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Workshop on Establishing a Nuclear Safety Infrastructure for a National Nuclear Power Programme

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Workforce Planning and HR Development

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One of important tasks – to develop, regularly update and implement a **Workforce Plan**
WORKFORCE PLANNING:

“The systematic identification and analysis of what an organization/nation is going to need in terms of the size, type, and quality of workforce to achieve its objectives.”

Identifies the steps that should be taken to get the right number of the right people in the right place at the right time.
Human Resources
Organizations requiring consideration of Human Resources

- Nuclear facilities (fuel cycle, radwaste)
- Government agencies (Ministries, etc.)
- NEPIO, Owners, Operating Organizations, Corporations (e.g. Headquarters)
- Technical Support organizations
- Regulators (including nuclear)
- Educational institutions
- R&D organizations
- Specialized training organizations
- Organizations involved in nuclear or rad activities (e.g. transport, security, org using sources of ionizing radiation)
- International and professional organizations
- Equipment Vendors, Suppliers, Construction

Human Resources for the Nuclear Field
Define the Objectives of the national Nuclear Power programme

Determine the HR needs of the programme based on these Objectives

Compare HR needs to existing and expected national HR resources (Gap Analysis)

Can Gaps be addressed?

If No, determine how gaps will be addressed

If Yes, develop workforce plan

Review/Revise workforce plan as phases progress

Workforce Planning Process
The Objectives of the Nuclear Energy programme need to be clearly defined as this can greatly influence the competencies to be acquired by the Member State.

For effective Workforce Planning, the roles, responsibilities and functions of all the stakeholder organizations to be involved need to be clearly defined in Phase 1, even if such organisations are not yet fully established.

Member States must be realistic about the gaps in national capability and the potential to close these gaps within the timescales of the project.

As part of the WP process, the strategy for closing these gaps must be clearly defined and understood as it may have a significant impact on the Bid Invitation Specification (BIS).
During Phase 1, NEPIO undertaking:
- Feasibility studies and developing understanding of commitments associated with Nuclear Power.
- Analysis of national capability.
- Development of 1st Workforce Plan.

(NEPIO 25 – 50 personnel, depending on expert support.)
Core regulatory functions also established at this time for the development of regulations, for licensing, review and assessment, inspection, enforcement and public information.
RECRUITMENT CHALLENGES IN PHASE 1

Lack of experience in phase 1 may be alleviated by:

✓ Contracting out whole work packages to experienced consultants, including requirements to utilise/train national staff in delivering the work package.

✓ Contracting with consultants to become ‘temporary’ staff working with nationals to deliver work packages, while developing national staff.

✓ Engaging senior consultants to ‘coach’ national staff in specific areas of competence.

✓ Organising national conferences/workshops where NPP Vendors, experienced Regulatory Bodies and specialist support organisations can present their capabilities and services.
RECRUITMENT CHALLENGES IN PHASE 1

Opportunities to gain experience outside MS include:

✓ Establishing Bi- and Multi-lateral relationships with governments, regulatory agencies, vendors, utilities, educational institutions, etc.

✓ IAEA Training courses, Fellowships and Internships.

✓ Formal courses of overseas study (e.g. vocational, under- and post-graduate programmes).

✓ Building staff training and development assignments into potential contracts with NPP Vendors, service providers, etc.

✓ Developing ‘strategic alliances’ with vendors/equipment suppliers whereby national organisations obtain licenses to manufacture components in-country, which can include training and qualification in the country of origin.
Resource Requirements for Phase 2

NEPIO resources peak during Phase 2, as responsibilities are handed over to Regulatory Body and NPP Owner/Operating Organisation.
Resource Requirements for Phase 2 (cont’d)

Regulatory Body resources build during Phase 2 to enable it to develop necessary regulations, licensing arrangements and carry out its oversight responsibilities.
Resource Requirements for Phase 2 (cont’d)

NPP Owner / Operating Organisation commences staffing during Phase 2 due to training ‘lead times’ prior to commissioning.
Resource Requirements for Phase 3

1. NEPIO = 10 --> 50 (Depending on Expert Group Support) --> 0 (close to)

- **Phase 1**
  - Site Investigation, Bid Preparations

- **Phase 2**
  - 

- **Phase 3**
  - Design, Construct, Comm'n

**Years (Indicative only)**

**No. of people**

1 Unit

Multi Units
Resource Requirements for Phase 3 (cont’d)

1. NEPIO = 10 --> 50 (Depending on Expert Group Support) --> 0 (close to)
2. REG BODY = 50 --> 150+Tech Support

No. of people

Years (Indicative only)

MS1

Site Investigation, Bid Preparations

MS2

Phase 3

Design, Construct, Comm'n

MS3

Multi Units

NEPIO

REG BODY
Resource Requirements for Phase 3 (cont’d)

1. NEPIO = 10 --> 50 (Depending on Expert Group Support)
2. REG BODY = 40 --> 150+Tech Support
3. OP ORG = 0 --> 20 to 30 --> 600 to 1200

- NEPIO
- REG BODY
- OP ORG

Years (Indicative only)

No. of people

MS1

<Phase 1-->

Site Investigation, Bid Preparations

MS2

Phase 3
Design, Construct, Comm'n

MS3

<Op Training-->
2-3 yrs

Commissioning

Multi Units

1
Example Distribution of Disciplines for the Nuclear Workforce

Source: Lee Peddicord
TAMU, USA
Thank you!

...atoms for peace.