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# BACKGROUND INFORMATION

## Partner country

The Islamic Republic of Iran.

## Contracting authority

The European Union (EU), represented by the European Commission (EC).

## Country background

The Partner country of this Action is Iran.

On 14 July 2015, the E3/EU+3 (China, EU, France, Germany, Russia, UK and USA, with the High Representative of the Union for Foreign Affairs and Security Policy) and Iran reached an agreement on a Joint Comprehensive Plan of Action (JCPoA), the full implementation of which will ensure the exclusively peaceful nature of Iran's nuclear programme.

The JCPoA includes the necessary verification to ensure the exclusive civil nature of the Iranian nuclear programme as well as specified areas for civil-nuclear cooperation. In particular, Annex III of the documents provides a detailed description of the future cooperation in civil nuclear cooperation which largely is covered by activities funded by the EU under the Instrument for Nuclear Safety Cooperation.

The EU has a special responsibility as the leader of the negotiations that have produced the JCPoA. Annex III of the JCPoA provides for cooperation in the field of nuclear safety which covers, *inter-alia*:

* Support to the regulatory authority;
* Creation of a Nuclear Safety Centre;
* Training and tutoring activities;
* Emergency Preparedness and Response and Severe Accident management capability;
* Nuclear safety assessment (including stress tests) and studies;
* Safe management of nuclear and radioactive wastes.

The EU has considerable experience in the implementation of nuclear safety projects supporting regulatory authorities in third countries as a result of the previous TACIS (Technical Assistance to the Commonwealth of Independent States) and Poland and Hungary: Assistance for Restructuring their Economies (PHARE) programmes and now under the INSC (i.e., Armenia, Brazil, China, Russia, Turkey, Ukraine, Belarus, and several other countries such as Jordan, Morocco and Vietnam) and is able to ensure effective cooperation with the Iranian Nuclear Regulatory Authority (INRA).

## Current situation in the sector

*Nuclear power programme*

Iran has one nuclear power plant in operation at the Persian Gulf. It comprises one unit, the main components of which are based on the VVER[[1]](#footnote-1)-1000 V-320 design. The plant construction was initiated in 1995 by the nuclear power equipment and service export company Atomstroyexport of Russia and has the model designation V-446. It deviates considerably from the standard V-320 design due to the requirement to take over and make maximum possible use of the Unit 1 structures and the equipment already existing at the site. These structures and equipment remained after two partly constructed Siemens KWU 1300 MW PWRs were abandoned in 1979 following the Islamic revolution. Unit 1 was already substantially completed (around 85%) at the time, while Unit 2 was approximately half complete. The completion of Unit 1 by Atomstroyexport presented significant challenges related to the need to adapt the main VVER components to the retained Siemens KWU parts and equipment as well as the need to verify and in some cases upgrade the abandoned Siemens components.

The plant has a higher seismic rating than the standard VVER V-320 design due to the high seismicity of the region.

The unit entered into commercial operation in September 2013 and contractually the responsibility of plant operation was handed over to the Iranian party.

The plant is owned by nuclear power production company of Iran (NPPD) that is the licensee as well and plant operation was delegated to the Nuclear Power Plant Operation Company, a subsidiary of NPPD, which was established in 2004. NPPD is a state-owned company and observes the overall policies of the Atomic Energy organization (AEOI).

Two more VVER-1000 units are in construction at the Bushehr site.

Following the Fukushima accident, the vendor country (Russian Federation) has performed in 2012 a post-Fukushima safety re-evaluation for NPP-1. The resulting 'stress test report' was indicated to be performed in compliance with the ENSREG stress test specification. Subsequently, the vendor country recommended NPPD ordering a specific set of mobile equipment for NPP-1, which will be supplied to NPP-1 relatively soon. NPPD has started a design project for the corresponding implementation measures.

In 2018, the project IRN3.01/16 “Support in the stress tests exercise” started. It was aimed at performing stress test self assessment report (STSA) of NPP-1 within the Lot-1 and in development of Iranian national report in Lot-2. The contractor of the Lot-1 was ÚJV Řež, a. s. and end-user was NPPD and its subsidiaries. The Iranian nuclear authority INRA on the other side was supported in STSA review and national report development by EU funded technical assistance (ENCO company). Despite of considerable effort, the course of this project was severely deteriorated by travelling limitation caused mainly by SARS-Cov2 pandemic. In addition, electronic communication possibilities in the target region are more difficult than in EU. The main results, i.e. STSA and a national report, are to be finished by the end of the project, which have been protracted to March 2022. However, the above mentioned obstacles have not only increased demands on the labour and time but complicated the implementation possibilities of measures recommended.

*Nuclear regulation*

The legislative and statutory framework for regulating nuclear facilities and activities in Iran is provided primarily by the Atomic Energy Organization of Iran (AEOI) Act (1974) and the Radiation Protection (RP) Act (1989). These Acts are supplemented by related lower tier legislation to provide for the control of nuclear, radiation, waste and transport safety.

Iran has yet to join to a number of important International Conventions in the area of nuclear safety, in particular those concerned with Nuclear Safety, the Safe Management of Waste and Spent Nuclear Fuel and Civil Liability for Nuclear Damage. These Conventions are currently under consideration by the Government of Iran.

The Atomic Energy Organization of Iran Act of 1974 establishes the Atomic Energy Organization of Iran and its field of activities. These activities include the use of nuclear energy and ionising radiation in industry, agriculture and service industries, establishing nuclear power plants and related fuel cycle and desalination facilities, establishing the required scientific and technical infrastructure for these activities, and coordinating and supervising all nuclear energy related matters in Iran.

AEOI is defined as the competent regulatory authority by RP Act. AEOI delegates its responsibilities for regulatory functions to the Iran Nuclear Regulatory Authority (INRA), which is a part of AEOI and is authorised by AEOI to:

* act as the competent authority as national regulatory body
* develop and issue regulations and guides for nuclear and radiation safety
* perform safety assessments
* issue (as well as suspend/revoke) licences related to the siting, design, construction, commissioning, operation and decommissioning of nuclear and radiation facilities
* undertake inspection, supervision and enforcement activities.

INRA is also responsible for regulating nuclear safeguards and security. INRA as the only competent national regulatory authority comprises three departments for discharging its regulatory functions:

* National Nuclear Safety Department (NNSD)
* National Radiation Protection Département (NRPD)
* Development of Standards and Regulations Department

INRA has developed and implemented a management system for its activities on the basis of ISO and IAEA standards.

The safety of nuclear facilities, including the NPP-1 as well as a number of research reactors in Iran, is regulated and supervised by NNSD, which is responsible for developing the related policies, safety principles and criteria, regulations and regulatory guides that are applied as a basis for its regulatory actions.

With regard to the completion of NPP-1, a licensing procedure was developed by NNSD for the reconstruction, commissioning, operation and decommissioning of the plant. The procedure took due account of INRA requirements and internationally accepted recommendations such as those issued by the IAEA, as well as the safety standards applicable in the vendor country (Russian Federation). Specific features of the design and operating characteristics and unusual or novel design measures of the NPP-1 have also been considered. The compliance of the plant with the applicable safety requirements, on the basis of the safety documentation submitted by the operating organisation (NPPD), was supervised by NNSD. VO "safety", a Technical Support Organisation (TSO) to the Russian Federation regulatory body, Rostechnadzor, was contracted to provide technical support to NNSD for the NPP-1 licensing and supervisory activities.

