**National Project Concept**

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| **Country name :** Iran, Islamic Republic of | **Project concept priority number within the Country Programme Note :** | **Field of activity :** 06 Nuclear power reactors and 10 Safety of nuclear instalations |

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| **Concept Number :** IRA |
| **Title :**  *The title should be as concise as possible and should summarize the objective of the project.*  Enhancing the level of operational safety and reliability of the BushehrNPP-1 |
| **Original Language Title :** |
| Problem statement :  *Provide a summary of the issue to be addressed by the project. This should be the result of a situation analysis to identify the problem, and its cause and effect.*  The Country's first Nuclear Power Plant (BNPP-1) with VVER 1000 reactor type is in final stage of commissioning where: first criticality was in May 2011, first connection to the grid was in September 2012, and signature for the provisional acceptance certificate at 100% of power with the supplier was in September 2013 at which the full responsibility for the operation was taken-over by the owner's operation organization with involvement of thesupplier’slicensed operational personnel. The unit underwent in February-April 2014 its first outage, refuelling and maintenance, and after its successful completion and tests, the unit will proceed with a guarantee period of 2 years. The final acceptance certificate will be signed after the gurantee test period and normal operation licence will be sought from Iranian Nuclear Regulatory Authority, INRA,Assistance has been provided by the IAEA during the previous and current TC programme cycles on design, construction, commissioning and start-up of BNPP-1. However; further assistance is needed in order to enhance the capabilities of BNPP-1 personnel in the safe operation of the unit especially in the areas of maintenance, repair and emergency planning. To address this particular issue, the plant owner, the Nuclear Power Production and development Co. of Iran (NPPD) has recently established a company known as TAPNA for the maintenance of BNPP-1. NPPD in light ofits commitment to safe and reliable operation of the first NPP unit, wishes to receive a continuation of the IAEA assistance during 2016-2021 which shall facilitate the transfer of operational experience and knowledge gained by the plant operators for further strengthening their capabilities in performing their functions and responsibilities for safe and reliable operation and maintenance of the plant. |
| **Objective :**  *State succinctly what the project is intended to achieve. Please state only one objective.*  To enhance owner’s safety and engineering capabilities towards safe and reliable operation and maintenance of BushehrNPP-1. |
| **End users :**  *Who will use/benefit from the results of the project?(e.g. decision makers, service users, patients, farmers).*  NPPD as the owner and operating organization and the public at large as final beneficiary |
| **Past and present Country efforts to address the need :**  *Summarize any past and present national efforts (programmes/projects) to address the issue to which the project will contribute.*  NPPD as owner and operating organization acquired knowledge and experiences through completed TC project IRA/4/035 and ongoing project IRA/2/011which resulted to successfully application of safety criteria during construction and commissioning of BNPP-1. Now there is a need for enhanced experience in a range of operation-related issues that NPPD must cultivate and acquire to ensure the continued safe and reliableoperation of the power plant. (See Role of the IAEA below) |
| **Role of nuclear technology :**  *Indicate the specific nuclear technique that would be used, and outline why it is appropriate for addressing the issue. Is the technique the only one available to solve the problem? Does the technique have a comparative advantage to non-nuclear techniques? Does the technique complement non-nuclear techniques?*  All nuclear technologies to be used are specific and only available with respect to safe and reliable NPP operation and maintenance. |
| **Role of the IAEA :**  *What specific role would the IAEA be expected to play in the project?*  Continuation of the IAEA TC assistance is required for strengthening owner’s capabilities in number of areas for the safe and reliable operation and maintenance of the first unit at Bushehr NPP, including but not limited to:   1. strengthening capabilities for effective maintenance and outage management, including reinforced ISI and assessment of its results; 2. management of safety and security and ownernuclear oversight; 3. operating experience feedback, OSART mission and follow-up; 4. WWER core fuel management and radioactive waste management; 5. ageing and plant life management for long term operation; 6. accident management and response to nuclear emergencies; 7. technical support activities for independent safety analyses using suitable computer codes, software, techniques and methodologies; 8. training and qualification of personnel, including upgrading of the Bushehr training centre.   Furthermore it is expected that the Agency provides assistance in participation of BNPP-1 personnel in Regional and Interregional activities which would be extremely beneficial and helpful to strengthen and upgrade personnel capabilities for safe and reliable operation of the BNPP-1. |
| **National counterpart institutions / stakeholders :**  *List all national institutions and stakeholders expected to participate in the project, specifying the role of each. Please enter the main counterpart institution and the responsible person first. This person would be in charge of the project at the technical level in-country.*  Nuclear Power Production and Development Co. (NPPD) as the owner of the NPP and licence holder through its subsidiary BNPP-1 Operating Company. Dr M. Ahmadian, Chairman and Managing Director of NPPD Iranian Nuclear Regulatory Authority (INRA) is responsible for supervision of fulfilment of operation licence requirements |
| **Partnership :**  *List all external institutions and partners (other UN or international organizations, donors etc.) expected to participate in the project, specifying the contribution of each.*  none |
| **Physical Infrastructure and human resources :**  *What physical infrastructure and human resources are available to support the project? (existing laboratories, suitable buildings, staff that will be directly involved in this project, etc.)*  Owner’s infrastructure and staff with adequate capabilities will actively participate in the implementation of planned activities. Government Cost Sharing will be provided, administration and logistics for the tasks which are to be performed within the country also will be provided. |
| **Financial resource required and source of funding :**  *Provide an estimate of the total cost of the project and the funding expected from each stakeholder (Government cost-sharing, other partners and IAEA).*  Total cost of the project: US$0000 0 Expected fund from IAEA: US$ 00000, Government Cost Sharing(GCS): US$ 00000 |
| **Duration of the project :**  *Indicate a realistic starting date for the project (bearing in mind that projects cannot start until National Participation Costs (NPCs) have been paid), and the number of years required to complete the project. Projects should not exceed four years.*  Five years starting from 2016. |
| **Safety infrastructure :**  *Indicate whether or not the safety infrastructure and associated standards and procedures at the institutional level are adequate to ensure that the project will be implemented in a safe manner. If not, specify the gaps and indicate how they will be addressed.*  The established Iran Nuclear Regulatory Authority (INRA) is authorized to regulate nuclear and radiation safety and security through regulatory process: issuing regulations, guidelines and conducting licensing and supervisory processes for sitting, design, construction, commissioning, operation and decommissioning of nuclear facilities and radiation installations or specific aspects thereof. The legal framework within which INRA operates include the ACT on Atomic Energy Organization of Iran (1979), the ACT in Radiation Protection (1989), their Regulations and other legal instruments require persons or organizations to be licensed for carrying out any activities related to nuclear facilities or radiation installations, unless otherwise exempted. The associated regulations stipulate prerequisites for regulatory process and the obligations of licensee and workers. |