

Twinning Project Fiche

1. Basic Information

1.1. Publication notice reference: EuropeAid/ 138-159/IH/ACT/TR

1.2. Programme: IPA 2013 Indirect Management mode

1.3. Twinning Number: TR 13 IPA NS 01 16 R

1.4. Title: Improvement of Nuclear Safety Regulatory Infrastructure of Turkey

1.5. Sector: Energy/Nuclear Safety

1.6. Beneficiary country: Republic of Turkey

2. Objectives

2.1. Overall Objective:

The overall objective is to enhance the protection of public and environment against the possible harmful effects of ionizing radiation arising from nuclear activities.

2.2. Project purpose:

The purpose of the project is to harmonize the nuclear safety and security legislation of TAEK in line with EU nuclear acquis and focus on gaining EU experience in regulatory functions in the field of developing regulations and guides, review and assessment, inspection and enforcement.

2.3. Accession Partnership and NPAA priority

2.3.1. Link with Accession Partnership;

In 2008/157/EC numbered Council Decision on the principles, priorities and conditions contained in the Accession Partnership with the Republic of Turkey, there is one chapter related with the project within medium-term priorities. The priority under this chapter and its relation with project is as the following;

- Abstract From the AP: “adopt a nuclear law which ensures a high level of nuclear safety in line with EU standards, (in chapter 15 Energy)”
- Relation with the Project: The project will provide the implementation of the “COUNCIL DIRECTIVE (Nuclear Safety Directive) 2009/71/EURATOM of 25 June 2009 (including 2014 amendment of this directive)”, “COUNCIL DIRECTIVE 2011/70/EURATOM of 19 July 2011 establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste” and other related issues in order to ensure that Turkey provides for appropriate national arrangements for a high level of nuclear safety and security to protect workers and the general public against the dangers arising from ionizing radiations from nuclear installations and nuclear activities.

2.3.2. Link with NPAA (National Programme of Turkey for the Adoption of the EU Acquis);

National Programme of Turkey for the Adoption of the EU *acquis* prepared at the end of 2008 includes requirement related with this project under the chapters of 15 (Energy). This requirement under this chapter and its relation with project is as the following;

Abstract From the NPAA: The title of Priority 15.3 that is “*Acceding to the Joint Convention*

on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. Adoption of a nuclear law which ensures a high level of nuclear safety in line with EU standards” covers the draft Nuclear Law within the scope of Establishment of nuclear and radiation safety and security principles; definition of duties, authorities and responsibilities of Turkish Nuclear Regulatory Authority (TNRA) to regulate activities related to the peaceful use of nuclear energy and ionizing radiation in the country and of the Turkish Atomic Energy Authority (TAEK) to conduct research, technology development and implementation studies in relation to such activities being carried out by TAEK.”

Related with this priority, “Strengthening regulatory capacity pertaining to nuclear power plant licensing of TAEK” has been planned in the NPAA.

2.3.3 Link with MIPD/EU Enlargement Strategy and Main Challenges 2011-2012/ Turkey Progress Report

2.3.3.1 Link with MIPD

In 2011--2013 Turkey MIPD; It has been mentioned the importance of nuclear safety regulatory body.

In the Chapter of 3.5.1 Energy sector the following statement has been mentioned:

- *“In this context, the improvement of nuclear safety is of paramount importance to ensure compliance with the acquis in this area”.*

In the Chapter of 3.5.3. Sector Objectives for EU support over next three years the following statement has been mentioned

- *“The third objective is derived from the Accession Partnership is to bring nuclear safety in line with EU standards.”*
- *“Types of indicators to measure developments towards these objectives include, inter alia:*
 - *Supported nuclear safety, in particular through the safe management of spent fuel and radioactive waste.”*

However, the necessity of implementation of this project is over-emphasized in the following documents.

2.3.3.2. EU Enlargement Strategy and Main Challenges 2011-2012 / 2012-2013

In Chapter 15: Energy Limited progress can be reported on nuclear energy, nuclear safety and radiation protection. No developments can be reported on the adoption of a framework nuclear law which is supposed to ensure a high level of nuclear safety in line with EU standards.

Compliance of the existing regulations with the EU acquis still needs to be verified. Turkey does not participate in the IPA horizontal programme on nuclear safety and radiation protection, which would make an assessment on the level of transposition of the EU acquis possible. Turkey has not acceded to the Joint Convention on the safety of spent fuel management and on the safety of radioactive waste management. The law regarding the nuclear agreement between Turkey and Russia on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site entered into force.

The independence and capacity of the regulatory authority need to be strengthened further. Measures are needed in particular to ensure the highest possible standards for nuclear safety, security, safeguards and non-proliferation.

In the Enlargement Strategy and Main Challenges 2012-2013 document in page 70 the following statement has been mentioned :

- *“Further efforts are needed in the areas of natural gas, nuclear safety and radiation protection, including responsible management of spent fuel and radioactive waste.”*

2.3.3.3 Turkey Progress Reports

Turkey 2013

In this document the situation of Turkey stated as in page 37:

- *“The compliance of the existing regulations with the acquis still needs to be verified.” and “further efforts are needed in the areas of energy efficiency and nuclear energy, in particular on alignment with relevant EU Directives”.*

Turkey 2014

In the section of 4.15 Chapter 15: Energy,

the following developments on nuclear and waste safety have been reported.

