and to define the waste criteria in accordance. The regulatory body (or TSO) must evaluate the adequacy of the waste disposal development process with regard to international safety standards (such as IAEA standards), national objectives of protection and best practices in safety and radiation protection.

The licensing of a disposal facility is partly based on the confidence given to the characterization of waste and the waste streams safety.

The RPC will be trained in understanding the methodology followed in France by ANDRA (approved by the IRSN and the ASN, French Nuclear Safety Authority) to evaluate the following data provided by the waste generators:

- the implementation and follow-up of the radiological and chemical inventory (both for existing and future waste);
- the characterization methods and identification of the adequate ratios for long-lived radionuclides and others that are difficult to measure;
- the development of waste acceptance criteria related to the waste, waste form, container, produced waste package on the mechanical, radiological, physico-chemical and quality assurance aspects.

In addition, IRSN will provide a training programme focused on the regulatory review of such data provided by the waste management organization. It encompasses:

- the development of in-house and external competences to perform the regulatory review;
- the establishment of a R&D program dedicated to the evaluation of risks induced by the radiological inventory itself and the uncertainties associated to this inventory;
- the processes and tools necessary to assess the safety of the disposal facility with regards to the radiological inventory and uncertainties here above mentioned.

### **Task B3 Regulatory standards operation procedures (SOPs) for authorization and inspection of decommissioning, remediation, radioactive waste treatment, storage and disposal facilities.**

ANDRA and IRSN will host numerous technical visits on its operated and closed sites to allow RPC practice simulated inspections of decommissioning, remediation, radioactive waste treatment, storage and disposal facilities.

In addition, training and tutoring will be proposed to develop operation procedures on the one hand and evaluate their adequacy with regard to nuclear safety and radiation protection standards and practices on the other hand.

**Task B4 Development of the inspection programme.**

IRSN participates on a regular basis in most inspections carried out by the authorities (ASN or public bodies). A training programme on the development of an inspection programme will be proposed, dedicated to ensuring the compliance of nuclear facilities (with a specific focus on the context of a low level waste disposal facility) to national standards and references, including safety guides developed by the regulatory body or TSO.

The regulatory body will be trained on the establishment of reference documents used for inspections and on the development of the inspection programme. The focus will lie on the capacity building of *in situ* measurements by operational radiation protection specialists who also participate in the IRSN emergency preparedness and response activities.

**Task B5 Development of safety guides and standards operation procedures for regulatory review and assessment of the authorization document of nuclear installations.**

In order to facilitate the definition of a national policy and a national strategy for ensuring a high level of safety and protection, especially for radioactive waste management, that complies with best international standards and practice, a sound documentation of the regulatory review is to be developed by the regulatory body and/or TSO.

IRSN will support the regulatory body in drafting the list of necessary documents (guides, processes and procedures) which would eventually form the basis of the regulatory review activities. A specific focus will be made on the regulatory review of safety documents related to the licensing of nuclear facilities, especially waste disposal facilities. This support can be performed through a training programme and/or workshops on specific aspects of the regulatory review and assessment functions.

**Task B6 Development "Quality assurance and quality control programme" for ALPHA spectroscopy in the nuclear analytical laboratory at RPC laboratory.**

Iraq is envisaging the establishment of a mobile radiochemical laboratory to be used by the future operator (Ministry of Science and Technology – MoST) of the near-surface radioactive waste disposal and the RPC. The use of such equipment requires the application of international standards to guarantee the quality and repeatability of measurements on the waste or environmental samples. Measurement capabilities of environmental samples and sources of radiation (including waste forms) are seen as essential for the development of assessment capacities for the regulatory body and/or TSO. Furthermore, the assurance that measurements can be performed according to acknowledged standards and international best practice is of the highest importance. Depending on the radionuclides to be detected in such samples of waste forms, the development of a QA/QC program to ensure the compliance of laboratory measurements with these standards and practices is therefore an important aspect of the regulatory body and TSO capacity building.

