



TURKISH ATOMIC ENERGY AUTHORITY

TURKEY'S NATIONAL REPORT SUPPLEMENT REPORT No: 2

ON COMPLIANCE WITH THE OBLIGATIONS OF
THE CONVENTION ON NUCLEAR SAFETY

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INTRODUCTION

Most of the main national organizations involved in nuclear power project activities in Turkey are remained the same, the Ministry of Energy and Natural Resources, the State Planning Organization (DPT), the Turkish Atomic Energy Authority (TAEK) and the Ministry of Environment. The Turkish Electricity Generation and Transmission Corporation (TEAS) has been gone through a reorganization based on requirements set by the Electricity Market Law, and divided into three organizations. Among them, the Electricity Generation Corporation is the name of the prospective utility for a nuclear power plant.

Department of Nuclear Safety continues the activity on enhancing the national regulatory structure and competence on nuclear safety. While most of the documents that laying out the safety principles has been drafted and approved, several documents on detailed issues such as reports and records, unusual event reporting, etc., have also been drafted according to the plan. Final stage of the plan is to issue these documents as regulations.

Meanwhile, TAEK continues to enhance emergency preparedness and response capabilities against existing NPPs close to national territory. The RESA (Radiation Early Warning System) has been strengthened by upgrading the stations to be continuously online and increasing the number of stations. A laboratory is being established for environmental monitoring to observe the effects of Metzamor and to analyze the samples that will be collected in case of real emergency. Negotiations with Russia, Romania, and Armenia have already been initiated for bilateral agreements on early warning of nuclear and radiological accidents as further measures on nuclear safety of Turkey.

This document has been compiled as a supplementary report, containing only updated information reflecting the changes since the submission of the Turkey's National Report (TNR2001) for the Second Review Meeting.

REVIEW OF THE NATIONAL STATUS

A. GENERAL PROVISIONS

EXISTING NUCLEAR INSTALLATIONS (ARTICLE 6)

There is no change since 1999 regarding Article 6 of the Nuclear Safety Convention.

B. LEGISLATION AND REGULATION

LEGISLATIVE AND REGULATORY FRAMEWORK (ARTICLE 7)

As it was mentioned in TNR2001, the Ministry of Environment has completed revision of the “Regulation on Environmental Impact Assessment” in order to comply with the European Union regulations. “Regulation on Environmental Impact Assessment” has been published in Official Journal No: 25318 on 16th of December 2003. This revision brought that all the nuclear reactors having 1 kW thermal power or above is subject to Environmental Impact Assessment report. Rest of the nuclear reactors requires “Environmental Impact Study.”

Under continuing studies on development of national regulations, “Specific Safety Principles for Nuclear Power Plants” has been approved by the decision making body of TAEK, the Atomic Energy Commission (AEC). This document is mainly based on the INSAG 12 “Basic Safety Principles for NPPs” and addresses specific safety issues for NPPs. This document completed the series on general NPP safety standards together with “Safety Objectives for Nuclear Installations” and “Basic Safety Principles for Nuclear Installations”.

Meanwhile, to establish a faster means of issuing regulations on detailed issues such as procedural matters and acceptance criteria, a regulation on “Drafting, Approval, Issuance and Amendment of Nuclear Safety Series Documents” has been issued on December 2001.

The Basic Turkish Safety Principles, explained in detail in Turkey’s National Report 1999 (TNR1999), has been recently revised and renamed as “Directive on Basic Methods and Principles for Licensing of Nuclear Power Plants”, but this directive is yet to be approved by AEC of TAEK. Revised directive lays on the applicable regulations for licensing and requires the owner to provide regulatory body with a reference plant and its safety documentation. With regard to previous version,

while both priority and content of the applicable regulations for NPP licensing has been changed, licensability of proposed NPP in supplier's home country has been deleted from the requirements list.

Being a member of IAEA and OECD/NEA, Turkey continued its international activities through international and bilateral agreements. Agreements between the United States of America and the Republic of Turkey and between France and the Republic of Turkey on the peaceful uses of nuclear energy were ratified by parliament in 2004. A revised list of international and bilateral agreements in which Turkey is a party is given in Annex I.

REGULATORY BODY (ARTICLE 8)

Regulatory Body of Turkey is the Turkish Atomic Energy Authority (TAEK), which undertakes all the regulatory activities concerning nuclear and radiation safety together with the coordination and support of research and development activities in nuclear field.

The Government of Turkey re-organized the connections of several public agencies to ministries. In this re-organization, Minister of Energy and Natural Resources was authorized to supervise TAEK on behalf of Prime Minister.

As it was mentioned in TNR1999, Department of Nuclear Safety is responsible for the most of the regulatory activities concerning nuclear facilities within the Authority, while QA/QC and radiation safety activities are performed by different departments. There is a strong intention on collecting all regulatory activities within the Department of Nuclear Safety through the reorganization activities currently on going. Discrimination of responsibilities has been drafted for both Department of Nuclear Safety within the Authority and divisions within the departments.