- *“The long-awaited draft framework law on nuclear energy and radiation and the establishment of an independent regulatory authority was opened for consultation. It still needs to be adopted. The law on acceding to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management is still awaiting approval by parliament.”*
- *“There was progress in the field of energy, especially on security of supply, on the internal market for electricity, and on renewable energy. However, further work is required on natural gas, energy efficiency and nuclear safety and radiation protection, in particular on alignment with the relevant EU directives. A transparent and cost-based pricing mechanism for electricity and gas has not yet been properly implemented. Overall, Turkey is at an advanced level of alignment in the field of energy.”*

2.3.4. Link with National Development Plan (where applicable)

In Turkey’s 9th Development Plan prepared for 2007-2013 period, priority is given to creation of healthy diversification of in electric supply, according to the this aim nuclear energy is also included among electricity production resources. In the mean time it has been mentioned that “Before the construction of a nuclear power plant, detailed plans and programs on storage, elimination of wastes and informing the public will be prepared by considering maximum harmony with the free market.

Relation with the Project: One of the major results of this project is the enhancing nuclear safety by implementation of EU acquis and best practices.

In Turkey’s 10th Development Plan prepared for 2014-2018 period; the importance to the investment to nuclear power is emphasized.

3. Description of Project

3.1. Background and justification:

3.1.1. Turkish Atomic Energy Authority Infrastructure

Turkey as a candidate for the membership to European Union has to adopt and implement the *acquis communautaire*. In Turkish Atomic Energy Authority Act (Act No. 2690 – 1982), TAEK is defined as a judicial organization under the direct supervision of the Prime Minister and authorized for drawing up regulations concerning radiation protection, safety and security of nuclear installations, nuclear materials and radioactive sources; authorized and responsible for licensing of nuclear facilities and radioactive sources. TAEK undertakes all the regulatory activities concerning nuclear safety and security, radiation safety, radioactive waste safety, transport safety and safeguards in Turkey.

Main regulatory responsibilities of the TAEK are to give approval, permission and license related to the siting, construction, operation and environmental protection of nuclear power and research reactors and nuclear fuel cycle facilities; to do necessary studies and controls, to limit (restrict) the operating authority in case of noncompliance with the permission or license; to cancel permanently or temporarily the permission or license given and to make recommendations to the Prime Minister for the shutdown of those facilities; to prepare the necessary technical guides, decrees and regulations for those purposes.

Regulatory functions of TAEK are performed by two departments, namely Department of Nuclear Safety (DNS) and Department of Radiological Health and Safety (DRHS).

Related with this responsibilities, DNS accomplishes review, evaluation and assessment of safety analyses reports and other documents submitted by applicants or licensees both prior to authorization and periodically during operation; preparation of new and modification of existing regulations and guides concerning nuclear facilities; and regulatory inspection of nuclear facilities; security of nuclear facilities and materials; safeguards activities at national level. There are 70 technical staff working for DNS as of August 2014

The Turkish legislation on nuclear and radiation safety, safeguards and physical protection is in place. They are mostly based on relevant IAEA Safety Standards Series documents and relevant international conventions. However, there are needs for revision of some regulations for being in full compliance with the EU *acquis* and/or EU practices and preparation of new regulations and guides as the nuclear power programme evolves in Turkey. Further preparation and development of the more specific regulation concerning safety of nuclear facilities is a continuous issue.

The purpose of the project is to ensure that the regulations are in line with EU *acquis* and/or practices, particularly in specific issues, by taking advice and support from experienced member state nuclear regulatory body or bodies and consultancy from EU on the areas needed.

The licensing process of nuclear facilities is being conducted in accordance with the “Decree Pertaining to Issue of Licenses for Nuclear Facilities, 1983”. The licensing process for nuclear facilities is completed in three phases: Site, Construction and Operating Licenses.

DNS inspectors are responsible for checking whether the nuclear facility is being operated properly and conforms to the regulations and operating conditions in force. Routine and non-routine inspections including siting, construction, commissioning, operation, physical protection of nuclear facilities, security and safeguards activities and environmental protection are performed by inspectors of DNS according to relevant TAEK regulations.

However, having limited experiences in licensing of nuclear facilities, DNS needs taking advice and support from experienced member state nuclear regulatory body for improving review, assessment and inspection procedures to achieve more effective and efficient performance. Therefore, there is a need for personnel to be trained on review and assessment

and regulatory safety inspection. Internships will enable the regulatory staff of TAEK with necessary skills and experience on the field.

After successful completion of the project, DNS will become more competent in reviewing and assessing the Safety Analysis Report to ensure that it satisfies regulations and guides. Elaborated regulations and guides for nuclear facilities will be developed to comply with the EU practices. Regulatory inspections will be performed more effectively to ensure that the requirements are met by the licensee and the licensee's own inspection program, described in the license application and accepted by the TAEK, is being effectively implemented and to take appropriate enforcement actions when non-compliance occurs.

3.1.2 Turkish Nuclear Power Program

The Republic of Turkey sees the use of nuclear energy in its energy mix as an important factor to energy security policies. In this respect, Turkey has a plan to have about 20.000 MWe nuclear power plants by the year 2030. In order to reach this goal, Turkey's first and second nuclear power plant projects have taken some progress each about 5.000 MWe. Akkuyu and Sinop Nuclear Power Plants will be the first two nuclear power plant projects to be implemented in Turkey's nuclear power program.

As the implementation of these two projects is progressed, other projects are expected to be developed.

Within the framework of Turkish Nuclear Power Programme, negotiations with different countries which have different type of nuclear power technologies, such as VVER, PWR and BWR have been conducted by the Ministry of Energy and Natural Resources. VVER type has already been selected for the first NPP. It is highly possible that the second nuclear power plant will not be VVER type. Therefore, it is expected that the Turkey will host more than one type of NPPs from different vendor countries.