## Related programmes and other donor activities

A close working relationship will be maintained between the Commission and the future EU Delegation in Iran.

The Commission will coordinate its activities with the other international partners through the Joint Commission established under the JCPoA and possibly the IAEA Technical Cooperation Department.

For a coordinated and efficient implementation of the post-Fukushima nuclear safety stress test activities in Iran, the EC has adopted the so-called '2+2' approach for ongoing INSC projects:

* The first project with ENCO (IRN3.01/16 lot 1 – contract INSC/2017/378-654): “Enhancing the capabilities of the Iranian Nuclear Regulatory Authority (INRA)” coming to an end in April 2022, supports, among other topics in performing the review of the operators’ self assessment report and in establishing the national stress test report in Lot 1.
* In Lot 2 with UJV (IRN3.01.01/16 lot 2 - INSC/2017/387-889), the project supports NPPD, – among other topics – in reviewing and completing as necessary the stress test self-assessment and in implementation of selected recommended measures. This contract is a follow-up of this first project.
* The second project with ENCO (INSC/2018/400-601) “Assists the Iranian Nuclear Regulatory Authority (INRA) improving the Iranian regulations on nuclear and radiation safety, strengthening safety assessment capabilities and providing tailor-made training and tutoring”.
* The third INSC project also with ENCO: (INSC/2020/415-089). “Enhancing the capabilities of INRA for effective nuclear safety culture and implementation of the highest nuclear safety and radiation protection standards”.
* Within AAP 2018 and 2019, two tenders will ensure the equipment of Nuclear Safety Centre (NSC):
* Call for tender to supply equipment (computer, screen, Gamma Radiation Detectors, etc.) for INRA Emergency Response Centre is in preparation under INSC Action Programme 2018 to be contracted before 30/07/2022.
* The second batch of equipment necessary for NSC to be contracted before December 2023.
* The last future project to be signed in 2021 is [INSC/2021/428-845 and aims at strengthening the Islamic Republic of Iran System of Accounting for and Control of Nuclear Material (SSACs) through procurement of necessary equipment](http://www.cc.cec/EUROPEAID/cris/saisie/contrat/contrat.cfm?cctp=ME&key=428845) with the support of the IAEA.

# OBJECTIVE, PURPOSE & EXPECTED RESULTS

## Overall objective

The overall objective of the project of which this contract will be a part is as follows:

The main goal of the project is supporting of NPPD strengthening of safety of peaceful nuclear installation NPP unit 1 through implementation of safety related measures originating in different safety review activities, mainly:

* Stress Test Self-Assessment
* OSART mission
* Periodic Safety Review.

## Purpose

The main purpose of the project is to support AEOI and its subsidiaries in implementation of safety enhancement measures of NPP-1. Most of those recommended measures are originated in the Stress Test activities following experiences from the Fukushima accident and are related to emerging Iranian National Action Plan.

Additional purpose is to support NPP-1 in execution of the Periodic Safety Review and in resolution of its findings as well as implementation of recommendations of other past or forthcoming missions at NPP-1, e.g., follow-up OSART and/or WANO review missions as far as they relate to the nuclear safety.

The form of the support will differ according to particular goals and it will consist of:

* Procedures and operating instructions (in particular emergency operating procedures and severe accident management guidelines) review and support in their implementation including verification and validation (V&V)
* Support in development of analytical models to reflect implemented recommendations
* Support in development of methodology and execution of Periodic Safety Review and follow-up activities
* Safety related training of NPP and TSO specialists
* Support in performance of specific safety analyses
* Support in implementation of Risk Informed Decision Making (RIDM) tools
* Development of strategies and engineering support for implementation of particular safety related measures
* Assistance in procurement of safety related equipment to be implemented at NPP unit 1.

## Results to be achieved by the contractor

The results to be achieved by the Contractor are:

* Periodic Safety Review methodology and criteria
* Independently reviewed strategies for resolution of various safety issues
* Implementation of selected safety enhancement measures corresponding to the SAST report recommendations or to the National Report actions
* Enhancement of TSO Tavana capability in the area of safety assessment
* Advanced assessment of the plant response to stress tests conditions
* PSA model covering implemented post stress test modifications
* Improved preventive and mitigative plant strategies addressing stress tests conditions
* Independent review of updated EOPs and SAMGs
* Special training programmes and training tools for the area of preventive and mitigative accident management.

# ASSUMPTIONS & RISKS

## Assumptions underlying the project

An implementation and development of the project activities requires commitment of all the project stakeholders in delivering the required input data in format, quality and time, as well as a strong cooperation in decision making during the course of the project.

The main assumptions are that the following main commitments are being granted by the designated stakeholders:

* The Contractor to provide project organization chart and communication lines with project’s stakeholders. All details upon the organizational arrangements to be used are subject for the discussion and agreement during the Inception Meeting.
* NPP to make available the relevant information and documentation related to project objectives especially to provide Contractor with the results of currently available procedures, operational instruction, analyses, models, and studies relevant to the Project objectives;
* NPP to make available current version of SAR, any relevant studies, design documentations, safety analysis, etc. A comprehensive list of safety documentation available at NPP shall be prepared by the plant and handed over to the Contractor during the project Inception Meeting;
* NPP to assure translation of selected technical reports and related written deliverables (User‘s manuals, training/workshop materials, etc.) into Iranian language, if justified.
* All information which during course of the project will be handed over to the Contractor, as well as the project results, shall be treated as confidential and shall not be under any circumstances be handed over to any third parties without prior written permission of NPP.

## Risks

The risks associated with the project implementation are:

* Availability of necessary data/analysis;
* Availability of NPP personnel to perform the self-assessment tasks;
* Availability of TSO Tavana personnel to assist NPP;
* Availability of computational codes and other analytical tools in the target region;
* Travelling limitations due to COVID-19 reasons.
* Sustainability of JCPOA

The above risks are planned to be mitigated through a close monitoring of project implementation and advanced remedial or compensatory measures.

# SCOPE OF THE WORK

## General

### Project description

The Project will follow two main lines:

* Engineering support in implementation of medium and long-term measures based on stress tests recommendations reflected in the National Action Plan
* Support in development of Periodic Safety Review methodology and criteria, and support in execution of the periodic review.

Engineering support in implementation of medium and long-term measures based on stress tests recommendations

A support in implementation of Stress Tests originated measures going beyond the end-date of the IRN3.01/16 Lot 2 project is considered to be a key objective of the Project. The activities would be focused on support in implementation of the measures including support in procurement of selected equipment, as well as in reflecting of implemented modifications in plant procedures. It would cover in particular an independent review and selected training activities associated with implementation of new EOPs and SAMGs.

The Stress Tests Self-Assessment report has been developed by review of the response of the nuclear plant to specific hazards, by analysing the consequences of a loss of safety functions, and by assessing the effectiveness of preventive and mitigative accident management measures. Based on the SAST report the Iranian national nuclear regulator INRA with its TSO’s has reviewed the SAST report, and subsequently is expected to prepare the regulator’s summary National Stress Test Report.