IRSN will present the QA/QC programme designed by its environmental measurements laboratory, which is the French reference lab for such radiological measurements. A visit of the facilities located near Paris will complement the training.

The training on this topic could be beneficial for both RPC and the MoST operators.

**Component C: Central Asia- contribution to the Environmental Remediation Account for Central Asia**

The overall objective is to assist the beneficiary countries in addressing environmental issues related to former nuclear mining activities.

On 8 November 2018, an international donors' conference was held at the European Bank for Reconstruction and Development in London. Central Asian States under Kyrgyz leadership called upon international solidarity to address the issue of uranium mining legacy sites in the region. Six donors pledged

EUR 17.16 million of which EUR 10 million by the European Commission on behalf of the European Union. Component C aims at pursuing the effort and to continue the EU commitment to solve the environmental issue in the region. Although the remaining gap for the full implementation of the environmental programme remains significant, the additional contribution will finance all the projects planned at the priority sites in Kyrgyzstan and Uzbekistan.

### 3.3. Mainstreaming

Safe management of radioactive wastes as well as environmental remediation in partner countries includes capacity building that is achieved in particular by means of specific training. In all these activities, the European Commission promotes the participation of women as part of gender equality.

### Environmental Protection & Climate Change

- The activities described under chapter 3.2 above contribute directly to the protection of the environment by enhancing the safe storage of radioactive wastes and implementing environmental remediation of former uranium mining and milling activities.

### Outcomes of the EIA (Environmental Impact Assessment) screening

- Environmental Impact Assessment has been carried out for all the three components during the preparatory phase and resulted in the design of activities fully compliant with the highest safety standards.

### 3.4. Risks and Lessons Learnt

Category	Risks	Likelihood (H/M/L)	Risk level (H/M/L)	Mitigating measures
Legality and regularity aspects	Delay on elaboration of legal documents	L	L	Project effective management. Involvement of national and international experts
External environment	(Component A) Delay in providing the facilities in Georgia	M	M	Project effective management and good understanding of the task content and set goals
Planning, processes and systems	(Component A) Delay on the project implementation in Georgia due to late implementation of the previous project or due to some problems during implementation of the current project	L	L	Project effective management. Involvement of different experts, conducting of project implementation assessment
External environment	(Component B) Delay in project implementation in Iraq due to local instability	M	M	Project effective management. Involvement of national and international experts and strong communication channels and coordination with local authorities
Planning, processes and systems	(Component C) Delay in the execution of the work and/or overrun of the available budget.	L	L	Detailed environmental impact assessments and feasibility studies including cost estimates have been completed.

**Lessons Learnt:**

Permanent and timely communication is key for the successful implementation of the activities in the partner countries. Close cooperation is fully established with Georgia and the EBRD (that implements the environmental remediation activities in Central Asia). The situation is more difficult in Iraq where nevertheless the European Commission benefits from the contacts established by the Delegation of the European Union at Ministerial level.

### 3.5. The Intervention Logic

The projects contribute to enhanced radiation safety level in the beneficiary countries and regions and develop radioactive waste management system in line with national strategies according to best international standards. By creating a safe radioactive waste repository in Georgia and Iraq and environmentally safe conditions at the Central Asia nuclear legacy sites, the risk of unwarranted exposure to radiation of the public and the environment will be reduced.

### 3.6. Logical Framework Matrix

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
Impact	1 Responsible and safe management of spent fuel and radioactive waste (transport, pre-treatment, treatment, processing, storage, disposal), including decommissioning and remediation of former nuclear sites and installations.  Contribution to Good governance	Activities strengthening waste management organisations and/ or the respective nuclear regulators implemented	0% (2021)	100% (2026)	Project documentation / evaluation reports.	
	2 Responsible and safe management of spent fuel and radioactive waste (transport, pre-treatment, treatment, processing, storage, disposal), including decommissioning and remediation of former nuclear sites and installations.  Contribution to Aid to the environment and Disaster risk reduction	Activities to manage spent fuel and radioactive waste including decommissioning and remediation of former nuclear sites and installations according to national regulations and in line with EU Acquis implemented	0% (2021)	100% (2026)	Project documentation / evaluation reports.	
	3. Gender equality and Women's and Girl's Empowerment	Activities with equal access for women	0% (2021)	100% (2022)	Project documentation	