3.1.2.1 Akkuyu Nuclear Power Plant

Akkuyu NPP will be the first nuclear power plant of Turkey which will have four units of VVER-1200 type reactors with total installed power capacity of 4800 MWe. The first unit of the project is expected to be operational by the year 2019. Below is the list of chronological developments on the Akkuyu Nuclear Power Plant Project:

- Akkuyu had already been granted for site license for nuclear power plant.
- 12 May 2010 "Agreement between the Government of the Russian Federation and the Government of the Republic of Turkey on cooperation in relation to the construction and operation of a nuclear power plant at the Akkuyu site in the Republic of Turkey" is signed.
- 21 July 2010 Intergovernmental Agreement is ratified by the Grand National Assembly of Turkey.
- 24 November 2010 Intergovernmental Agreement is ratified by the Council of Federation of Russia.
- 13 December 2010 Project Company (Akkuyu NGS Elektrik Üretim A.Ş.) is established.
- 07 February 2011 Project Company applied to the Turkish Atomic Energy Authority for being recognized as the owner.
- 28 February 2011 Turkish Atomic Energy Authority recognized Project Company as the owner according to the Decree Pertaining to Issue of Licenses for Nuclear Facilities.
- March 2011 Project Company has started detailed site investigations to update the site

report.

- December 2011 Project Company has applied for EIA.
- December 2011 Project Company has applied for Electricity Production License.
- 20 September 2013 Approval of Updated Akkuyu Site Report

3.1.2.2. Sinop Nuclear Power Plant

Sinop has been identified as the site for second nuclear power plant of Turkey. Preparatory work has been under way at Sinop on the Black Sea coast to build a second nuclear plant (expected total power is 4800-5600 MWe) there.

3.1.3 The international conventions and agreements that are in force in Turkey

1. Convention on Nuclear Safety, 1994
2. Paris Convention on Third Party Liability in the Field of Nuclear Energy (29 July 1960), 1961
 - a. Protocol to Amend the Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960 (28 January 1964), 1967
 - b. Protocol to Amend the Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as Amended by the Additional Protocol of 28 January 1964 (16 November 1982), 1984
3. Treaty on the Non Proliferation of Nuclear Weapons (NPT), 1979
4. Agreement Between the Government of the Republic of Turkey and the IAEA for the Application of Safeguards in Connection with NPT, 1981
 - a. Protocol Additional to the Agreement Between the Government of the Republic of Turkey and the IAEA for the Application of Safeguards in Connection with NPT, 2001
5. Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency, 1990
6. Convention on Early Notification of a Nuclear Accident, 1990
7. Convention on the Physical Protection of Nuclear Material, 1986 (2005 amendment has been signed).
8. Comprehensive Test Ban Treaty, 1999
9. Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (acceding process is going on)

3.2. Linked activities

Turkish Atomic Energy Authority has been carried out the International Atomic Energy Agency Technical Coordination project. The project title and codes are : “TC Project Code and Title: TUR9019 / Enhancing the Turkish Atomic Energy Authority's capabilities for regulatory oversight of construction, commissioning and operation of new nuclear power plants” This going on project period is between 2014 and 2015. The objective of this Project is to enhance TAEK's capabilities to manage the licensing process and oversee the construction, commissioning and operation of multiple unit NPPs to be built in Turkey.

3.3. Results

The results to be achieved by the project and their related measurable indicators are the following:

Component 1. Transposition of the EU nuclear safety and security acquis.

Result 1:

An efficient regulatory and supervisory framework for nuclear safety and security approximated with the relevant EU Directives, legal acts and best practices and approximated with the EU acquis– is effectively introduced in Turkey

Indicators

- a) One gap analysis report is prepared to identify the differences between Turkey's existing legislation and requirements under EU nuclear safety and security acquis during the first three months of the intervention, then submitted to DNS.
- b) One action plan is prepared to comply with EU acquis up to first five months of the intervention, then submitted to DNS
- c) 4 regulations are drafted or published according to the prepared action plan at the end of the intervention.

Component 2. Development and implementation of review and assessment procedures for licensing and permission activities

Result 2:

Drafted or published procedures/documentation for the evaluation of license applications related to siting, construction and operation of NPPs,

Indicators

- a) At least six review and assessment guidelines for safety analysis reports are revised by the end of the intervention.

Component 3. Improving regulatory inspection capability

Result 3:

Drafted or published procedures/documentation for the manufacturing and construction inspections.

Indicators

- a) At least four existing regulatory inspection documents of DNS (especially guidelines) will be reviewed by end of first year.
- b) At least four new regulatory inspection documents of DNS will be drafted or published by the end of the intervention.

Component 4. Human Resource Management

Result 4:

Improvement of human resource management system of TAEK Nuclear Safety Department

Indicators

- a) TAEK Nuclear Safety Department Human Resource Management Manual will be prepared by the end first year of the intervention.

- b) Nuclear safety and security regulatory training programme for DNS is prepared by the end of the intervention for different level of staff especially for technical competency.
- c) 5 workshops, 2 study visits, 3 internships (each of them is two months) are carried out by the end of the intervention.

3.4 Activities

The activities listed below represent the minimum activities to be implemented in the course of the Twinning project. Member State(s) may propose additional activities in line with the methodology elaborated in its proposal.

The listed activities, the proposed means, the number of allocated working days per activity and related budget are only of indicative nature and can be later adjusted/revised in the framework of the preparation of the contract between the twinned institutions.

