

**INTERNATIONAL ATOMIC ENERGY AGENCY**

**TECHNICAL COOPERATION DEPARTMENT**

**DEPARTMENT OF NUCLEAR ENERGY**

**PROJECT IRA/2/012**

[**Strengthening and Upgrading Capabilities for Safe and Reliable Operation and Maintenance of a Pressurized Light Water Reactor**](http://tcprime.iaea.org/Default.aspx?Tabid=141&TopicName=TC+Project&TopicParameterName=ProjectNumber&Value=IRA2011&TopicLinkName=)

**PROSPECTUS**

**EXpert Mission**

**on management of design basis information through BNPP-2&3 units life cycle**

**in cooperation with Nuclear Power Production and Development Company of Iran**

**Tehran, Islamic Republic of Iran**

**16 – 19 May 2015**

**Technical Cooperation Project IRA/2/012:**

[**Strengthening and Upgrading Capabilities for Safe and Reliable Operation and Maintenance of a Pressurized Light Water Reactor**](http://tcprime.iaea.org/Default.aspx?Tabid=141&TopicName=TC+Project&TopicParameterName=ProjectNumber&Value=IRA2011&TopicLinkName=)

###### PROSPECTUS

TITLE: **Expert Mission on management of design basis information through BNPP-2&3 units life cycle**

PLACE: Tehran (Busher), Islamic Republic of Iran

DATE: 16 – 19 May 2015

ORGANIZER: International Atomic Energy Agency (IAEA) in cooperation with Nuclear Power Production and Development Company of Iran

MISSION:To assist NPPD/BNPP-2,3 on improvement of the nuclear knowledge management (NKM) system. Provide recommendation for the further development and integration of the DKM into business processes and the day-to-day activities as well as to discuss role and responsibility of the Design Authority and stakeholder’s involvement.

PARTICIPANTS: Representatives from nuclear organizations involved in nuclear related activities:

* Directorate for NPPD,
* Regulatory Body,
* Educational Institutions,
* Research Institutes, commercial and government laboratories,
* Technical support organizations.

LANGUAGE: English/Russian.

OBJECTIVES: EM to discuss scope and structure of Design Basis Information and DK needed to be preserved throughout NPP life cycle (results of start-up operations, testing, drawings, SSC specifications, regulation, technical solutions, etc.) and to develop taxonomy of DBI for further implementation within Plant Information System.

CONTENT: Design Knowledge must be accessible and available to support plant safety whenever required. It must therefore be maintained and managed throughout all phases of design, licensing, manufacturing, construction, commissioning, operation, refurbishment and decommissioning. Design knowledge encompasses a wide scope and a tremendous amount of detail. It is multi-disciplinary, complex, and highly inter-dependent. It includes knowledge of the original design assumptions, constraints, rationale, and requirements and exists in both tacit and explicit forms, both of which are required and are complementary.

Artefacts of DK can include:

• A detailed understanding of why the design is as it is.  
• The experimental and research knowledge on which the design is based.  
• The design inputs such as basic functional requirements, performance requirements, safety goals and safety principles, applicable codes, standards and regulatory requirements, design conditions, loads such as seismic loads, interface requirements, etc.  
• The design outputs such as specifications, design limits, operating limits, safety limits, failure or fitness for service criteria.  
• A detailed knowledge of the design calculations which demonstrate the adequacy of the design and the ability to reproduce the design calculations if needed.  
• An understanding of the inspections, analysis, testing, computer code validation, and acceptance criteria used by participating design organizations to verify that the design output meets the design requirements.  
• The assumptions made in all the steps above, including assumptions related to operating modes or procedures, expected life history such as changes in fluency, expected transients, etc.  
• The implications of operating experience on the design.

The EM will cover both strategic and methodological aspects beside practical guidelines on how to improve the DKM system. It will present the lessons learned, accumulated national experiences and good DKM practices in Nuclear Organizations.

The emphasis will be on the following issues:

* Overview of IAEA NKM Activities and DKM concept,
* Presentation of good practices of Design Knowledge Management,
* Discussion on Design Authority -Roles and responsibilities within Nuclear organizations,
* Interface/ communication between DA and the Design organization( vendor sub contractor)after plant hand over
* Responsibility of Design organization towards the plant, items to be indicated in the contract, practices etc
* Analysis of scope and structure of Design Basis Information (DBI) important to safety
* Taxonomy development of Design Knowledge (DK) and DBI Discussion and recommendation for further taxonomy implementation
* CM related issue

OUTCOMES:

* + - * **Defined scope and structure of DK and DBI need to be managed**
      * **Taxonomy of DK/DBI for further implementation within Plant Information System.**
      * **List of recommendations for the sustainable development of the NKM system at Nuclear Power Production and Development Company of Iran**
      * **Discuss proposals for the next activities in the field of NKM (TC project 2015)**

COUNTERPART : Nuclear Power Production and Development Company of Iran

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