The re-organization activity of Department of Nuclear Safety that was mentioned in TNR2001 was discontinued because of a more radical re-organization is under planning in TAEK. Department of Nuclear Safety current structure is the same as which was explained in TNR1999. Since some department staff has been promoted, Department of Nuclear Safety has experienced a decrease in its number of staff. Currently, Department of Nuclear Safety has 18 technical personnel in its three divisions.

Due to cancellation of the Akkuyu Nuclear Power Plant project, the prospective licensing activities will be realized in a structure that was explained in TNR1999.

RESPONSIBILITY OF THE LICENSE HOLDER (ARTICLE 9)

Prime responsibility for the safety of a nuclear installation is on the holder of the relevant license, and this responsibility is clearly stated in “Fundamental Safety Principles for Nuclear Facilities” document. This responsibility also covers the activities related to the documentation, maintenance, preparing reports, changes in operational limits and conditions, conducting experiments, operation, and decommissioning with the approval of TAEK.

Besides, the Article 7 of the licensing decree (Annex IV of TNR1999) states that “Applicant shall provide insurance or other financial guaranties according to the provisions of the Paris Convention on Third Party Liability in the Field of the Nuclear Energy, ratified by the Act No. 229 dated 8 may 1961, and its attachments and amendments.”

Turkey is a party to the “Paris Convention on Third Party Liability in the Field of Nuclear Energy.” Turkey signed the 2004 Protocol amending “Paris Convention on Third Party Liability in the Field of the Nuclear Energy”. A new regulation, reflecting the provisions of revised “Paris Convention on Third Party Liability in the Field of the Nuclear Energy” is being drafted. After the ratification of above mentioned protocol by the parliament, the draft regulation will be presented to the parliament for approval.

C. GENERAL SAFETY CONSIDERATIONS

PRIORITY TO SAFETY (ARTICLE 10)

The main mission of TAEK is to ensure that the use of nuclear energy in Turkey does not pose undue risk to health and the environment. This objective and the priority given to safety are also emphasized in previous regulatory documents, “Safety Objectives for Nuclear Installations” and “Fundamental Safety Principles for Nuclear Installations.” The issue of priority to safety is also reflected in the new document, namely, “Specific Safety Principles for NPP’s”.

FINANCIAL AND HUMAN RESOURCES (ARTICLE 11)

After the Electricity Market Law came into force, Turkish Electricity Generation and Transmission Corporation (TEAS) was divided into three corporations. The Nuclear Power Plant Department of former TEAS has been taken part in the Electricity Production Company. But, the

cancellation of Akkuyu nuclear power plant project has been resulted in dissolving of the Nuclear Power Plant Department. The staff of former department has been distributed to other units of the Electricity Production Company.

HUMAN FACTOR (ARTICLE 12)

The operating organization responsibilities, human resource management issues, and training of operating organization are detailed in several articles of the document on “Specific Safety Principles for NPPs”.

QUALITY ASSURANCE (ARTICLE 13)

In addition to regulations given in TNR1999 and TNR2001, new regulations on QA activities were issued since the Second Review Meeting. A list and scopes of these regulations are given in Annex II.

ASSESSMENT AND VERIFICATION OF SAFETY (ARTICLE 14)

Since the “Decree Pertaining to Issue of Licenses for Nuclear Installations” is still effective, and there is no revision on the decree, the licensing procedures are same as the ones explained in TNR1999.

The licensing activities of nuclear installations are conducted by the Vice President for Nuclear Power and Safety, the Advisory Committee on Nuclear Safety, and Department of Nuclear Safety according to the Decree Pertaining to Issue of Licenses for Nuclear Installations.

Document on “Specific Safety Principles for NPPs” requires that the operating organization shall develop safety verification procedures. Additionally, maintenance, testing and inspection during normal operation have also been considered in the document on “Specific Safety Principles for NPPs”.

RADIATION PROTECTION (ARTICLE 15)

Radiation protection related regulations of Turkey, namely “Decree on Radiation Safety”, “Regulations on Radiation Safety”, and “Regulations on Safe Transport of Radioactive Materials” which were annexed in TNR1999, are under revision to comply with regulations of European Union. The related European Union regulations used for this revision process are Council Directives

96/29/Euroatom, 90/641/Euroatom, 93/1493/Euroatom, and 92/3/Euroatom. As of September 2004, revised “Decree on Radiation Safety” and “Regulations on Safe Transport of Radioactive Materials” were approved by AEC with AEC Decision Number 85/3 and AEC Decision Number 85/4, respectively.

“Specific Safety Principles for NPPs” document clearly states that radiation protection principles are taken into consideration during the site selection and design stage of the nuclear power plants. It also requires adequate and verified radiation protection programs for the operation of nuclear power plants.