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
Outcomes to Impact 1	1.1 Georgia – Improving radioactive waste management at the Saakadze centralised waste management centre and increasing the Georgian regulatory capabilities	Project addressing the regulator and waste management organisation in Georgia implemented	0% (2021)	100% (2026)	Project documentation	Georgia remains committed to develop the centralized waste management centre at Saakadze
	1.2 Iraq - Strengthening the capabilities of the radioactive waste management	Project strengthening the radioactive waste management organisation of Iraq implemented	0% (2021)	100% (2026)	Project documentation	Iraq remains committed to align waste management practices with international best practice.
Outcome to Impact 2	2.1 Central Asia: Contribution to EBRD fund for the remediation of legacy uranium mining sites	Contribution made	0% (2020)	100% (2022)	EBRD data	EBRD will continue managing and implementing this fund
Output to Outcome	1.1.1. Updated Integrated management system for the regulatory functions in Georgia	Status of management system towards certification ISO:9000	No audit report (2020)	80% (2025)	Project documentation	ANRS will remain committed

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
	1.1.2 Upgrading ANRS capability to conduct regulatory review and assessment of nuclear and radiation activity (medical and industrial application of ionization radiation, scientific activity, radioactive waste management, public exposure and others)	New Regulation in line with EU Acquis (BSS 2013)	Tbd (2021)	100% (2026)	Official documentation	Georgia remains committed to align regulation to international and EU best practice
	1.1.3 Upgrading of ANRS capability to conduct inspection of nuclear and radiation activity medical and industrial application of ionization radiation, scientific activity, radioactive waste management, public exposure and others	Percentage of inspectors/ assessors trained in line with new regulation	0% (2020)	80% (2026)	Training certificates	Georgia remains committed to align regulation to international and EU best practice
	1.1.4. Upgrading of ANRS capability for emergency response	National exercises performed	0 (2020)	1(2025)	Exercise report	National exercise will be possible to plan.
	1.1.5. Conducting commissioning of radioactive waste storage and processing facilities	Centralised waste management facility commissioned	10% (design finalised) (2020)	100% (2025)	Official documentation	Georgia will finance the construction through own means

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
Output to Outcome 1.2.	1.2.1. Training in site selection and evaluation for radioactive waste storage	Trained staff on site selection according to practice in line with EU Acquis	0 (2020)	5 (2025)	Training certificates	Iraq remains committed to align with international best practice
	1.2.2. Evaluation of input data robustness of radioactive waste inventory, radioactive waste characterization methods and radioactive waste acceptance criteria development	Established QA process to ensure input data robustness	0% (2020)	80% (2025)	Project documentation	Iraq remains committed to align with international best practice
	1.2.3 Regulatory standards operation procedures (SOPs) for authorization and inspection of decommissioning, remediation, radioactive waste treatment, storage and disposal facilities	Trained staff on regulatory practices in line with EU Acquis	0% (2020)	80% (2025)	Training certificates	Iraq remains committed to align with international best practice

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
	1.2.4. Development of the inspection programme.	Established inspection programme	0% (2020)	100% (2025)	Project documentation	Iraq remains committed to align with international best practice
	1.2.5. Development of safety guides and standards operation procedures for regulatory review and assessment of the authorization document of nuclear installations	Safety guides developed	0 (2020)	1 (2025)	Project documentation	Iraq remains committed to align with international best practice
	1.2.6. Development of safety guides and procedures for authorization, review and assessment, and inspection of cyclotron facilities.	Safety guides developed	0% (2020)	1 (2025)	Project documentation	Iraq remains committed to align with international best practice
	1.2.7. Development "Quality assurance and quality control programme" for ALPHA spectroscopy in the nuclear analytical laboratory at RPC laboratory.	State of the QA programme	0% (2020)	100 % (2025)	Audit report	No embargo on the supply of Radioactive sources for calibration of the alpha spectrometer

Results chain		Indicator	Baseline (value & ref year)	Target (value & ref year)	Data source	Assumptions
Output to Outcome 2.1.	2.1.1. EBRD will be enabled to perform a larger part of the Central Asian environmental remediation programme	Activities contracted by EBRD	32% (2020)	44% (2022)	EBRD reports	Other donors will keep their commitments.

