Lessons Learned in Performing and Implementing the Results of TNA in a Newly Developed Regulatory Body with a Mandate to Regulate the Country's Expanding Nuclear Power Programme: A Case Study of PNRA #97

Moazzam Shahzad
Pakistan Nuclear Regulatory Authority
Pakistan
Presentation Layout

- Introduction
- Strategic Approach of PNRA
- Lesson Learned concerning TNA
- Conclusion
Introduction

- A country desiring to embark on a nuclear power programme entails its commitment to the peaceful use of nuclear technology with availability of sufficient qualified and experienced manpower

- One major requirement to ensure nuclear safety is the establishment of a national legal and regulatory framework with a competent and independent regulatory body to oversee the implementation of this framework
Pakistan's journey towards development of nuclear safety infrastructure began with the creation of Pakistan Nuclear Safety Committee (PNSC) in 1965. After passing through different evolutionary phases, the GoP established Pakistan Nuclear Regulatory Authority (PNRA) in 2001 as an independent regulatory body.
Introduction

- In accomplishment of its vision to become a world class regulatory body, PNRA focused all its resources on enhancing its capacity and technical capabilities.
- To strengthen professional capabilities of its staff, in-house professional trainings, courses in local training institutes, foreign regulatory bodies and technical organizations are organized on routine basis.
Introduction

- In 2004 PNRA launched a project to conduct Training Need Assessment (TNA) which included organizational review, assessment of training needs, determining competency gaps and development of training strategies.
- Assessment consisted of interviews of the senior management and review of documents of PNRA, IAEA and regulatory bodies of other countries.
- IAEA four-quadrant competency model given in TECDOC-1254 for nuclear regulatory bodies was applied for the gap analysis.
Areas of Improvement

- Establishment of a training centre for in-house professional trainings
- Development of trainers and resource personnel to conduct trainings
- Collaboration with other international organizations for inter-organizational placement
- Establishment of a technical and research support centre
- Need to increase public awareness and develop a positive image of PNRA
- Establishment of a legal department
Establishment of Training Centre

- Development of national training centre implies local currency expenditures which normally have to be financed by local sources.
- The GoP approved a project for establishment of a training centre in PNRA.
- This centre was named as National Institute of Safety and Security (NISAS) which imparts trainings, refresher courses as well as arranges trainings for stakeholders who have a role in maintaining nuclear safety and security in the country.
For faculty development of NISAS, PNRA ensures participation of its resource personnel in international workshops and fellowship programs in specialized fields, provides on-the-job training, and scientific visits to enhance their technical competencies.

PNRA also awards fellowships to deserving candidates for Masters in Nuclear Engineering, Nuclear Power Engineering, System Engineering and Medical Physics.

NISAS faculty has gained enough teaching experience over the years, and is now capable of imparting knowledge at the international level.
PNRA acknowledges the importance of bilateral and multilateral cooperation and understands their significance in the enhancement of regulatory effectiveness and human resource development.

PNRA has bilateral agreements with National Nuclear safety Administration (NNSA) of China and its allied institutes and technical support centres.
Establishment of TSO

- PNRA has developed a Centre for Nuclear Safety as Technical Support Organization (TSO) which comprises of fifty-five (55) professionals in various technical disciplines.

- TSO is assisting PNRA technical directorates in the review and assessment of submittals from the licensees of nuclear power plants and research reactors.

- TSO also regularly provides technical input during review of design modifications and inspection findings.
Public Awareness Programme

- PNRA has initiated efforts with the perspective of public involvement in the regulatory decision making process.

- In this regard, various activities are being accomplished which mainly includes public education towards safety aspects of nuclear installations and radiation facilities and the role of PNRA.

- Lectures, seminars and workshops are being organized at the licensee’s premises and educational institutions to educate the radiation workers and general public.
Establishment of Legal Cell

- A legal cell has been established in PNRA under DG (Inspection and Enforcement) to fill the competency gap in this area.

- This cell looks after legal matters related to nuclear and radiation safety.
To assess the effectiveness of the measures taken by PNRA and reorganization of regulatory body in last few years, organizational review as well as TNA was performed again in 2011.

This time, TNA was performed on the basis of SARCoN guidelines (Rev.14).
Lesson Learned concerning TNA

➢ Top Management Commitment

- Senior management commitment is essential to help get started with a TNA
- PNRA top management reflected its commitment by providing the necessary resources for conducting TNA activity.
- On the basis of TNA result, different strategies were developed and necessary actions were taken to fill the gaps for competency development
Lesson Learned concerning TNA

➢ Top Management Commitment

• Senior management commitment is essential to help get started with a TNA
• PNRA top management reflected its commitment by providing the necessary resources for conducting TNA activity.
• On the basis of TNA result, different strategies were developed and necessary actions were taken to fill the gaps for competency development
Lesson Learned concerning TNA

- SARCoN must be Tailored before Use

  - SARCoN guidelines provide a systematic approach and step-wise procedure for identifying potential training needs of regulatory bodies through gap analysis

  - However, different regulatory bodies have different regulatory cultural and national approaches

  - SARCoN must be tailored and adapted to the particular situation of the regulatory body
Conclusion

- It is essential that regulatory bodies apply a systematic approach to training need assessment.
- Education and training requires capital investment, time and effort; it must be planned long in advance to be effective.
- It is essential for a country considering a nuclear power programme to establish and implement a corresponding manpower development programme for its regulatory body.
Thank You