

The IAEA Technical Meeting/Workshop
on Milestones for Nuclear Power Infrastructure Development

**DEVELOPMENT OF THE NATIONAL
INFRASTRUCTURE
FOR NUCLEAR POWER IN VIETNAM**

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I. INTRODUCTION OF THE NUCLEAR POWER PROGRAM OF VIETNAM (1)

- # Establishment of the national steering committee for development of nuclear power in Vietnam on 5 March 2002 as the Nuclear Energy Programme Implementing Organization (NEPIO) of Vietnam in order to conduct all preparation works for the national infrastructure related to development of nuclear power in Vietnam.
- # Establishment of an independent regulatory body so called the Agency for Radiation Protection and Nuclear Safety Control (VARANSAC) on 19 May 2003.

I. INTRODUCTION OF THE NUCLEAR POWER PROGRAM OF VIETNAM (2)

- ✦ On 3rd January 2006, the Prime Minister approved the Long-term Strategy for Peaceful Utilization of Atomic Energy up to 2020, emphasizing the important goals for building the first nuclear power plant (NPP) in Vietnam and putting it into safe and effective operation and exploitation, and establishing the sound infrastructures for the long-term national program for nuclear power development.

I. INTRODUCTION OF THE NUCLEAR POWER PROGRAM OF VIETNAM (3)

- # On 23 July 2007, the Prime Minister approved the Master Plan for Implementation of the Long-term Strategy.
- # Also in 2007, the Pre-FS for the 1st NPP in Vietnam and the VI Electricity Development Plan up to 2025 have been approved by the Government, showing the planned nuclear power will reach to 8,000 MW in 2025.
- # The Draft of Atomic Energy Law is being considered by the National Assembly.

I. INTRODUCTION OF THE NUCLEAR POWER PROGRAM OF VIETNAM (4)

All issues related to energy planning, nuclear power technologies, nuclear safety, fuel supply and domestic uranium resources, radwaste and spent fuel management, nuclear human resource development, domestic industrial participation, national and international legal framework, etc. have been investigated according to the direction of the National Steering Committee.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (1)

- # **Nuclear legal framework:** In the process of development and update
- # **Nuclear regulatory body:** Established with about 40 staffs, but experienced experts are limited.
- # **Technical support organizations:** The nuclear safety center, the NDE center, Radiation protection and Environmental Radioactivity Monitoring center, the center for standardization and calibration in radiation and nuclear fields have been established, but still limited in human resources and technical capabilities.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (2)

- # **Human resources development:** some policies, programmes and activities on training and education have been done, but the national action plan for nuclear human resources development is not yet approved by the Government.
- # **Nuclear R&D activities and institutions:** Many activities and researchers, but mainly in non-power applications.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (3)

- # **Nuclear fuel and domestic uranium resource:** In the process of investigation of policies for sustainable supply of nuclear fuel for nuclear power plants in Vietnam and for use of national uranium resources for the nuclear power program.
- # **Radwaste and spent fuel management:** Accumulation of experiences for more than 20 years of operation of the Dalat reactor, some researches on policy and technical aspects for radwaste and spent fuel management have been done.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (4)

- # **Site selections for NPPs and Radwaste Storage:** Some research projects have been done.
- # **National Industrial Participation:** One research project on evaluation of the national industrial capability for participation in the first nuclear power project and elaboration for development of national related industries has been done.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (5)

- # International cooperation: The technical cooperation with foreign partners has been promoted. Plan for participation in all related nuclear conventions has been studied.**
- # National action plan for nuclear emergency and preparedness: It has been prepared.**

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (6)

- # **Investment and financial arrangement:** It has been investigated in the Pre-FS study for the first NPP project.
- # **Public information:** Many activities including exhibitions, TV propaganda, newspapers, organization of visits to nuclear facilities,...

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (7)

General Evaluation:

- According to the guides of the IAEA Nuclear Energy Series No. NG-G-3.1 “Milestones in the Development of a National Infrastructure for Nuclear Power”, Vietnam has passed the milestone 1 in development of a national infrastructure for nuclear power and now in the stage to prepare for the milestone 2.

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (8)

- **The IAEA Nuclear Energy Series No. NG-G-3.1 “Milestones in the Development of a National Infrastructure for Nuclear Power” is useful for a country preparing for introduction of nuclear power. It gives a guideline on what a country has to develop a national infrastructure for nuclear power. However, the difficulty for a developing country is how to develop it.**

II. DEVELOPMENT STATUS OF THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (9)

- Besides, one of the most important thing in the infrastructure for a developing country is science and technology capability including establishment of national and private R&D institutes, institutes for standardization and calibration, higher educational institutes, professional training centres, scientific academies and professional associations, national industry has yet to take into account as one issue.

III. KEYS CONCERN ABOUT THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (1)

- # Legal and regulatory framework: Clearance of procedure for licensing of a nuclear power project from the beginning to the decommissioning in which responsibilities of related organizations have to be determined clearly.**

III. KEYS CONCERN ABOUT THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (2)

- # Enhance of capability of technical support organizations: How to review, evaluate a safety analysis report and make safety inspection of a nuclear power project in all stages including design, site selection, construction, operation, maintenance,... Even in the case of using international consultancies, how can we develop minimum capability of technical support organizations in order for us to make decision on safety issues based on the international consultancy.**

III. KEYS CONCERN ABOUT THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (3)

- # Enhance of national science and technology capability: How to make decision on the NPP technology selection for the first NPP in Vietnam? How to absorb and master the transferred technology? and How to help the national industry to master the transferred technology.**

III. KEYS CONCERN ABOUT THE NATIONAL INFRASTRUCTURE FOR NUCLEAR POWER IN VIETNAM (4)

- # Enhance of capability of the NPP owner:
How to make the utility technical criteria for the NPP? How to make the international bid for the NPP project? How to built up national capabilities on the project management? Procurement? Construction? Operation? Maintenance?**

IV. ASSISTANCES REQUIRED FROM THE IAEA

- # Expert services in development of legal and regulatory framework.**
- # Training staffs and provision of technical equipment for technical support organizations, nuclear R&D institutes and the NPP owner.**
- # Review the Feasibility Report of the first NPP project.**
- # Evaluation of the site selection.**

V. CONCLUSIONS

- # Vietnam Government has made a strong commitment on development of nuclear power with the important goals for building the first nuclear power plant in Vietnam and putting it into operation in the year of 2020.**

V. CONCLUSIONS

- # We have 13 years for preparation of all national infrastructure for nuclear power with milestone 2 and 3. It requests a big effort from national organizations and a wide international cooperation with the IAEA and advanced nuclear power countries.**

V. CONCLUSIONS

- # We highly appreciate the assistance from the IAEA so far to Vietnam and do hope to continue receiving the more assistances from the IAEA in preparation of a national infrastructure for nuclear power in Vietnam in years to come.**



Thank you for your attention!