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CASE STUDIES

PRESENTATION OF STUDIES

TRIESTE SCHOOL OF NUCLEAR ENERGY 2011

No	Project title and summary	Supervisor/Team
Background. POWERIA is a country in ASIAFRA continent of about 475.000 Km^2 importing most of the oil and natural gas used for electricity production. The actual electric installed capacity is 6,000 Mwe, covering about 35% of the population. Actually, 85% of the electricity is produced using thermal (gas, oil and coal) means, 13% through hydro and geothermal, and the 2% remaining from renewable (solar and wind). The country is experiencing rapid growth in domestic energy demand, prompting the government to consider diversifying the State's energy sources in order to reduce dependency on fossil fuels. On the other hand, the country is experiencing a low industrialization due to the price of the electricity as the industrial field including the tourism industry that uses mostly their own power generators, thus increasing the cost of electricity and prices. High and low projections that were made, 10 years ago, show the need of about 17/13 GWe installed capacity by 2015, to cover the need of electricity for projected 1% increased GDP during the period. POWERIA is now expecting 2% increase, following the latest assessment and Government plans.		
1	**Establishing the National Implementing Organization for Nuclear Power Introduction** **Your task.** Your Team constitutes the NPA and you are requested, based on the scenario described including organizations described in Section 3, to initiate relevant action that would lead to build without any delay, the first NPP of POWERIA. The outcome of your work is to help the Government to be ready to undertake the significant work necessary to build the Nuclear Power Infrastructure aimed at actively prepare for ordering the country's first Nuclear Power Plant. Taken that into consideration, address the following points: (1) Identify the critical tasks to be conducted by the NPA in phases 1; (2) Is the objective of the President could be achieved on time as decided? (3) Is the Decision of the President is a "knowledgeable Decision"? If yes, justify the decision and when (which year) was taken the decision? If not, propose the main actions / activities to be implemented before a knowledgeable decision is taken? (4) Identify the main stakeholders that should constitute the NPA in the initial phase (5) Propose NPS's Organization and justify whether the NPA has the appropriate participants, or whether it needs to be adjusted during the programme implementation. (6) It is also required that the NPA identify critical workforce and competencies required for the Programme; (7) Propose an outline for a Roadmap or Action Plan for nuclear power introduction with the different aspects to be considered and the plan for building the two NPPs, including a timeline. (8) Identify potential challenging issues and risk that could hamper the smooth implementation of the Programme	**V. Nkong-Njock**

2	**Developing the new Project Team Responsible to first Nuclear Power Plant.** In January 2009 a decision was taken by the Government to move forward with the nuclear power programme and in a nuclear law was promulgated expanding the functions of the Nuclear Regulatory Authority (NRA) that was previously limited to the control of radiation sources for ensuring in addition to radiation protection, all activities related to nuclear safety, security and safeguard. At a first step the Government of POWERIA, following the suggestions provided by NPA, decided to build 2 units of 1000 MWe in an open bid process. This responsibility was given to GEN-ELEC, the national electrical company that already operating several power plants with an installed capacity of about 6,000 MWe. **Your task.** Your team constitutes GEN-ELEC and you are requested, based on the scenario (to be provided), to start developing the new NP Project Team responsible to first Nuclear Power Plant. Please describe the major points to be considered. (1) Identify the critical tasks to be held by the Utility Company (Owner - Operator in phases 2 and 3; (2) Identify the type of contractual approach that needs to be adopted by GEN-ELEC as well as the possible contracting structures. (3) Identify key advantages and challenges of possible contracting structures. (4) Identify special project risks that are unique to nuclear power plant developments. (5) Propose an organization and staffing that will be established with the aim to ensure the construction, commissioning and safely operation of nuclear power plants from 2020. (6) Identify critical competencies required in each Department of the Owner-Operator and when they need to be available; (7) At what point in the development of a nuclear power programme can the procurement be commenced. (8) "Fast-tracking" and the "paradigm shift" to focus on procurement – impact? (9) Evaluation of Plant Performance for Selected Technologies	**V. Nkong Njock**