## 4 IMPLEMENTATION ARRANGEMENTS

### 4.1. Financing Agreement

In order to implement this action, it is not foreseen to conclude a financing agreement with the partner country for any of the components A, B & C.

### 4.2. Indicative Implementation Period

The indicative operational implementation period of this action, during which the activities described in section 3 will be carried out and the corresponding contracts and agreements implemented, is 76 months from the date of adoption by the Commission of this Financing Decision.

Extensions of the implementation period may be agreed by the Commission's responsible authorising officer by amending this Financing Decision and the relevant contracts and agreements.

### 4.3. Implementation Modalities

The Commission will ensure that the EU appropriate rules and procedures for providing financing to third parties are respected, including review procedures, where appropriate, and compliance of the action with EU restrictive measures<sup>13</sup>.

#### *4.3.1 Indirect management with a Pillar assessed entity*

##### **Component A: Georgia – Improving radioactive waste management at the Saakadze centralised waste management centre and increasing the Georgian regulatory capabilities**

This action may be implemented in indirect management with the Swedish International Development cooperation Agency (SIDA). This implementation entails all activities detailed under chapter 3.2 (Component A). The envisaged entity has been selected using the following criteria: SIDA is co-funding the activities and is working with the Swedish Radiation Safety Authority (SSM) that has the necessary competences and privileges (as e.g. tax exemptions) for the project implementation.

If negotiations with the above-mentioned entity fail, that part of this action may be implemented in indirect management with the Science and Technology Center in Ukraine (STCU). The implementation by this alternative entity would be justified because of the following criteria: STCU has the necessary competences and privileges (as e.g. tax exemptions) for the project implementation.

##### **Component B: Iraq - Strengthening the capabilities of the radioactive waste management organisation**

This action may be implemented in indirect management with the French International Development Aid (Expertise France International – EFI). This implementation entails all activities detailed under chapter 3.2 (Component B). The envisaged entity has been selected using the following criteria: EFI is co-funding the activities has the necessary competences and privileges (as e.g. tax exemptions) for the project implementation. EFI is working with the Agence Nationale pour la gestion des Déchets Radioactifs (ANDRA) that has an in-depth knowledge of the local situation based on previous preparatory project and all the necessary technical competences.

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<sup>13</sup> [www.sanctionsmap.eu](http://www.sanctionsmap.eu). Please note that the sanctions map is an IT tool for identifying the sanctions regimes. The source of the sanctions stems from legal acts published in the Official Journal (OJ). In case of discrepancy between the published legal acts and the updates on the website it is the OJ version that prevails.

## Component C: Central Asia – contribution to the Environmental Remediation Account for Central Asia

This action may be implemented in indirect management with the European Bank for Reconstruction and Development (EBRD). This implementation entails all activities detailed under chapter 3.2 (Component C). The envisaged entity has been selected using the following criteria: EBRD manages the international multi-donor Environmental Remediation Account for Central Asia under the supervision of the Assembly of Contributors (including the European Union). EBRD has the necessary competences and privileges (as e.g. tax exemptions) for the project implementation.

### 4.3.2 Change from indirect management to direct management due to exceptional circumstances

In case of exceptional circumstances preventing the implementation of any of the three component through indirect management, it will be necessary to launch a call for tender.

The geographical eligibility in terms of place of establishment for participating in procurement and grant award procedures and in terms of origin of supplies purchased as established in the basic act and set out in the relevant contractual documents shall apply.