Support in development of Periodic Safety Review methodology and criteria and execution of the periodic review.

Besides Stress Tests, the Periodic Safety Review (PSR) is an important mechanism for confirming and continuous updating of safety level of the plant. Since NPP-1 is approaching 10 years of operating life, the 1st PSR report is being requested by Iranian nuclear authority INRA.

The PSR provides an effective way to obtain an overall view of actual plant safety and the quality of the safety documentation, and to determine reasonable and practical modifications to ensure safety or improve safety to an appropriate high level corresponding to the current safety requirements and best practices.

Routine reviews of nuclear power plant operation (including reviews of modifications to hardware and procedures, significant events, operating experience, plant management and personnel competence) and special reviews following major events of safety significance are the usual means of ensuring safety. In addition, majority of the States in accordance with the IAEA Safety Standards have initiated systematic safety reassessments, termed periodic safety review (PSR), to assess the cumulative effects of plant ageing and plant modifications, operating experience, technical developments, and siting aspects. A PSR includes an assessment of plant design and operation against applicable current safety standards and operating practices and has the objective of ensuring a high level of safety throughout the plant’s operating lifetime. It is complementary to the routine and special safety reviews conducted at nuclear power plants and does not replace them.

On the basis of international experience, it is reasonable to perform a PSR about ten years after the start of plant operation, and then to undertake subsequent PSRs at ten-year intervals until the end of operation. Extension of the period between PSRs beyond about ten years could delay the identification of important safety issues and could lead to a loss of the direct knowledge and experience gained in previous reviews and to a loss of continuity. Since the start of the commercial operation of the NPP-1 in 2013, the PSR of it is planned to be performed within the tentative period of the Project.

The objective of PSR is to determine by means of a comprehensive assessment:

* The adequacy and effectiveness of the arrangements and the structures, systems and components (equipment) that are in place to ensure plant safety until the next PSR or, where appropriate, until the end of planned operation (that is, if the nuclear power plant will cease operation before the next PSR is due);
* The extent to which the plant conforms to current national and/or international safety standards and operating practices;
* Safety improvements and timescales for their implementation;
* The extent to which the safety documentation, including the licensing basis, remains valid.

### Geographical area to be covered

Nuclear Power Plant site and Tehran - Iran.

### Target groups

The Atomic Energy Organisation of Iran and the concerned Departments under its authority, including NPPD and its Technical Support Organization Tavana.

## Specific work

The contents of individual project tasks are described in the subsections below.

Task 0 addresses activities of project management, and the other tasks are technical tasks.

The tasks 1 to 5 are related to support the End-user in various safety related areas. Task 6 is dedicated to organizing of transfer of EU know-how in the form of a variety of types of education and dissemination of results to the End-user.

All information handed over to the Contractor during the course of the project, as well as the project results, shall be treated as confidential and shall not be under any circumstances be handed over to any third parties without prior written permission of NPP.

### Task 0: Project Management

Objective of the task

The objective of this task is to manage all tasks, both technically and administratively, in an effective manner ensuring that its objectives are fully met within the foreseen schedule and budget.

The Contractor shall be responsible for managing the project in compliance with the instructions and requirements regarding project management as specified in further detail in these Terms of Reference (ToR). The Contractor is responsible for the overall management of the project and for preparing and/or issuing all documents and reports related to contractual and financial matters, including deliverables, cost statements and invoices, requests for contractual amendments, etc. The Contractor is responsible for preparing the detailed work plan, identifying technical interfaces within the project, input/output information, meetings, and workshops, establishing the inception, progress, technical and final reports.

Activities to be performed in the task

The task shall include the following activities:

a) Contractor

At the initial (inception) stage of the project the Contractor shall:

* Establish a Joint Working Group consisting of the project managers and coordinators from all parties involved, as well as technical experts of the Contractor and the consortium partners who will be involved in the project implementation activities on a daily basis.
* Establish the Steering Committee with representatives from EC, the Contractor, and the Project Partner/End User.
* Organise an inception (kick-off) meeting not later than two months after the contract's date of entry into force. The inception meeting shall address organisational aspects; ascertain project implementation strategy, interaction patterns, necessary input information, schedule of input information supply and delivery submission, etc. In the interest of conducting an efficient inception meeting, it may be preceded by technical meetings, possibly per task, in order to update and to validate work plan and project implementation schedule.
* Develop a detailed project work plan, implementation schedule, working procedures and a project-specific Quality Assurance Plan (QAP), in agreement with the End User. The QAP includes, inter alia, the definition of
  + project organisation, responsibilities, interfaces
  + document control
* In support of and in agreement with NPPD, develop a work plan for the implementation of the selected recommended measures and the activities related to the PSR execution
* Define separate work packages/working groups as appropriate, outline the (possibly iterative) development process in terms of roles and responsibilities.
* The following documents shall be submitted to the End User before the inception meeting:
  + work plan and project implementation schedule
  + draft of the Quality Assurance Plan
* Based on the inception meeting results, the Contractor shall elaborate the Inception report including the detailed work plan with project implementation schedule, risk analysis and project Quality Assurance Plan.

During the project phases following the inception period the Contractor shall:

* Organise progress meetings and task meetings to enable timely and effective oversight and monitoring of project progress, both in terms of its quality and compliance with the project schedule and objectives.
* Issue project reports according to the reporting requirements (see Section 7).
* Organise a final meeting to evaluate the work performed (in particular, in terms of its main outcomes and their sustainability), disseminate the outcomes more widely and identify the need for and nature of future cooperation.

b) End User

In order to fulfil this project task, the End User shall:

* Delegate appropriately qualified personnel to participate actively in the project meetings, in the Joint Working Group and in the Steering Committee.
* Review and agree on the project work plan, implementation schedule, Quality Assurance Plan and list of project Key Performance Indicators.
* Organise the local aspects (and/or electronical means for on-line meetings) of the inception meeting and progress meetings and final meeting.
* Provide all required and available inputs, documents, information, etc. for achieving the best results during project implementation.
* Provide inputs to the meeting minutes, inception report, progress reports, individual tasks reports and final report.
* Review and approve the Inception report, progress reports, individual task reports and the Final report.

Expected deliverables

* Minutes of inception, progress, relevant technical and final meetings
* Inception report, including the consolidated detailed Project Work Plan, the detailed Project Schedule, and the Project Quality Assurance Plan (QAP)
* Progress reports
* Periodical reports (one report each 2 months)
* Task reports (see also below)
* Final report

### Task 1: Support in methodology development

Objective of the task

The objective of this task is to support NPPD in development of methodology in various areas, including but not limited to Periodic Safety Review, deterministic and probabilistic analyses.

