Workforce Planning and Human Resource Development

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KEY CHALLENGE FOR HUMAN RESOURCES

• Key challenge is to achieve initial competence, and then sustainability, of Human Resources to support a nuclear power programme

• Requires the coordination, and cooperation, of all national stakeholders (government, education sector, industry, international bodies)
There are three main steps to achieving sustainable competence in Human Resources for any programme:

1. Developing the necessary Human Resources Infrastructure (including Workforce Planning)
2. Building Capacity
3. Developing and sustaining competence

For newcomer countries, IAEA support is mainly focused on steps 1 & 2 and for operating countries the focus is in step 3.
1. HUMAN RESOURCES INFRASTRUCTURE

The first step is to develop workforce plan to estimate the needs of a national nuclear power programme, and therefore understand what infrastructure is required.

The necessary HR Infrastructure for a nuclear power programme includes:

- Secondary (and primary) education system with strong maths and sciences components, to prepare for, and stimulate interest in, Engineering careers
- Technical/Vocational schools to create good skilled artisans/technicians in different engineering and technical disciplines
- University programmes for (nuclear) Science and Engineering professional staff (and allied professions e.g. Chemistry, Business, Finance, Human Resources, etc.)
- Creating ‘Outreach’ programmes to engage students in nuclear programmes and stimulate career interest.
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Preparing for assuming commitments & obligations

Infrastructure development program

1st. NPP Project

Commissioning

Operation / decommissioning

Nuclear power option included within the national energy strategy

MILESTONE 1
Ready to make a knowledgeable commitment to a nuclear programme

MILESTONE 2
Ready to invite bids for the first NPP

MILESTONE 3
Ready to commission and operate the first NPP

HR Planning & Implementation

PHASE 1
Considerations before a decision to launch a nuclear power programme is taken

PHASE 2
Preparatory work for the construction of a NPP after a policy decision has been taken

PHASE 3
Activities to implement a first NPP

National Strategy

MILESTONE 1
Ready to make a knowledgeable commitment to a nuclear programme

MILESTONE 2
Ready to invite bids for the first NPP

MILESTONE 3
Ready to commission and operate the first NPP

Pre project

Project decision making

Construction

~ 10 – 15 years

Maintenance and continuous infrastructure improvement

Preparatory work for the construction of a NPP after a policy decision has been taken

Activities to implement a first NPP

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BRM/GNSSN/WP-HR 11/09/2015
IAEA Support for Step 1

- IAEA provides direct workforce planning support through guidance documents, expert missions and review services.
- Also rolling out the Nuclear Power Human Resource (NPHR) modelling tool, to help MS understand the components of a nuclear workforce.
IAEA Support for Step 1 (cont’d)

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• Also rolling out the Nuclear Power Human Resource (NPHR) modelling tool, to help MS understand the components of a nuclear workforce.

• Through a Regional TC programme, we are piloting new science curricula activities in a number of newcomer countries.

• Through various national TC projects, we are supporting MS in developing university nuclear curricula, using expert missions and experienced lecturer exchange programmes.

• NKM Section provides expert missions and review services to evaluate existing programmes, as well as providing guidance on curricula development, and the new Nuclear Management Masters programme (INMA – International Nuclear Management Academy).
2. CAPACITY BUILDING

Education & Training
Human Resource Development
Knowledge Management
Knowledge Networks
IAEA Support for Step 2

• General Capacity Building through Fellowships and Scientific visits

• Development of tailored programmes to meet individual Member States needs

• New E-learning Series based on the Milestones approach with 12 downloadable modules already available and 4 more in development.

• Various training programmes from Executive Leadership with MIT, through Senior Management with Argonne national Laboratory (US) and France, and programmes with Korea, China and others

http://www.iaea.org/NuclearPower/Infrastructure/elearning/index.html
This picture will have to be adjusted to accommodate Nuclear Security information added to the next slide.

LAMBERT, David, 2013-10-18
3. BUILDING & SUSTAINING COMPETENCE

Capacity Building – National Environment

National Capability/Needs

Workforce Planning

Recruitment

Training & Development

Remuneration

Performance Management

Succession Planning

Career Management

Retirement

National/International Education & Training Capability/Requirements

Organisational Internal

Human Resource and Knowledge Management
IAEA Support for Step 3

Main guidance contained in IAEA NE Series Document “Managing Human Resources in the Field of Nuclear Energy” (NG-G-2.1)
IAEA Support for Step 3 (cont’d)

- IAEA receives guidance from Biennial Technical Working Group on Managing Human Resources (TWG-MHR) ~ 20 MS participate.
- Develops various guidance and technical documents.
- Conduct topical Technical Meetings/Conferences to exchange experience and good practices (joint with NS/other departments as appropriate.)
- Review services – Human Resources components in INIR (Integrated Nuclear Infrastructure Review) missions for newcomer countries and SALTO (Safety Aspects of Long Term Operation) missions for operating countries.
- Ad-hoc support/review missions on request of member states, based on specified needs (e.g. SAT – systematic approach to training.)
IAEA provides a variety of tools and services to support human resource development, many provided through Technical Cooperation projects.

Support is based on IAEA guidance documents but can be tailored to MS needs.

A variety of training programmes are offered for different levels, focusing on Leadership and effective management (not technology subjects, which should be vendor specific).
THANK YOU..... ANY QUESTIONS?

...atoms for peace.

http://www.iaea.org/NuclearPower/Infrastructure/elearning/index.html