The Commission’s authorising officer responsible may extend the geographical eligibility on the basis of urgency or of unavailability of services in the markets of the countries or territories concerned, or in other duly substantiated cases where application of the eligibility rules would make the realisation of this action impossible or exceedingly difficult (Article 28(10) NDICI-Global Europe Regulation).

### 4.4. Indicative Budget

	<b>EU contribution (amount in EUR)</b>	<b>Indicative third party contribution (amount in EUR)</b>
4.3.1 Indirect Management		
<b>Component A: Georgia - Improving radioactive waste management at the Saakadze centralised waste management centre and increasing the Georgian regulatory capabilities</b>		
Indirect Management with SIDA	5,500,000	Sweden/USA (2,000,000 Tentative)
<b>Component B: Iraq - Strengthening the capabilities of the radioactive waste management organisation</b>		
Indirect Management with EFI	1,700,000	France (160,000)
<b>Component C: Central Asia – contribution to the Environmental Remediation Account for Central Asia</b>		
Indirect Management with EBRD	10,000,000	Other EBRD donors (6,943,000)
<b>Evaluation</b> – cf. section 5.2 <b>Audit</b> – cf. section 5.3	will be covered by another Decision	N.A.

<b>Communication and visibility</b> – cf. section 6	N.A.	N.A.
<b>Total</b>	17,200,000	9,103,000

#### 4.5. Organisational Set-up and Responsibilities

The implementation of component A will be done by indirect management through the Swedish International Development cooperation Agency (SIDA) and/or STCU.

The implementation of component B will be done by indirect management through the French International Development Aid (Expertise France International – EFI).

The implementation of component C, will be done by direct contribution to the European Bank for Reconstruction and Development (EBRD).

As part of its prerogative of budget implementation and to safeguard the financial interests of the Union, the Commission may participate in the above governance structures set up for governing the implementation of the action.

## 5 PERFORMANCE MEASUREMENT

### 5.1. Monitoring and Reporting

The day-to-day technical and financial monitoring of the implementation of this action will be a continuous process, and part of the implementing partner’s responsibilities. To this aim, the implementing partner shall establish a permanent internal, technical and financial monitoring system for the action and elaborate regular progress reports (not less than annual) and final reports. Every report shall provide an accurate account of implementation of the action, difficulties encountered, changes introduced, as well as the degree of achievement of its results (outputs and direct outcomes) as measured by corresponding indicators, using as reference the Logframe matrix (for project modality).

The Commission may undertake additional project monitoring visits both through its own staff and through independent consultants recruited directly by the Commission for independent monitoring reviews (or recruited by the responsible agent contracted by the Commission for implementing such reviews).

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The indicators, corresponding data source and baseline are indicated in the logframe matrix above. Arrangements for monitoring and reporting will be specified in the terms of reference annexed to the indirect management including the mandatory schedule and the stakeholder responsible.

### 5.2. Evaluation

Having regard to the nature of the action, a final evaluation will not be carried out for this action or its components.

In case an evaluation is not planned, the Commission may, during implementation, decide to undertake such an evaluation for duly justified reasons, either on its own decision or on the initiative of the partner.

The evaluation reports shall be shared with the partner country and other key stakeholders following the best practice of evaluation dissemination<sup>14</sup>. The implementing partner and the Commission shall analyse the conclusions and recommendations of the evaluations and, where appropriate, in agreement with the partner

<sup>14</sup> See best [practice of evaluation dissemination](#)

country, jointly decide on the follow-up actions to be taken and any adjustments necessary, including, if indicated, the reorientation of the project.

The financing of the evaluation shall be covered by another measure constituting a Financing Decision.

### 5.3. Audit and Verifications

Without prejudice to the obligations applicable to contracts concluded for the implementation of this action, the Commission may, on the basis of a risk assessment, contract independent audit or verification assignments for one or several contracts or agreements.

## 6 COMMUNICATION AND VISIBILITY

Communication and visibility is a contractual obligation for all entities implementing EU-funded external actions to advertise the European Union's support for their work to the relevant audiences.