NPPD – and eventually its technical support organisation – will develop in cooperation with the Contractor a set of methodologies focuses on the following main topics:

* Methodology and criteria of PSR
* Methodology of advanced use of PSA
* Methodology of specific analyses
* Methodology for simulator data collection and analysis
* Methodology for selection and performing of supporting TH analyses for various classes of events (DBA, DEC-A, DEC-B)

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
  + Support NPPD in establishment of the road map of NPP-1 PSR execution to be consistent with INRA requirements and the best international practice as represented by IAEA guides
  + At least two workshops in Iran (could be substituted by on-line webinars according to travelling limitations), covering (among others):
    - Practical assistance in PSR methodology development
    - Backing in specific analyses inputs preparation, models parametrization, and results interpretation
    - Presentation of best practices in routine use of PSA models in RIDM, PSA tools and applications
* Assist to NPPD in development of PSR methodology and criteria in selected areas
* Support NPPD in presenting and discussing the PSR methodology in an early stage with INRA and its Consultant, and implement updates as needed.
* Support NPPD in implementation of Risk Informed Decision Making (RIDM) including methodology of model PSA model modification to serve as a basis for various PSA tools and applications
* Methodologic assistance to NPPD in Implementation of various specific analytical tools

*b) End User*

In order to fulfil this project task, the End User shall:

* Participate in workshops and related activities.
* Prepare list of analyses needed and sort them based on their priority
* Cooperate with the Contractor in elaborating, discussing and endorsing of the methodology documents, and organize reviewing of them by INRA as much as needed.
* With the support from the Contractor, present and discuss the relevant methodology documents in an early stage with INRA, and implement updates as needed.
* Review and endorse the task deliverables.

Expected deliverables

* Preliminary document of PSR of NPP-1 methodology and criteria
* Work plan for the PSR development
* Detailed methodology of selected specific analyses
* Proceedings of performed workshops
* Task report containing the description of the activities performed and results obtained (including working documents, minutes of meetings, presentations and training material).

### Task 2. Support in procedures, instructions, operational manuals, and other existing reports

Objective of the task

* The objective of this task is to support the NPPD in review, modification and enhancement of the existing procedures, instructions, operational manuals, and other existing safety related reports, as well in development of new ones as needed.

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
* Perform review of relevant existing NPPD procedures, instructions, operational manuals, and other existing safety related reports, as necessary
* Support NPPD on improvement of EOP ergonomics using observation of MCR crew training at simulator and evaluation of exercises
* Support to enhancement of new specific EOP(s) recommended by the SAST recommendations where necessary, such as for instance for delaying cliff-edge effects during long-term SBO
* Where applicable and advantageous, perform verification and validation of existing procedures and operational manuals (including EOPs and SAMGs as necessary), and, in relation with Task 3, verify and validate support analyses as needed procedures, instructions
* Perform modification and enhancement of the existing operational manuals and other existing safety related reports as identified within the review, verification and validation process

*b) End User*

In order to fulfil this project task, the End User shall:

* Provide the Contractor with all necessary information to implement this task.
* Cooperate with the Contractor in his review, and consider his comments, recommendations and proposals.
* Review and endorse the task deliverables.

Expected deliverables

* Review reports containing the record of identifies issues, e.g., review sheets.
* Reports containing results of verification and validation
* Task report containing the description of the activities performed and results obtained (including working documents, and minutes of meetings), and overview of modified procedures, instructions, operational manuals, and other existing safety related reports.

### Task 3. Analytical support

• Objective of the task

The objective of this task is to support the NPPD in reviewing, updating and improving existing safety related analyses, and in development of missing analyses. The analyses would cover mainly the following area:

* Priority analytical safety analyses recommended in the SAST report
* Thermal hydraulic analyses
* PSA model level 1 and 2
* Severe accidents
* Radiological analyses

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
  + Perform review of relevant existing thermal hydraulic analyses used in justification of FSAR, procedures and as a basis of assumption for PSA model
  + Suggest and support NPPD and its support organization in using of thermal hydraulic codes available to the End-user.  
    The training of software used for thermal hydraulic calculations will be provided within Task 6.
  + Perform review of the PSA model of level 1 with the special attention to its utilization in RIDM, i.e. to be symmetric and of a sufficient level of detail, to consider significant low probability high consequence initiating events, and to cover sufficiently all operational states.
  + Perform review of the PSA model of level 2.
  + Support NPPD and its support organization in familiarisation with the PSA model provided by NPP-1 vendor, in modification and in practical use of it. The training of software used for PSA modelling will be provided within Task 6.
  + Suggest upgrading of PSA model and assist to NPPD and its support organization in modification of the model.
  + Support NPPD in gathering of the best available data for PSA model based on generic sources, VVER specific sources, and data collection including methodology for human error probability estimation based on NPP-1 MCR crew training observation
  + Outline and suggest possible solutions for using PSA model in RIDM, namely PSA application used for elaboration of risk profiles applicable for maintenance planning.
  + Conduct priority analytical safety analyses recommended in the SAST report. This could for instance include following topics: enhancement of DC power sources and use of other sources of energy, capacity of PARs for mitigation of severe accidents, analysis of necessity of alternative I&C systems rooms cooling, long-term make up from tanks to open reactor or to SFP in case of loss of the primary UHS, analysis of the ventilation of containment annulus in severe accidents, analyses related to backup cooling means and backup AC and DC supplies.
  + Perform review of existing source term analyses used in justification of SAMGs and as a basis of assumption for PSA model level 2.
  + Suggest and support NPPD and its support organization in using of relevant codes available to the End-user.  
    The training of software used for thermal hydraulic calculations will be provided within Task 7.
  + Radiological calculations
  + Suggest to NPPD implementation of results of analyses and calculation into FSAR, procedures, operational instructions as necessary.
  + Support to reassessment of site conditions including hazards of natural origin as part of PSR

In case of subcontracting external experts, manage the entire subcontracting process, including a detailed monitoring and follow-up of the subcontractor(s) and their deliverables.

*b) End User*

In order to fulfil this project task, the End User shall:

* Provide the Contractor with all necessary information to implement this task.
* Cooperate with the Contractor in his review, and consider his comments, recommendations and proposals.
* Perform with the Contractor’s assistance modification and upgrading of existing models and calculations, and perform additional ones as needed.
* Implement results of analyses and calculation into FSAR, procedures, operational instructions as necessary.
* Review and endorse the task deliverables.

Expected deliverables

* Review reports containing the record of identifies issues, e.g., review sheets.
* Report(s) summarizing modifications of FSAR, procedures, operational instructions, and other plant documents.
* Reports on specific analytical safety analyses.
* Report summarizing all actions implemented as a result of SAST report recommendations and their final status.
* Task report containing the description of the activities performed and results obtained (including working documents, and minutes of meetings).

### Task 4. Support to equipment specification and installation

Objective of the task

The objective of this task is to support NPPD in installation of permanent and mobile hardware provisions resulting from stress test recommended measures. Those installations includes mainly provisions to

* assure sufficient amount of coolant
* assure sufficient electric power supply
* sustain all relevant instrumentation operable
* assure all other essential support systems operable
* assure residual heat removal necessary in accident conditions

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
  + Establish strategies for use of backup mobile means for delivery of coolant and AC / DC power.
  + Suggest to NPP-1 proper coolant connecting points and assist to NPPD in their installation
  + Recommend to NPP-1 type and parameters of additional fixed and mobile backup equipment for delivery of coolant in the case of accident and assist in their procurement
  + In relation to Task 3, define volume of coolant inventory for various accident scenarios
  + Suggest to NPP-1 possible modification of electric power supply topology considering LOOP and SBO and assist in potential implementation of it
  + Recommend to NPP-1 type and parameters of additional fixed and mobile backup sources of DC and AC electric power sources and assist in their procurement
  + Recommend to NPP-1 strengthening of existent systems and equipment needed in the case off loss of UHS and SBO including support systems like HVAC
  + Advisory in modification of affected civil constructions, if relevant

*b) End User*

In order to fulfil this project task, the End User shall:

* Provide the Contractor with all necessary information to implement this task.
* Review and endorse the task deliverables.