EMERGENCY PREPAREDNESS (ARTICLE 16)

As it was mentioned in TNR2001, due to requirements of the national crisis legislation, The Emergency Response Center (ERC) under direct supervision of the President of TAEK has been established with the participation of the representatives of related departments of TAEK. The staff of ERC was not permanent at the beginning of establishment. In 2003, a TAEK directive was brought into force to change the personnel status of ERC. Now, ERC is functioning with five permanent staffs.

Since TNR2001, all Radiation Early Warning System (RESA) stations have become online. RESA is currently operating with totally 67 stations.

“Specific Safety Principles for NPPs” document brings several requirements for emergency preparedness, emergency plans, and exercises including siting, design, construction and operation of Nuclear Power Plant.

Due to very close distance of Armenian Nuclear Power Plants to Turkey east border, some areas in the region is considered as places where early protective measures may be taken during an accident at those plants. In order to facilitate the protective actions, a laboratory is planned to be established in the region in 2004 and implementation activities are going on. Besides, to measure the radiation dose rates in different environments, this laboratory will be equipped and staffed to accommodate measuring the radioactivity in the air, water, soil, feedstuff, and foodstuff samples in the region.

Turkey has bilateral agreements with Bulgaria and Ukraine on early notification of a nuclear accident and exchange of information on nuclear facilities. An agreement on the same subject is still under negotiations with Russia and Romania, while, is initiated with Armenia.

D. SAFETY OF INSTALLATIONS

SITING (ARTICLE 17)

In the “Specific Safety Principles for NPPs” document, several requirements for the siting of nuclear power plants were introduced, including but not limited to external events, radiological impact of proposed NPP, ultimate heat sink and feasibility of emergency plans.

A new regulation comprising quality assurance in site investigation and assessment activities for NPP’s published and referenced in ANNEX-1. This regulation is based on IAEA TECDOC-416: “Manual on Quality Assurance for the Survey, Evaluation and Confirmation of Nuclear Power Plant Sites”. The main topics covered in this regulation are preparation and scope of quality assurance program, documentation and application of quality assurance program, and organizational requirements for site related quality assurance activities.

DESIGN AND CONSTRUCTION (ARTICLE 18)

The requirements on design and construction of nuclear power plants are detailed in “Specific Safety Principles for NPP’s” document. General principles for design, design management, proven technology are regulated in this document. Plant process control systems, safety systems, reliability targets, common cause failures, equipment qualification, inspectability of safety equipment and radiation protection principles in design are also covered. Several requirements regarding design principles against accident prevention and management are introduced. For the construction of nuclear power plants, safety evaluation of design and achievement of quality during manufacturing and construction are main principles, which were regulated in this document.

OPERATION (ARTICLE 19)

“Specific Safety Principles for NPP’s” document also considers safety aspects of operation. The responsibilities and staffing of operating organization, safety review procedures of operating organization, training, operational limits and conditions, normal and emergency operating procedures, feedback of operating experience, maintenance, testing and inspection during operation are the main topics in this document regarding the operation of nuclear power plants.

ANNEX I

RECENT INTERNATIONAL COOPERATION, BILATERAL AND MULTILATERAL AGREEMENTS

A. INTERNATIONAL CONVENTIONS AND TREATIES

- 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 (93+2)

Ratification: 7 June 2001

- Protocol Amending the Paris Convention on Third Party Liability in the Field of Nuclear Energy.”

Signed: 12 February 2004

B. BILATERAL COOPERATION AGREEMENTS

- Agreement Between the Government of France and the Government of Turkey for Cooperation in the Peaceful Uses of Nuclear Energy

Ratification: 14 January 2004

- Agreement Between the Government of United States of America and the Government of Turkey for Cooperation in the Peaceful Uses of Nuclear Energy

Ratification: 14 January 2004

- Agreement Between the Cabinet of Ministries of Ukraine and the Government of Republic of Turkey on Early Notification of a Nuclear Accident and on Exchange of Information on Nuclear Facilities

Ratification: 27 March 2001

ANNEX II

RECENT REGULATIONS ON QA

- 1) Regulation on Quality Assurance in Survey and Confirmation of Nuclear Power Plants Site Selection, (date: 25.02.2002, No: 24766 Official Journal)

Scope: This regulation comprises quality assurance activities during nuclear power plant site survey, confirmation and verification.

Based on IAEA TECDOC-416: Manual on Quality Assurance for the Survey, Evaluation and Confirmation of Nuclear Power Plant Sites, IAEA, 1987

- 2) Guide on Document Examples, Procedures, and Work Instructions Which Are Used in Quality Assurance Programme of Nuclear Power Plant Sites Survey, Confirmation and Approval, (Year: 2002 dated and Atomic Energy Commission Decision Number 81/4)

Scope: The purpose of this regulation is to provide examples of documents, which will be used Regulation on Quality Assurance in Investigation and Assessment Studies of Nuclear Power Plants Site Selection, (date: 25.02.2002, No: 24766 Official Journal)