To that end they must comply with the instructions given in the [Communication and Visibility Requirements of 2018](#) (or any successor document), notably with regard to the use of the EU emblem and the elaboration of a dedicated communication and visibility plan, to be completed for every action at the start of implementation.

These obligations apply equally, regardless of whether the actions concerned are implemented by the Commission, the partner country (for instance, concerning the reforms supported through budget support), contractors, grant beneficiaries or entrusted entities. In each case, a reference to the relevant contractual obligations must be included in the respective financing agreement, procurement and grant contracts, and delegation agreements.

Communication and visibility measures may be funded from the amounts allocated to the action. For the purpose of enhancing the visibility of the EU and its contribution to this action, the Commission may sign or enter into joint declarations or statements, as part of its prerogative of budget implementation and to safeguard the financial interests of the Union. Visibility and communication measures should also promote transparency and accountability on the use of funds.

Effectiveness of communication activities on awareness about the action and its objectives as well as on EU funding of the action should be measured.

Implementing partners shall keep the Commission and concerned EU Delegation/Office fully informed of the planning and implementation of specific visibility and communication activities before work starts. Implementing partners will ensure adequate visibility of EU financing and will report on visibility and communication actions as well as the results of the overall action to the relevant monitoring committees.

Implementing organisations shall coordinate all communication activities with the respective EU Delegations as well as regional communication initiatives funded by the European Commission to the extent possible. All communication strategies developed as part of this action shall ensure they are in line with the priorities and objectives of regional communication initiatives supported by the European Commission and in line with the respective EU Delegation's country-specific communication strategy.

## APPENDIX REPORTING IN OPSYS

An Intervention<sup>15</sup> (also generally called project/programme) is the operational entity associated to a coherent set of activities and results structured in a logical framework aiming at delivering development change or progress. Interventions are the most effective (hence optimal) entities for the operational follow-up by the Commission of its external development operations. As such, Interventions constitute the base unit for managing operational implementations, assessing performance, monitoring, evaluation, internal and external communication, reporting and aggregation.

Primary Interventions are those contracts or groups of contracts bearing reportable results and respecting the following business rule: ‘a given contract can only contribute to one primary intervention and not more than one’. An individual contract that does not produce direct reportable results and cannot be logically grouped with other result reportable contracts is considered a ‘support entity’. The addition of all primary interventions and support entities is equivalent to the full development portfolio of the Institution.

Primary Interventions are identified during the design of each action by the responsible service (Delegation or Headquarters operational Unit).

The level of the Primary Intervention is defined in the related Action Document and it is revisable; it can be a(n) (group of) action(s) or a (group of) contract(s).

Tick in the left side column one of the three possible options for the level of definition of the Primary Intervention(s) identified in this action.

In the case of ‘Group of actions’ level, add references to the present action and other action concerning the same Primary Intervention.

In the case of ‘Contract level’, add the reference to the corresponding budgetary items in point 4.5, Indicative Budget.

N.B. An individual Contract that does not produce direct reportable results and cannot be logically grouped with other result reportable Contracts is considered a ‘support measure’.

<b>Option 1: Action level</b>		
<input checked="" type="checkbox"/>	Single action	Present action: all contracts in the present action
<b>Option 2: Group of actions level</b>		
<input type="checkbox"/>	Group of actions	
<b>Option 3: Contract level</b>		
<input type="checkbox"/>	Single Contract 1	
<input type="checkbox"/>	Single Contract 2	
<input type="checkbox"/>	Single Contract 3	
<input type="checkbox"/>	Group of contracts 1	

<sup>15</sup> For the purpose of consistency between terms in OPSYS, DG INTPA, DG NEAR and FPI have harmonised 5 key terms, including ‘Action’ and ‘Intervention’ where an ‘Action’ is the content (or part of the content) of a Commission Financing Decision and ‘Intervention’ is a coherent set of activities and results which constitutes an effective level for the operational follow-up by the EC of its operations on the ground. See more on the [concept of intervention](#)