The web page will be created in order to disseminate the activities and outcomes of the Project to the public in TAEK web site

The RTA will hire an Assistant (RTA Assistant) and a Language Assistant through an appropriate selection procedure

Component 1. Transposition of the EU nuclear safety and security acquis.

Activity 1.1. Review of existing Turkish legislation and preparation of gap analysis report and action plan .

The target of this task is to determine the gap between Turkish nuclear regulatory framework and EU nuclear safety and security acquis.

- Reviewing existing acts, regulations, guides and other regulatory documents in the following areas
 - Authorization procedure
 - Nuclear safety
 - Waste management
 - Radiation protection
 - Transport safety
 - Emergency preparedness and response
 - Management system
 - If necessary other related subjects
- Preparation of gap analysis report identifying areas that acts, regulations, guides and documents need to be developed with focus on in line with EU legislation
- Preparation of action plan within the scope of gap analysis report for above issues

6 short-term experts will identify main differences (gaps) between Turkey's nuclear safety and security legislation and its implementation with the EU nuclear safety and security acquis 180 working days (6 STEs X 30 working days=180 wd.) in DNS and one month in his/her institutions.

At the end of the first quarter of the project GAP ANALYSIS REPORT will be submitted to the DNS

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 180 wd (12 STE missions (6 STEs x2 flights) x 15 wd) (6 STEs will come to Turkey two times each of them will be 15 working days.)

Activity 1.2. Assistance to drafting by-laws, rules and regulations

Development of national nuclear safety and security regulatory infrastructure by reviewing of draft legislations and developing/drafting new legislations which are in line with EU nuclear safety and security acquis, IAEA safety standards and related conventions in the field of nuclear safety and security by taking into account the GAP ANALYSIS REPORT which is the result of Activity 1.1.

MS STEs will provide consultancy and assistance while drafting/developing those act, regulations, guides and other related documents and reviewing draft legislations in headquarters of TAEK in Ankara Turkey.

The 6 short-term experts will review draft legislations and will provide assistance while developing new legislation according to the gaps defined in the report submitted to the TAEK. Short-term experts will study 1 month in his/her institutions and 2 months in DNS. (6 STEs will come to Turkey two times each of them will be 30 working days.)

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 360 wd (12 STE missions (6 STEs x2 flights) x 30 wd) (6 STEs will come to Turkey two times each of them will be 30 working days.)

Component 2. Development and implementation of review and assessment procedures for licensing and permission activities

This activity involves the development of effective and efficient methodologies and procedures for review and assessment of licensing documentation submitted by licensee/applicant, including (Preliminary) Safety Analysis Reports for siting, construction and operation of NPP's.

The supporting organization will transfer its experience and assist Turkish Atomic Energy Authority to develop and improve its own procedures.

The 6 short-term experts will review existing review and assessment procedure and related documents. If the short term experts of Activity 1.1 and 1.2 will take part in in this Component 2, it will be more beneficiary. These experts will study 1 month in his/her institutions and 1 month in TAEK.

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 180 wd (12 STE missions (6 STEs x2 flights) x 15 wd) (6 STEs will come to Turkey two times each of them will be 15 working days.)

Component 3. Strengthening Inspection Capabilities

Review of existing Turkish regulatory inspection documents and developing new procedural

manuals and guidelines on inspection

MS STEs will review DNS's existing documents for regulatory inspection of siting, construction, commissioning, operation and decommissioning of nuclear facilities including inspection of manufacturing of equipment and components and will provide support to DNS experts during the development of effective and efficient methodologies, procedures and documents for all regulatory inspection activities.

4 short term experts (STEs) will review the existing documents for regulatory inspection and provide support to to DNS experts during the development of effective and efficient methodologies, procedures and documents for all regulatory inspection activities. These experts will work 1 month in his/her institutions and 1 month in TAEK headquarters.

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 120 wd (8 STE missions (4 STEsx2 flights) x 15 wd)

4 STEs will come to Turkey two times each of them will be 15 working days.)

Component 4. Human Resource Management

Development of national nuclear safety and security regulatory human resource management system for Department of Nuclear Safety staff and the training of current and new staff through in order to carry out the regulatory functions.

Component 4.1 Preparation of Nuclear Safety Department Human Resource Management System Manual

Two short term experts will be placed in TAEK for one month period in the first quarter of the project. The task of these experts is to help to the preparation of human resource management system manual.

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 40 wd (4 STE missions (2 x2 flights) x 10 wd)

Component 4.2 Workshops

- Five-day Workshops

5 workshops will be carried out in the field of nuclear safety and security regulatory activities during the implementations of the project in Turkey.

4 short team experts will take part in each workshop.

Indicative number of allocated expert working days

MS: RTA

MS Expertise (w/d): 4 STEs*5 days =20 wd and 4 flights for one workshop

20 wd *5 WS= 100 wd and 4*5=20 flights for5 workshops

Component 4.3 Study Visits (SV)

- Five-day Study Visits

2 study visits (total seven DNS staff will take) will be carried out in the Member States in the

field of inspection and human resource management during the implementation of the project. For each visit one short-term expert will provide advisory service to DNS staff.

Subjects of the SVs:

- Inspection activities carried out by MS Regulatory Body
- Competence management activities carried out by MS Regulatory Body

Staff requirements

- At least three year experience in related area.
- Four DNS staff for inspection SV
- Three DNS staff for competence management SV

1. Inspection SV programme should include

- Discussion on inspection procedure
- On – site orientation
- Lessons learned

2. Competence management activities SV programme should include

- Competence model
- Human resource activities and planning
- Training programme

Indicative number of allocated expert working days

DNS staff : 7 DNS staff* 5 day=35 wd for DNS staff for two SVs

Component 4.4 Internships

- Two–months Internships

Internships are proposed to study the systems, structure and the working methods of the relevant institutions. They shall take place in order to better understand day to day practices of the institutions and problems they faced and how to solve them. 3 DNS staff will attend a twomonths internships in relevant institutions during the implementation of the project. For each internship program the relevant institution will provide a short-term expert.