Expected deliverables

* Report containing all suggested modification of coolant delivery
* Report containing all suggested modification of electric power supply system
* Report describing implementation status of hardware provisions
* Task report containing the description of the activities performed and results obtained (including working documents, and minutes of meetings).

### Task 5. Accident management and emergency preparedness and response

• Objective of the task

The objective of this task is to support NPPD in organization of accident management and in enhancement of emergency response organization including habitability and HMI ergonomic of emergency control workplaces.

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
  + Support NPPD in enhancing the emergency response organization
  + Supporting the assessment and consideration of habitability and accessibility of workplaces
  + Supporting processes for accident management (internal and external operational feedback, recommendations to staff emergency drill improvement)
  + Alarm response management
  + Assessment of Ergonomics of emergency control workplaces and suggestions for enhancement

*b) End User*

In order to fulfil this project task, the End User shall:

* Provide the Contractor with all necessary information to implement this task.
* Help to the Contractor support in familiarisation with emergency response organisation including interviews and walkdowns as needed.
* Review and endorse the task deliverables.

Expected deliverables

* Report containing all suggested modification of emergency response organization
* Report summarizing the conclusions and recommendations related to the habitability of workplaces.
* Task report containing the description of the activities performed and results obtained (including working documents, and minutes of meetings).

### Task 6. Training

Objective of the task

The objective of this task is to enhance NPP-1 overall safety by preparing training programme in all relevant issues as addressed within Tasks 1-5. The activities will cover workshops, webinars, and OJT to exchange experiences, transfer know-how, and to promote best practices as applied at EU NPPs with specific focus on VVER type.

Activities of the task

The task shall include the following activities:

*a) Contractor*

The Contractor shall:

* Conduct the following activities:
  + Organize on-site training workshops at different places in Iran (e.g., NPP, Tehran)
  + Organize On-the-Job-Training in EU as needed and possible due to pandemic and other potential limitations
  + Know-how transfer using appropriate type of electronic communication including webinars and pre-recorded lessons
  + Prepare digital/written materials for dissemination and future study within AEOI

*b) End User*

In order to fulfil this project task, the End User shall:

* Provide the Contractor with all necessary information to implement this task.
* Help to the Contractor in organizing of training activities performed in Iran including interpretation to and from Farsi and equipment for computers codes training
* Assure involvement of relevant NPPD personnel to gain most possible benefit from training activities
* Review and endorse the task deliverables.

Expected deliverables

* Training materials, manuals, proceedings, etc.
* Task report containing the description of the activities performed and results obtained (including working documents, and minutes of meetings).

## Project management

### Responsible body

* Contracting Authority – European Commission
* Partner Country – The Islamic Republic of Iran
* Beneficiary – Atomic Energy Organization of Iran (AEOI)
* End User – AEOI and the concerned Departments under its authority such as NPPD and its technical support organisation Tavana.
* The Contractor
* EC Monitors

### Management structure

#### EU stakeholders

During the implementation of the project, the Contractor and the other project participants must interact with the European Commission (EC) through the following bodies involved in the implementation of the INSC programme:

* The Unit F1 – Climate Change and Sustainable Energy; Nuclear Safety of the Directorate General for International Partnership: this unit formulates the annual programme (on the basis of the multi-annual plan), identifies the projects, and is responsible for the project descriptions as well as for all tendering. The EC Project Manager responsible for the management of the work to be performed under this contract is based in unit F1.
* The unit R6 “Finance, Contracts, Audit” of Directorate General for International Partnership: this unit is responsible for the financial management of the contract and invoice settlement.
* The EC Monitors: these are external experts mandated by the EU to check and monitor implementation of INSC projects in the Partner Country. They report to the EU.
* The Joint Research Centre (JRC) of the EU: JRC provides technical support to the EU services and is involved in ToR preparation, tender evaluation, project technical follow-up, review of reports, etc.

During the course of the implementation of the project, the Contractor and the other project participants should apply modern management practices in order to have a close follow-up of the project's progresses and regularly report to the European Commission (EC). The Contractor will use modern computer software tools for the management of the project.

After the signature of the contract, the Contractor will initiate with the Partner Country negotiation to have a Communication Procedure - describing the exchange of the documents between the partners - ideally signed before or at the latest at the Inception Meeting.

#### End User

The End User is AEOI and the concerned Departments under its authority including NPPD and its technical support organisation Tavana.

The End User should provide during the inception phase full information of other past, ongoing and planned future cooperation projects. During implementation, it should, together with the Contractor, co-ordinate the work to avoid overlapping and ensure complementarities, as appropriate.

During the implementation of the contract, the End User shall:

* Approve the Inception Report as well as any further updates of the work plan and the schedule, and the project related procedures established by the Contractor.
* Prepare all formal documents that may be required for implementation of project tasks at the End User’s facilities by Partner Country’s national or industry standards, rules and regulations.
* Provide the Contractor with all necessary technical information, design documentation, specific local regulations, input data, etc., as required by these ToR or deemed necessary by the Contractor for performance of technical tasks and preparation of technical reports.
* Analyse the results of the project phases.
* Receive and comment on the project results, the final report and the specific deliverables.
* Provide, as necessary, information for the project-related actions taking place in or out of Iran.
* Endorse all technical deliverables of the project (reports or other products), before they enter the approval procedure as defined in Section 7.2 of these ToR.
* Support the Contractor in working at the End User’s facilities during project implementation. The End User shall arrange all necessary permits for the Contractor experts to access the specified End Users’ facilities and assist them in the work with the facility equipment to the extent necessary and permitted to the Contractor.
* Provide necessary interpretation from and to the Partner Country language for project-related activities, like workshops, training activities, visits to technical facilities, etc., taking place inside the Partner Country.
* Appoint a senior member of its staff to liaise with the Contractor and ensure that staff of an appropriate level is made available to work alongside the staff of the Contractor. Staff of the End User shall not be paid from project funds.
* Provide all reasonable assistance to solve unforeseen problems that the Contractor may face locally in Iran. The possible failure to solve some of the Contractor's problems encountered locally will not free the Contractor from meeting its contractual obligation vis-à-vis the Contracting Authority.

#### The Contractor

The Contractor is the legal person with whom the European Commission has concluded the contract. The Contractor is responsible for all the achievements of the project and for the assistance and transfer of know-how to the Partner Country organisations. He/she shall directly perform part of the work within the scope and limits that are described in these ToR.

