**INTERNATIONAL ATOMIC ENERGY AGENCY**

**TECHNICAL CO-OPERATION & ASSISTANCE PROGRAMME**

**EXPERT REQUEST FORM**

**N.B: this request form must be submitted to the IAEA at least 3 months prior to expected mission dates**

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| **ADMINISTRATIVE MATTERS** | |
| Project code: | - |
| Project title: | - |
| Title of mission: | Visiting China TIANWAN Plant in Production and NET areas |
| Duty station: | China TIANWAN Plant |
| Administrative (including VISA Support) contact person:  (specify address, phone and E-mail) | [rahnama@nppd.co.ir](mailto:rahnama@nppd.co.ir)  +98-021-24882606  shokoohi@nppd.co.ir  +98-021-24882808 |
| Technical contact person:  (specify address, phone and E-mail) | BNPP Maintenance Division  BNPP Operation Division |
| Duration of mission: | 5 Working days |
| Venue date proposal (provide 2): | 01.Aug.2019 to 30.Dec.2019 |
| Expected breaks and working hours during mission: | As Usual |

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| **TECHNICAL CONTEXT** | | |
| Context of the mission – why is it needed:  (add a justification for the request of the expert mission e.g. To support national project, IAEA project) | Learning techniques and decisions made on planning and organizing activities in period of maintenance unit which raised to reduce the duration of change fuel (Maintenance Division)  Learning modernization on fuel change machine. They consist of the change have been made on preservative absorbs neutron, fuel leakage system and ……. (Maintenance Division)  Transferring experiences in how to change Permanent and Temporary) in systems (Changes in Algorithms, modernization and …) (Production division)  Familiar with manners and methods on cleaning the bottom of the reactor shell in outage when the inner shell is disassembled from the reactor. The type of equipment and facilities and how to eliminate the contamination of these wastes (Division Maintenance)  Familiar with methods and ways of maintenance and removing the probabilistic defects from fuel pool. Specially consist of facilities and fuel pool maintenance equipment in under water level  Familiar with the process of removing spent fuel from fuel pool and to transfer it into the wells and to review the type of spent fuel transportation containers, how to conduct and do the relative tests (Maintenance Division)  Reviewing the methods on organize, planning and prime circuit main circulation pumps repairs activities carrying out in order to reducing the time maintenance. (Maintenance Division)  Reviewing the modernizations had made on radial bearing- axis the main circulation pump of prime circuit. (Maintenance Division)  Familiar with the utilized manners and methods in order to remove probabilistic defects and main flange repairs of primary circuit main circulation pump  Reviewing the methods on organize the executive maintenance activities. To organize dispatcher, inner communications and interaction of Maintenance division with other departments of the Plant and the ways and decisions made towards reducing the discontinuance during the activities is going to carried out in period of Plant Maintenance (Maintenance Division)  Transferring experiences in commissioning area after maintenance and the ways of reducing the period of Plant commissioning (reducing the commissioning and decommissioning times tests) .(Production Division)  Transferring experiences regarding how to organize the activities on the production of BNPP unit1. (Production Division)  Familiar with types of steam generator hydraulic wrench. How to work with it, advantages of it and information transferring and experiences regarding the manner of production and maintenance of it. (Maintenance Division)  Reviewing how to test steam generator impulse safety valves. Consist of test requirements, time of test, how to test, safety preparations on aforementioned tests  Visiting how to be done Performance test, setting, inspection and turbine round protection unit technical service. (Maintenance Division)  Familiar with the steam generator blocking tools during ADKARNET tests of steam generator and also changing fuel. (Maintenance Division)  Familiar with policies have made Nets in TIANWAN regarding mechanic equipment and how to be chosen every strategic for specific type of equipment. (Maintenance Division)  Familiar with how to organize the activities on open equipment and how to compliance with FME requirements in the aforementioned Plant and getting new experiences. (Maintenance Division)  Discussion on how to be met BNPP needs and spare parts and how to be supplied them and how to be estimated BNPP`s inventory and critical status  Reviewing Maintenance documents status in TIANWAN and getting experiences from the Plant regarding the methods of documents problems needs to be addressed. Consist of familiar with Maintenance technologic document, Maintenance quality control documents, random documents developed and compilation through Plant associated with related requirement and maintenance, content and how to be updated such documents. (Maintenance Division)  Visiting and observing the revolve equipment maintenance workshop of under control region and familiar with the equipment and tools and pump repair stands of circulation main primary circuit. (Maintenance Division)  Transferring experiences on operational documents translation and how to be confirmed them and how to be used them in control room in operational early years. (Production Division)  Methods on changing the Plant main document including Operational technical regulations  Reviewing existed equipment and facilities in order to be repaired series defects on valves and shell equipment that couldn’t be repaired by lapping and needs other methods such as boiling and thermal operational  Visiting tested and controlled performances and hydraulic bumpers function and the methods to be done on probabilistic maintenance on such equipment. (Maintenance Division)  Methods on planning and production interaction and maintenance to remove equipment for repair. (Production Division)  Methods on involving the old units personnel in new units activities  Methods on training and getting control room license consist of training methods, duration