Indicative number of allocated expert working days

DNS staff : 3 DNS* 60 day= 180 wd for DNS staff

At least one year experienced DNS staff will take part in internship in the following fields (these fields can be changed during contracting period)

1. Preparation of regulatory documents and review and assessment procedure of licensing documents (1 staff)
2. Inspection (1 staff)
3. Accident Analysis (1 staff)

3.5 Means/Input from MS Partner Administration

3.5.1. Profile and tasks of the Project Leader (PL)

The Project Leader from the Member State must be a high-ranking public servant of a Member State administration, but preferably the Head of a structure engaged in issues

related to the area of nuclear safety regulatory activities and compliance within the regulatory body (or relevant institution), with relevant working experience of at least 5 years.

The MS Project Leader will continue to work at his/her Member State administration but will devote some of his/her time to conceive, supervise and co-ordinate the overall thrust of the Twinning Project, and ensure the attainment of the projected outputs. The Project Leader is fully responsible for co-ordination of the work of the experts.

The MS Project Leader will manage the implementation of the project with the Project Leader from the Beneficiary Country and is expected to devote a minimum of 3 days per month to the project in his/her home administration with an on-site visit at least every 3 months. The Project Leader's seniority will ensure his/her ability to mobilize the necessary staff in support of the efficient implementation of the project. In addition, he/she should coordinate, on the Member State side, the Project Steering Committee (PSC), which will meet in Turkey at least every three/four months.

Project Leader Profile:

- At least university degree (master degree in nuclear engineering or related field is preferable)
- At least 5 years of relevant experience in a MS public administration in the field of nuclear safety regulatory activities
- Experience in project management with focus on EU funded projects and in particular capacity building is preferable.
- The experience of project leader in the licensing and/or inspection activities of pressurized water type reactor is preferable.
- Excellent writing and speaking skills in English.

Project Leader Tasks:

- Conceive, supervise and coordinate the overall preparation of the project;
- Coordinate and monitor the overall implementation of the project including coordination and direction of the MS TW partner;
- Co-ordinate MS experts' work and availability;
- Communicate with the beneficiary, CFCD and EUD;
- Ensure the backstopping functions and financial management;
- Guarantee the successful implementation of the Project's Work Plan;
- Co-chairing the regular Project Steering Committee meeting with the Beneficiary Country Project Leader.

3.5.2 Profile and tasks of the RTA

The Resident Twinning Adviser (RTA) should be an official from a relevant Member State (MC) administration (or equivalent staff) in charge of nuclear safety regulatory activities including its practical application, and having at least 5 years experience in this field.

He/she will be located in the premises of the TAEK in Ankara. He/she will come from an EU Member State to work on a full time and day-to-day basis with the beneficiary administration.

The Resident Twinning Adviser will have a key role in the coordination of the inputs required for the successful implementation of all the project activities. He/she shall be supported by short – term experts.

RTA Qualifications

- Be a civil servant or equivalent staff seconded to work within departments/units of the institution in charge of nuclear safety regulatory activities;
- At least a University degree (Master of Science degree in Nuclear Engineering or related field is preferable asset.)
- At least 5 years of experience in MS administration in the nuclear safety regulatory activities;
- Active knowledge of English language;
- Experience in implementing EU relevant legislation concerning nuclear safety
- The experience in the licensing and/or inspection of pressurized water type reactor is preferable asset
- Experience in implementing international or regional projects in the related area (EU project is preferable asset)

RTA Tasks

As to the general responsibility of the day-to-day implementation of the Twinning project in the Beneficiary Country, the Resident Twinning Adviser (RTA) tasks will include:

- To coordinate of all project activities and experts' inputs in the country;
- To provide technical advice, support and assist the beneficiary institution in the context of a predetermined work plan;
- To make recommendations on the organizational structure optimization;
- To assist the further development of a sustainable institutional framework (system and mechanisms) which would ensure the efficient and effective functioning;
- To ensure day-to-day implementation of the Twinning project in the BC
- To ensure smooth correlation between the activities, deadlines and the envisaged results in the Work Plan;
- To ensure smooth implementation of the different activities delivered;
- To assess continuously the Twinning Project in all stages and provide link to compare it with the specified benchmarks/results and time-frame;
- To prepare the material for regular monitoring and reporting;
- To take corrective actions, if necessary, inside the terms of the signed contract
- To assist in the preparation of all strategic project documents [inception study, sector strategy/policy/plan, quarterly monitoring reports, final project report, training manuals etc.]
- To ensure continuity of implementation through: the execution of the day to day management; working on a daily basis with TAEK staff to implement the project;
- To plan and coordinate outputs;
- To provide detailed reports on the impact of the project.
- To liaise with the BC Project Leader and RTA Counterpart
- To ensure proper quality of outputs;

3.5.3 Profile and tasks of the short-term experts

General Professional Experience

- At least ten (10) years of experience in development and implementation of nuclear safety and security regulations
- PhD or master degree in fields of nuclear engineering or related field is preferable asset
- Good command of written and spoken English
- Have full computer literacy
- Experience in teaching will be an asset
- The experience in the licensing and/or inspection of pressurized water type reactor is preferable asset