The Contractor, inter alia, shall:

* Assure the interface with the European Commission (INTPA F1). In particular, the Contractor's Project Leader will regularly brief and de-brief the European Commission project manager on meetings and achievements.
* Assure the co-ordination between all participating organisations and definition of procedures for exchange of information.
* Establish the planning and schedule of the activities as well as the inception report.
* Perform the project according to the scope, as described in these Terms of Reference, and the agreed time schedule.
* Survey other related activities and establish inter-relationships with other parties involved in the work of this project.
* Prepare the administrative reports and technical task reports as described in Section 7 and have them circulated for approval according to the procedure set out in Section 7.2.
* Organise regular project progress meetings and prepare minutes of the meetings; the minutes will be produced in English.
* Assure a sound financial project management.
* Organise the final project meeting and participate in the final project presentation for the dissemination of results.
* Assure coordination with other cooperation or support projects (e.g. IAEA) in order to avoid overlaps.
* Take care, in accordance with applicable procedures of the European Commission, of:
  + Travel, accommodation, local travel, subsistence and medical insurance for the experts of the counterpart organisations who will be travelling to/within/from the European Union (EU) at the request of the Contractor.
  + The necessary interpretation in case of visits and joint work in the EU countries.
  + Local transport and accommodation arrangements for the above mentioned experts when they travel with or at the request of the Contractor outside their normal place of work.

Meetings between the Contractor and INTPA Project Manager and other appropriate EU Commission services will be organised by the respective parties as appropriate. Meetings between representative of the End User, the Contractor and INTPA Project Manager.

### Facilities to be provided by the contracting authority and/or other parties

< As appropriate >

# LOGISTICS AND TIMING

## Location

The key experts will be based either at the contractors’ own premises or in their own habitual residence country (in a European Union Member State). Each key expert’s location should be specified by the applicants in the Organisation and Methodology annex of their technical offer. The assignment will require missions in the partner country and, possibly, in and outside EU Member States where the contractor and the end user may support the organisation of / attend relevant events.

The operational base for all non-key experts will be their place of residence and will be indicated in their CV.

Since exact locations and durations of the technical assistance missions are not known the budget for experts' flights and accommodation is included in the provision for incidental expenditure.

## Start date & period of implementation

The intended start date is April 1, 2022 and the period of implementation of the contract will be 48 months from this date. Please see Articles 19.1 and 19.2 of the special conditions for the actual start date and period of implementation.

An explicit work plan and schedule must be provided in the Contractor's "Organisation and Methodology" document. At the project start, a detailed schedule identifying the various interfaces of the project, input/output information, deliverables, etc. will be laid down by the Contractor with the agreement of the End User in the "Inception Report".

# REQUIREMENTS

## Staff

Note that civil servants and other staff of the public administration, of the partner country or of international/regional organisations based in the country, shall only be approved to work as experts if well justified. The justification should be submitted with the tender and shall include information on the added value the expert will bring as well as proof that the expert is seconded or on personal leave.

Key experts have a crucial role in implementing the contract. These terms of reference contain the required key experts’ profiles. The tenderer shall submit CVs and statements of exclusivity and availability for the following key experts:

A team of nuclear safety experts from different EU Member States shall be set up to cooperate with and support the Partner organisation. Their experience in partner relations with the Iranian nuclear operator and its support organizations, as well as familiarity with nuclear technology present in Iran and with current nuclear regulatory requirements of Iran would be an asset.

Clearly structured information shall be provided in the Contractor’s "Organisation and Methodology" for the following items:

* A diagram covering the responsibilities for each of the tasks of the project, involving the Contractor, the End User and other stakeholders. This diagram shall indicate the names of the key persons carrying responsibility for the management of the work.
* A table regarding the breakdown of planned manpower, providing the expected number of man-days, per task (also indicating the part spent in the EU and in Iran), and in total.
* A log frame matrix, clearly indicating objectives, targets, inputs, outputs, milestones, progress and performance indicators, monitoring, etc. The format is given in Appendix 1 and should be adapted and developed in the offer.

### Key experts

Key experts have a crucial role in implementing the contract.

These terms of reference contain the required key experts’ profiles. The tenderer shall submit CVs and Statements of Exclusivity and Availability for the following key experts.

The profiles of the key experts for this contract are as follows:

Key expert 1: Project Leader

Qualifications and skills:

* Master degree or equivalent in mechanical, electrical, industrial, structural or nuclear engineering, or relevant directly related discipline,
* a very good command of written and spoken English, at least B2 level,
* proven experience as project leader and/ or team leader.

General professional experience:

* at least 5 years experience in management and implementation of international projects at a senior level, including outside the EU,
* demonstrated experience with the preparation of the Nuclear Safety peer-review reports, or Periodic Nuclear Safety Evaluation, or Safety Analysis Reports.

Specific professional experience:

* at least 10 years of experience in the field of design or operation of NPPs.
* participation in the EU stress test peer review(s) will be a strong asset.

The key expert is expected to spend an appropriate part of his time in Iran.

Key expert 2: Senior expert Nuclear Safety Assessment and deputy Project Leader

Qualifications and skills:

* university degree in mechanical, electrical, industrial, structural or nuclear engineering, or relevant directly related discipline,
* a very good command of written and spoken English, at least level B2,

General professional experience:

* at least 5 years of experience in NPP Safety evaluation methodologies,
* at least 5 years of experience in management and implementation of international projects, including outside the EU.

Specific professional experience:

* at least 10 years of work experience directly associated with NPP safety evaluations, assessments, and peer reviews.
* proven knowledge of VVER technology by implementation of nuclear safety projects at least at/for one VVER plant during last ten years.

Participation in the EU stress test peer review(s) will be a strong asset.

The key expert is expected to spend an appropriate part of his time in Iran.

Key expert 3: Senior expert Nuclear Safety Assessment

Qualifications and skills:

* university degree in mechanical, electrical, industrial, structural or nuclear engineering, or a relevant directly related discipline,
* a very good command of written and spoken English,

General professional experience:

* At least 5 years of experience in NPP Safety evaluation methodologies.

Specific professional experience:

* at least 5 years of work experience directly associated with NPP safety evaluations, assessments and peer reviews.
* proven knowledge of VVER technology by implementation of nuclear safety projects at least at/for one VVER plant during last ten years.

The key expert is expected to spend an appropriate part of his time in Iran.

Participation in the EU stress test peer review(s) will be a strong asset.

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

Key expert 4: Senior expert Nuclear Safety Assessment

Qualifications and skills:

* university degree in mechanical, electrical, industrial, structural, or nuclear engineering, or a relevant directly related discipline,
* a very good command of written and spoken English,

General professional experience:

* At least 5 years of experience in NPP Safety evaluation methodologies.

Specific professional experience:

* at least 5 years of work experience directly associated with NPP safety evaluations, assessments, and peer reviews.
* proven knowledge of VVER technology by implementation of nuclear safety projects at least at/for one VVER plant during last ten years.

The key expert is expected to spend an appropriate part of his time in Iran.

Participation in the EU stress test peer review(s) will be a strong asset.

All experts must be independent and free from conflicts of interest in the responsibilities they take on.

### Non-key experts

The profiles of the non-key experts for this contract are as follows:

* Senior experts: they should have at least 10 years professional experience in the area defined for the tasks they will be committed to;
* Junior experts: they should have at least 5 years professional experience in the area defined for the tasks they will be committed to.

CVs for non-key experts should not be submitted in the tender but the tenderer will have to demonstrate in their offer that they have access to experts with the required profiles.

The contractor must select and hire other experts as required according to the profiles identified in the organisation & methodology. It must clearly indicate the experts’ profile so that the applicable daily fee rate in the budget breakdown is clear. All experts must be independent and free from conflicts of interest in the responsibilities they take on.