of training, OJT in work places, improvement in main control room and how to obtain a license for promotion of a control engineer to shift supervisor job. (Production Division)  NET strategies consist of reviewing the preventative net strategies, predictive NET, reliable based-NET and also based-NET to review the status of TIANWAN Plant, requirements on needs and administrative structure of aforementioned strategies and also the methods on transferring and to integral the data in these areas. (NET planning and organizing management)  Mechanism NET systems consist of implemented status and using NET mechanize system, type of Software, applicable modules. (NET planning and organizing management)  NET planning consist of methods on critical line planning and repair the equipment, current planning at the time of unit working, weekly and daily planning, control project in shutdown time, updating programs, mechanism and the methods on updating programs based on problems raise in shutdown unit, action have done towards reducing and optimizing of Shutdown time. (NET planning and organizing management)  NET organizing consist of dispatcher and organizing and meeting planning, organizing before and during and after shutdown, mechanism and how to make decision at the time of problems raised in time of unit shutdown, actions have done in order to reducing and optimizing at the time of Shutdown, technical surveillance, spare parts and materials management, contractors, traffic, accommodation and control. (NET planning and organizing management)  NET activities volume consist of Total number of repaired items at the time of Shutdown and unit working, planning and organizing the tasks at the time of Shutdown and unit working, used strategies for NET. (NET planning and organizing management)  NET managers consist of the amount and manner of outsourcing, quantity and mechanical repaired teams structure type, electricity and control and manner of interaction between them, the methods on what to do at the time of Shutdown in terms of the number of work shifts, number of foreign consultants and manufactures representatives. (NET planning and organizing management)  Fuel changing- reviewing and comparison of fuel changing machine practical parameters consist of fuel machine acceleration, the time for transportation of fuel complexes in the wells of reactor, the time for testing the spent fuels sealing, responsible for fuel changing (chines or contractor), number of Staff and work shift, modernizations have done on change machine, reviewing the status of maintain and operation of machine and times of fuel change machine defected in stopping before and gained experiences in this regard  Technical inspection and metal control and boiling point- consist of Reactor inspections times, prime circuit valves and equipment, inspection officer with automatic machines, type of thermal insulation used, period of Inspection and controls time, coordinate and planning on Inspections and controls affairs with other activities, number of Staff and working shifts and status of such activities during the year. (NET planning and organizing management)  Main equipment and safe channels- including review the cycle of the prime and second circuits main equipment repairing, equipment or reserved using places at time of Shut down for substitution, to review the status of type and repairing methods, layout plan of main buildings at the time of repairing the equipment, reviewing the status of polluted equipment maintenance workshop in outside and inside of controlled areas, the methods of moving fuel pool water and prime circle, numbers of safe and equipment channels, period of channels test, requirements on removing the channels at the time of working unit, planning on repairing the safe channels at the time of working unit or shutdown . (NET planning and organizing management) | |
| Expected outcomes – what is needed: | Benchmarking or patterns, one of the different technical support and an effective way regarding to learn experienced new techniques of other plant in confronting with technical and job various issues. According China`s TIANWAN Plant is one of the progressive in operation and reducing the duration of maintenance time and also many similarities of China`s TIANWAN Plant power production industry compared with Iranian Nuclear Power Plant (Russian Plants, Training Personnel in Russian and …), undoubtedly the most of the issues and problems that Bushehr Power Plant face with these days, China`s TIANWAN Plant had the all in past, so utilizing the experiences of China`s TIANWAN Plant technology could be helpful and useful for Bushehr Nuclear Power Plant Personnel. The below areas could be considered as the objectives of the Visit. | |
| Expected number of attendees (people attending the mission): | 15 persons (maintenance division including mechanic manager, project control and planning manager, fuel changing machine and reactor group chief, under control region areas equipment group chief, static equipment manager), Production Division (Plant shift chief, reactor operational deputy, turbine operational deputy, process chief engineer manager, I/C production deputy ), NET organizing and planning management (NET organizing and planning manager, planning chief, organizing group chief, planning expert, planning current expert) | |
| Level of the audience (specify the technical background and the professional experience of the attendees) | Related Expertise and experienced experts in Maintenance, Planning and control, Production and NET areas | |
| **EXPERT MATTERS** | | |
| Number of Expert/s expected: | - | |
| Field of Expertise: | Maintenance, Planning and control, Production and NET areas | |
| Duties: | Enterprise methods and manners of maintenance, planning and control projects, production and NET in details and to transfer and share their experiences in the aforementioned materials | |
| Qualification of expert: | Related specialist or experts | |
| Acceptable working language of expert: | English | |
| **If specific expert is suggested, please indicate the name and address. This does not mean that the expert will be automatically considered for the mission**. | | |
| Name:  Telephone:  E-mail and Address: | |  |