For Activity 1 and Activity 2 STE specific qualifications and tasks are given below

Specific Professional Experience

- At least five (5) years of experience in development and implementation of regulations about the following subject
 - NPP Siting
 - Design of buildings, structures, systems and elements
 - Reactor and primary circuit and associated systems
 - Steam turbine facility
 - Instrumentation and control
 - Power Supply
 - Auxiliary systems
 - Radioactive waste management
 - Radiation protection
 - Safety Systems
 - Commissioning
 - Accident Analysis
 - Quality Management System
 - Inspection (site, construction, manufacturing of long lead items)
 - Security and Physical Protection
- At least 10 years of experience in review and assessment of licensing documents (preliminary safety analysis report, final safety analysis report, etc) for nuclear power plants

Experts' task

- Preparation of gap analysis report
- To provide technical inputs in the specific areas of the project implementation of the activity with specialist knowledge in the evaluation of existing regulation and preparation of new nuclear safety and security regulations.
- To provide technical inputs to the activity with specialist knowledge in the evaluation of existing **review and assessment procedures and** preparation of new procedures and guidelines
- To provide specialist support services

For Activity 3 STE specific qualifications and tasks are given below

Specific Professional Experience

- At least 10 years of experience in regulatory inspection activities of nuclear power plants
- At least 10 years of experience in regulatory inspection activities of manufacturing of equipment and components
- The experience in the licensing and/or inspection of pressurized water type reactor is preferable asset

Experts's task

- To contribute to the project with specialist knowledge in the evaluation of existing regulatory inspection **procedures and** preparation of new procedures.
- To provide specialist support services

For Activity 4 STE specific qualifications and tasks are given below

Activity 4. Human Resource Management

Specific Professional Experience

- At least five (5) years of experience in development and implementation of human resource management system especially for Nuclear Safety Regulatory Body.
- At least five (5) years experience in teaching or supervising trainees.

Experts's task

- To give technical support to the activity with specialist knowledge in the development of human resource management system for TAEK Nuclear Safety Department
- To contribute to the project with specialist knowledge in the preparation of training programme for TAEK Nuclear Safety Department staff
- To prepare training course modules for nuclear safety and security
- To provide specialist support services

4. Institutional Framework

In Turkish Atomic Energy Authority Act (Act No. 2690 – 1982), TAEK is defined as a judicial organization under the direct supervision of the Prime Minister and authorized for drawing up regulations concerning radiation protection, safety and security of nuclear installations, nuclear materials and radioactive sources; authorized and responsible for licensing of nuclear facilities and radioactive sources. TAEK undertakes all the regulatory activities concerning nuclear safety and security, radiation safety, radioactive waste safety, transport safety and safeguards in Turkey.

The Regulatory functions of TAEK are performed by two departments, namely Department of Nuclear Safety (DNS) and Department of Radiological Health and Safety (DRHS).

According to the Turkish Atomic Energy Authority Law (No 2690 - Article: 8-a), the mission of the Department of Nuclear Safety is to implement the tasks, given by this law, concerning the services related to nuclear safety, site selection of the nuclear facilities, construction, system engineering, commissioning, operation, physical protection; radiation safety, nuclear material safety and inspection, environmental safety, and other interested duties.

The purpose of the project is to ensure that the regulations are in line with EU acquis and/or practices, particularly in specific issues, by taking advice and support from experienced member state nuclear regulatory body or bodies and consultancy from EU on the areas needed and to improve the competency of the Department of Nuclear Safety.

5. Indicative Budget

The estimated budget available of the action is approximately € 1510000 . Turkey will contribute 5% of the total project budget.

<i>Title: Improvement of Nuclear Safety Regulatory Infrastructure of Turkey</i>	IPA Community Contribution	National Co-financing	TOTAL
Standard Twinning Contract	95% 1,434,500,00 €	5% 75,500,00 €	1,510,000,00 €

The co-financing requirement foreseen under IPA will be considered fulfilled according to the provision of the relevant Financing Agreement. After budget table

6. Implementing arrangements:

6.1. Contracting Authority responsible for tendering, contracting and accounting

The Contracting Authority responsible for tendering, contracting and accounting is the Central Finance and Contracts Unit (CFCU).

The person in charge of this project is:

Ms. Emine Döğər
Acting PAO- CFCU Director
Central Finance and Contracts Unit
Tel: +90 312 295 49 00
Fax: +90 312 286 70 72
Address: Eskişehir Yolu 4.Km.2180.Street Halkbankası Kampüsü No: 63 C-Blok
06580 Söğütözü/Ankara

6.2 Beneficiary (BC PL, RTA Counterpart)

The beneficiary of the Project is the Turkish Atomic Energy Authority (TAEK).

Address:

Mustafa Kemal Paşa Mahallesi Dumlupınar Bulvarı No:192
06800 Çankaya/ANKARA
TURKEY
+90 (312) 295 8700 (Santral)

Details of the BC Project Leader are as follows:

Mehmet CEYHAN
Head of Department of Nuclear Safety

RTA Counterpart:

Mustafa VURAL, Department of Nuclear Safety

6.3. Contracts

Only one twinning contract is foreseen for this project.

7. Implementation Schedule (Indicative)

Project duration: *21 months for implementation and first 1 month for starting and last 2 months for closure*

Launch of the call for MS Twinning proposals: April 2015

Reception of the proposals: June 2015

Notification to MS: July 2015

Signature of the contract: January 2016

Start of Twinning Project Activities: April 2016 (implementation)

Project Completion: April 2018

8. Sustainability

The achievements of the Twinning Project (mandatory results) should be maintained as a permanent asset to the Beneficiary administration even after the end of the Twinning project implementation. This assumes inter alia that effective mechanisms are put in place by the Beneficiary administration to disseminate and consolidate the results of the project.