The selection procedures used by the contractor to select these other experts must be transparent, and must be based on pre-defined criteria, including professional qualifications, language skills and work experience. The findings of the selection panel must be recorded. The selected experts must be subject to approval by the contracting authority before the start of their implementation of tasks.

### Support staff & backstopping

The Contractor will provide support facilities to their team of experts (back-stopping) during the implementation of the contract.

The support staff shall include personnel in charge of administrative and financial management of the project.

Backstopping and support staff costs must be included in the fee rates.

## Office accommodation

Office accommodation of a reasonable standard and of approximately 10 square metres for each expert working on the contract is to be provided by Partner Country/End User.

The workplaces shall be equipped with desks, chairs, telephone and Internet connection. The costs for the telephone line and Internet connection are to be covered by the fees.

## Facilities to be provided by the contractor

The contractor must ensure that experts are adequately supported and equipped. In particular it must ensure that there is sufficient administrative, secretarial, and interpreting provision to enable experts to concentrate on their primary responsibilities. It must also transfer funds as necessary to support their work under the contract and to ensure that its employees are paid regularly and in a timely fashion.

## Equipment

**No** equipment is to be purchased on behalf of the contracting authority / partner country as part of this service contract or transferred to the contracting authority / partner country at the end of this contract. Any equipment related to this contract that is to be acquired by the partner country must be purchased by means of a separate supply tender procedure.

## Incidental expenditure

The provision for incidental expenditure covers ancillary and exceptional eligible expenditure incurred under this contract. It cannot be used for costs that should be covered by the contractor as part of its fee rates, as defined above. Its use is governed by the provisions in the general conditions and the notes in Annex V to the contract. It covers:

* Travel costs and subsistence allowances for missions, outside the normal place of posting, undertaken as part of this contract. The contract will include costs for environmental measures, for example CO2 offsetting.
* Travel costs, per diems, visa and insurance expenses for missions to be undertaken as part of this contract by technical experts of the Beneficiary/End User an (e.g. Working Group meetings, workshops, project progress meetings, scientific visits or training organised by the Contractor).

Logistics costs related to all meetings (kick-off, working group meeting, progress meetings, final meeting), scientific visits, expert visits, workshops, and trainings (renting of meeting rooms, renting of technical equipment, catering services etc). •

The provision for incidental expenditure for this contract is **EUR 400.000**. This amount must be included unchanged in the budget breakdown.

Per diem are daily subsistence allowances that may be reimbursed for missions foreseen in these terms of reference or approved by the Contracting Authority, carried out by the contractor’s authorised experts outside the expert's normal place of posting. The per diem is a maximum fixed flat-rate covering daily subsistence costs. These include accommodation, meals, tips and local travel, including travel to and from the airport. Taxi fares are therefore covered by the per diem. Per diem are payable on the basis of the number of hours spent on the mission. Per diem may only be paid in full or in half (no other fractions are possible). A full per diem shall be paid for each 24-hour period spent on mission. Half of a per diem shall be paid in case of a period of at least 12 hours but less than 24 hours spent on mission. No per diem should be paid for missions of less than 12 hours. Travelling time is to be regarded as part of the mission. Any subsistence allowances to be paid for missions undertaken as part of this contract must not exceed the per diem rates published on the website - http://ec.europa.eu/europeaid/funding/about-calls-tender/procedures-and-practical-guide-prag/diems\_en - in force at the time of contract signature.

The contracting authority reserves the right to reject payment of per diem for time spent travelling if the most direct route and the most economical fare criteria have not been applied.

Prior authorisation by the contracting authority for the use of the incidental expenditure is not needed with the exception of the Logistics costs related to all meetings (kick-off, working group meeting, progress meetings, final meeting), scientific visits, expert visits, workshops and trainings (renting of meeting rooms, renting of technical equipment, catering services, etc.).

Prior authorisation by the contracting authority for the use of the incidental expenditure is also needed for missions to be undertaken as part of this contract by technical experts of the Beneficiary/End User.

## Lump sums

No lump sums are foreseen in this contract.

## Expenditure verification

The provision for expenditure verification covers the fees of the auditor in charge of verifying the expenditure of this contract in order for the contracting authority to check that the invoices submitted are due. The provision for expenditure verification for this contract is **EUR 35.000.** This amount must be included unchanged in the budget breakdown.

This provision cannot be decreased but can be increased during execution of the contract.

# REPORTS

## Reporting requirements

Please see Article 26 of the general conditions. Interim reports must be prepared every six months during the period of implementation of the tasks. They must be provided along with the corresponding invoice, the financial report and an expenditure verification report defined in Article 28 of the general conditions. There must be a final report, a final invoice and the financial report accompanied by an expenditure verification report at the end of the period of implementation of the tasks. The draft final report must be submitted at least one month before the end of the period of implementation of the tasks. Note that these interim and final reports are additional to any required in Section 4.2 of these terms of reference.

Each report must consist of a narrative section and a financial section. The financial section must contain details of the time inputs of the experts, incidental expenditure and expenditure verification.

To summarise, in addition to any documents, reports and output specified under the duties and responsibilities of each key expert above, the contractor shall provide the following reports:

|  |  |  |
| --- | --- | --- |
| **Name of report** | **Content** | **Time of submission** |
| Inception report | Analysis of existing situation and work plan for the project | No later than 2 months after the start of implementation |
| 6-month progress report Considering of specificity of the target region, the period could be modified with approval of the contracting authority. | Short description of progress (technical and financial) including problems encountered; planned work for the next 6 months accompanied by an invoice and the expenditure verification report. | No later than 2 months after the end of each implementation period. |
| Draft final report | Short summary of the project, description of achievements including problems encountered and recommendations, and any other learning. | No later than 1 month before the end of the implementation period. |
| Final report | Short summary of the project, description of achievements including problems encountered and recommendations, and any other learning; a final invoice and the financial report accompanied by the expenditure verification report. | Within 2 months of receiving comments on the draft final report from the project manager identified in the contract. |

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All reports, except monthly reports, shall be sent in parallel to the end user and to the EC. Without any comments in 30 days by the end user, the reports will be considered as endorsed. The project manager is responsible for approving the reports.

**7.1.1. Inception Report**

The Inception Report must be prepared as a result of Task 0 and submitted not later than 30 calendar days after the inception meeting. It may propose refinements or minor changes to the work programme, so as to ensure the smooth running of the contractual activities. Such changes should be discussed among the participants of the inception meeting and approved by the EC project manager. Any significant modifications, which change the contract and project, must be approved by the EC project manager and be implemented by an addendum to the contract. The changes cannot increase the budget specified in the contract.

The Inception Report shall be approved by the Beneficiary/End Users and by the EC Project Manager.

As part of the inception report the contractor will provide a detailed work plan and a project schedule (preferably in MS Project format) indicating the main tasks, timeframes and deliverables, as well as a detailed organisational chart and a detailed manpower plan also comprising tasks assigned to the End User, lines of communication, etc. An updated version of the project schedule is to be attached to each progress report.