Through the institution and capacity building efforts TAEK will be sustainably developed in an internationally highly respected and reputable nuclear safety and security regulatory body according to international standards.

Through the implementation of this Project, Turkey's improved nuclear safety and security regulatory capacity will be used for the nuclear power plants licensing and inspection periods. Nuclear power plants are always under the supervision of the regulatory authority, this project will enhance the capabilities of regulatory authority in the field of licensing and inspection of nuclear power plants.

TAEK is planning to complete its own complete set of regulations which are inline with IAEA requirements and EU acquis in the licensing of nuclear power plants.. By the help of this project, the TAEK will be able to achieve its goals to have complete set of essential regulations regarding the nuclear power plants.

Another yielding impact of this project will be to decrease dependency of TAEK to the external technical support organizations by means of enhancing of TAEK's technical competence via trained and qualified staffs.

Through training activities of the project, a pool of well-informed knowledgeable and experienced national staff and nuclear safety experts who can carry on future training activities will be developed. This is very important for sustainable management system of the regulatory capacity.

9. Crosscutting issues (equal opportunity, environment, etc.)

Each Twinning partner is required to comply with the equal opportunities requirements of the European Union. The principle of equal opportunity will be integrated into all stages of the project implementation.

10. Conditionality and Sequencing

N/A

ANNEXES TO PROJECT FICHE

- 1. Logical framework matrix**
- 2. Indicative implementation chart**
- 3. List of relevant law and regulations**

ANNEX 1 - Logical Framework Matrix

Improvement of Nuclear Safety Regulatory Infrastructure of Turkey			
	Contracting period expires:		Disbursement period expires:
	Total budget : € 1510000	TURKEY Contribution (%5): € 75500	EU IPA contribution (%95): € 1434500
Overall objective	Objectively verifiable indicators	Sources of Verification	Assumption
The overall objective is to enhance the protection of public and environment against the possible harmful effects of ionizing radiation arising from nuclear activities.	Gap Analysis Report and Action Plan Number of regulations/legal acts adopted Number of training activities performed Number of procedural manuals and guidelines drafted or published	Drafted or Published regulations and documents Training activities reports	
Project purpose	Objectively verifiable indicators	Sources of Verification	Assumptions
The purpose of the project is to harmonize the nuclear safety and security legislation of TAEK in line with EU nuclear acquis and focus on gaining EU experience in regulatory functions in the field of developing regulations and guides, review and assessment, inspection and enforcement.	Compliance with EC Directives	-TAEK Annual Performance Reports -Project reports -Final reports	Commitment of institutions involved - Provision of dedicated staff in beneficiary institution
Results	Objectively verifiable indicators	Sources of Verification	Assumptions
<i>Result 1. An efficient regulatory and supervisory framework for nuclear safety and security approximated with the relevant EU Directives, legal acts and best</i>	a) One Gap analysis report is prepared to identify the differences between Turkey's existing legislation and requirements under EU nuclear	- Submission of Gap Analysis Report and Action Plan	- Approval procedure of the regulations

<i>practices and approximated with the EU acquis– is effectively introduced in Turkey</i>	<p>safety and security acquis during the first three months of the intervention, then submitted to DNS (Component 1.1)</p> <p>b) One action plan is prepared to fully comply with EU acquis up to first five months of the intervention, then submitted to DNS (Component 1.1)</p> <p>c) 4 regulations are drafted or published according to the prepared action plan at the end of the intervention, (Component 1.2)</p>	<ul style="list-style-type: none"> - Twinning Project's Quarterly and Final reports. - Project Steering Committee reports. - Laws and regulations in place or drafted 	
<i>Result 2. Drafted or published procedures/ documentation for the evaluation of license applications related to siting, construction and operation of NPPs;.</i>	<p>a) At least six review and assessment guidelines for safety analysis reports are revised by the end of the intervention.</p>	<ul style="list-style-type: none"> – Reviewed or drafted/ prepared guidelines 	
<i>Result 3. Drafted or published procedures/ documentation for the manufacturing and construction inspections.</i>	<p>a) At least four existing regulatory inspection documents of DNS (especially guidelines) will be reviewed by end of first year.</p> <p>b) At least four new regulatory inspection documents of DNS will be drafted or published by the end of the intervention.</p>	<ul style="list-style-type: none"> - Reviewed or drafted/ prepared guidelines 	
<i>Result 4. Improvement of human resource management system of TAEK Nuclear Safety Department</i>	<p>a) TAEK Nuclear Safety Department Human Resource Management Manual will be prepared by the end first year of the intervention.</p> <p>b) Nuclear safety and security regulatory training programme for DNS is prepared by the end of the</p>	<ul style="list-style-type: none"> - Published or drafted Human Resource Manual - Training programme - Training activities 	

	<p>intervention for different level of staff especially for technical competency.</p> <p>c) 5 workshops, 2 study visits, 3 internships (each of them is two months) are carried out by the end of the intervention.</p> <p>d)</p>	report	
Activities	Means	Assumptions	
<p>The activities listed below represent the minimum activities to be implemented in the course of the Twinning project. Member State(s) may propose additional activities in line with the methodology elaborated in its proposal.</p> <p>Component 1. Transposition of the EU nuclear safety and security acquis.</p>			
<u>Activity 1.1. Review of existing Turkish legislation and preparation of gap analysis report.</u>	180 wd (12 STE missions (6STEs x2 flights) x 15 wd);		
<u>Activity 1.2. Assistance to drafting by-laws, rules and regulations</u>	360 wd (12 STE missions (6 STEs x2 flights) x 30 wd)		
<u>Component 2. Development and implementation of review and assessment procedures for licensing and permission activities</u>	180 wd (12 STE missions (6 STEs x2 flights) x 15 wd)		
<u>Component3. Strengthening Inspection Capabilities</u>			