The inception report shall include the following:

* A synopsis of the project, including objectives, tasks as set out in the ToR, definition of project outputs, and description of the principal activities of the contractor, EU organisations and the end user. All constraints and assumptions applicable shall be identified;
* contact coordinates for all principal actors in the project;
* the revised logframe matrix (Appendix 1 of these ToR), together with the key performance indicators;
* an organigramme of contractor’s organisation including identification of the responsible persons assigned as well as their responsibilities and organisational interfaces;
* documentation expected to be generated by the contractor and the end user, necessary for the execution of the project tasks, shall be identified, together with the output reports specified in these ToR;
* a work plan listing the principal tasks and activities and their timeframes, including key dates ensuring the project timely completion, as well as deliverables. All potentially critical items possibly affecting the project timely completion must be identified;
* references to other EU projects with similar objectives and tasks, or of possible benefit for this project;
* reference to and identification of the contractor’s QA program for the project;
* a breakdown in tabular form of the use of resources: man-days to be worked; all travel of concerned staff, the use of any special equipment or material, allocated to all of the relevant organisations;
* a draft press release describing the objectives of the project, the participating organisations and references to other EU projects with similar objectives.

**7.1.2. Progress Reports**

Progress reports must be prepared for every six months of the contract implementation period and be submitted to the contracting authority within 30 calendar days after the end that period, as defined in Articles 26 of Annex I to the General Conditions of the Contract.

Each progress report shall consist of a narrative section and a financial section. The narrative section should describe the project work performance over the reporting period and an updated version of the project schedule. The financial section must contain details of utilisation of resources over the reporting period including time inputs (man-days) of the experts, incidental expenditures incurred in the reporting period and the cost of expenditure verification. Each interim progress report must be submitted along with the corresponding interim invoice, accompanied by an interim financial report and an interim expenditure verification report (see Article 28 and Article 29 of Annex I to the General Conditions of the Contract).

Progress reports shall include:

* Brief summary of project progress since project start, updating it in each of the successive reporting periods;
* detailed account of the progress during the reported period (task by task);
* details of any relevant organisational changes in the organisation of the Contractor and the End User in the respective period;
* reasonable details of all meetings, workshops, visits or other project interface activities, including
* major communications, either in the form of minutes or equivalent;
* detailed list of documents exchanged and/or generated for the project;
* an updated breakdown in tabular form of the use of resources and the cumulative total of resources utilised since project start: man-days worked, all travel of concerned staff, the use of any special equipment or material, allocated to all of the relevant organisations;
* a planning of all project activities for the next reporting period;
* critical items possibly affecting timely project completion must be identified.

**7.1.3. Final Report**

A Final Report (the report on project completion) is submitted together with a final invoice, a final financial report and the final expenditure verification report, to the EC at the end of the contract implementation period.

Prior to approval by the EC Project Manager, the Final Report shall be endorsed by the Beneficiary/End Users .

The Contracting Authority shall comment on and/or approve the draft final report within 90 days.

The official final report shall be forwarded to the EC project manager not later than 60 days after the end of the period of implementation of the tasks. Such report shall not bind the Contracting Authority.

The final report must be accompanied by a final invoice and a financial report together with an expenditure verification report at the end of the period of execution (as defined in Article 28 of the General Conditions and in accordance with the template in Annex VII of the contract) confirming the final certified value of the contract. The final progress report must also be accompanied by an electronic version containing all reports generated and delivered during the project.

In case the final report is submitted without the corresponding invoice, the financial report and an expenditure verification report, its approval is suspended pending receipt of the mentioned documents; the deadline of 90 days starts only once these documents are received by the Financial Unit.

The final report shall cover in particular the following topics:

* Objectives,
* Short project history,
* External problems and difficulties encountered,
* Strengths and weaknesses of the project,
* Realisation of objectives,
* Lessons to be learned,
* Effectiveness of project implementation and efficiency (cost-effectiveness) with clear indications on
* the key performance indicators as defined,
* Early impact of assistance,
* Elements for a possible follow-up, in agreement with the End User.

The final report shall include the following documents:

* Executive summary, in a form suitable for publication in the TIPINS database ,
* Draft press release on the results achieved,
* Project completion report addressing the following:
  + compliance with the inception report,
  + summary of the completion of the different tasks, showing the relationship in their development and implementation, assessing to which extent the objectives of the individual tasks have been met and giving the origin and nature of possible failures.

The final report shall also include the following attachments:

* Copy of deliverables with a clear indication on their possible level of dissemination (Large public, Technical audience (e.g. contractors of similar projects), Technical or commercial information that can be considered as confidential, bearing in mind that copyright and any other rights of ownership belong exclusively to the EC)
* The list of meetings and workshops with relevant minutes and lists of participants.

**7.1.4. Periodic report (each two months)**

In addition to the above formal reports, the Contractor shall submit to the EC Project Manager and to the Steering Committee mentioned in section 4.2.1 information on project progress in the form of short monthly reports. These reports aim at informing the Commission of the progress of the activities, general progress, problems encountered, recommendations, requests, etc. In addition, they shall serve to inform the Commission of political, economic or institutional developments in the partner country of relevance to the project. In case of official meetings or visits, a summary of the minutes or report must be attached to the respective monthly report. These monthly reports shall be submitted within 14 calendar days after the end of every month to the EC Project Manager in electronic form (see model in Appendix 1). They do not require formal approval from the Commission.

**7.1.5. Task reports/ Deliverables**

Upon completion of each Task specified in Section 4.2 according to the agreed project schedule, the contractor will prepare a (technical) Task report providing all key information on the Task input data, work completed within the Task, methodology used in the Task implementation and the results achieved. Any specific written outputs of the Task required in these ToR, like procedures, methodologies, design documentations, software applications, etc., will be annexed to or enclosed with the Task report in an appropriate form (paper documentation, USB, CD-ROM, DVD, etc.).

They shall comprise:

* All input data (in its broadest meaning);
* if appropriate, the description of any observed local non-compliance situation;
* meeting minutes, presentations and working material of workshops and training sessions;
* all written outputs of the related task;
* the methodology used, including quality assurance aspects.

When preparing the technical reports and other deliverables of the individual Tasks, the Contractor must observe the latest Communication and Visibility Manual for EU External Actions concerning acknowledgement of EU financing of the project. For more information, please see:

<https://ec.europa.eu/europeaid/communication-and-visibility-manual-eu-external-actions_en>

**7.2. Submission & approval of reports**

One digital copy, in a format to be agreed during the inception meeting, of the reports referred to above must be submitted to the project manager, the end user and other contact persons as identified by the project manager and the end user. The reports must be written in English and formally agreed by the End User. In addition to endorsing reports as appropriate, the end user shall be encouraged to submit comments on the reports to the contractor project leader and the EC project manager.

All reports, except monthly reports, shall be sent in parallel to the end user and to the EC. Without any comments in 30 days by the end user, the reports will be considered as endorsed. The project manager is responsible for approving the reports.

# MONITORING AND EVALUATION

## Definition of indicators

The project will be monitored according to standard procedures as the "EU Result Oriented Monitoring Programme for the European Neighbourhood and Partnership Countries and for the Instrument for Nuclear Safety Cooperation (INSC)". Project monitoring and evaluation will be based on periodic assessment of progress on delivery of specified project results and towards achievement of project objectives.

## Special requirements

None.

1. Vodo-Vodianoï Energuetitcheski Reaktor or Water Water Energy Reactor [↑](#footnote-ref-1)