<u>Review of existing Turkish regulatory inspection documents and developing new procedural manuals and guidelines on inspection</u>	120 wd (8 STE missions (4 STEsx2 flights) x 15 wd)	
<u>Activity 4. Human Resource Management</u>		
<u>Activity 4.1 Preparation of Nuclear Safety Department Human Resource Management System Manual</u>	40 wd (4 STE missions (2 x2 flights) x 10 wd)	
<u>Activity 4.2 Workshops</u>	4 STEs*5 days =20 wd and 4 flights for one workshop 20 wd * 5 WS= 100 wd and 4*5=20 flights for 5 workshops	
<u>Activity 4.3 Study Visits</u>	DNS staff : 7 DNS staff* 5 day=35 wd for DNS staff for two SVs	
<u>Activity 4.4 Internships</u>	DNS staff : 3 DNS* 60 day= 180 wd for DNS staff	

Annex 2- Indicative Work Plan

The following work plan is indicative and gives only an orientation how the Twinning Project may be structured to ensure a smooth implementation process.

	Project Month																							
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Activity 1.1	Starting period																						Closure Period	
Activity 1.2																								
Activity 2																								
Activity 3																								
Activity 4.1																								
Activity 4.2																								
Activity 4.3																								
Activity 4.4																								

In sector fiche

This measure will be implemented by CFCU through Twinning contract. The overall duration of the project is envisaged to be 24 months with activities to take place during the 21 months (21 months for implementation and first 1 month for starting and 2 months for closure).

ANNEX 3- List Of Relevant Laws And Regulations

Laws

1. Law on Turkish Atomic Energy Authority, 1982

Decrees

1. Decree Pertaining to Issue of Licenses for Nuclear Facilities, 1983

Regulations

1. Regulation on Physical Protection Measures of Special Nuclear Materials, 1979, (Under Revision)
2. Regulation on Working Procedures of Atomic Energy Commission, 1983
3. Regulation on the Establishment and Working Procedures of Advisory Committee on Nuclear Safety, 1997
4. Regulation on Safe Transport of Radioactive Materials, 1997, (IAEA TS R-1)
5. Regulation on Accounting for and Control of Nuclear Materials, 1997, (Under Revision)
6. Regulation on Radiation Safety, 2000, (BSS-115) (Rev'd 2010)
7. Regulation on National Practices during Nuclear and Radiological Emergencies, 2000
8. Regulation on Nuclear Safety Inspections and Enforcement, 2007 (GS G-1.3) (Rev'd 2008)
9. Regulation on Basic Requirements on Quality Management for the Safety of Nuclear Facilities, 2007, (IAEA SS-50-C) (Rev'd 2009)
10. Regulation on Design Principles for Safety of Nuclear Power Plants, 2008, (IAEA NS R-1)
11. Regulation on Specific Principles for Safety of Nuclear Power Plants, 2008, (IAEA NS R-2)
12. Regulation on Environmental Impact Assessment, 2008
13. Regulation on Nuclear Power Plant Sites, 2009, (IAEA NS R-3)
14. Regulation on Radioactive Waste Management
15. Regulation On Clearance In Nuclear Facilities And Release Of Site From Regulatory Control

Documents and Guides

1. A Guide on Fire Protection in Nuclear Power Plants
2. A Guide on Documentation Examples, Work Instructions and Procedures for the QA Program for Survey, Assessment and Approval of Nuclear Power Plant Sites
3. A Guide on External Man-Induced Events in Relation to Nuclear Power Plant Design
4. A Guide on Seismic Design and Qualification of Nuclear Facilities
5. A Guide on the Earthquake Related Subject Requested in the Issuance of Limited Work Permit and Site License, 1989
6. A Guide on Establishing and Implementing a Quality Assurance Programme for Safety in Nuclear Facilities, 2009, (IAEA Safety Series No. 50-C/SG-Q1)
7. A Guide on Management of Non-Conformance Control and Corrective Actions for Safety in Nuclear Facilities, 2009, (IAEA Safety Series No. 50-C/SG-Q2)
8. A Guide on Management of Document Control and Records for Safety in Nuclear Facilities, 2009, (IAEA Safety Series No. 50-C/SG-Q3)
9. A Guide on Inspection and Testing for Acceptance for Safety in Nuclear Facilities, 2009, (IAEA Safety Series No. 50-C/SG-Q4)
10. A Guide on Assessment of the Implementation of the Quality Assurance Programme for Safety in Nuclear Facilities, 2010, (IAEA Safety Series No. 50-C/SG-Q5)
11. A Guide on Quality Assurance in Procurement of Items and Services for Safety in Nuclear Facilities, 2010, (IAEA Safety Series No. 50-C/SG-Q6)

12. A Guide on Establishing and Implementing a Quality Assurance Programme in Siting for Safety in Nuclear Facilities, 2010, (IAEA Safety Series No. 50-C/SG-Q9)
13. A Guide on Format and Content of Site Report for Nuclear Power Plants, 2009
14. Directive on Principles of Licensing of Nuclear Power Plants, 2010