WS on competence frameworks for research reactor regulation
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Development of Education and Training Strategies

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STRATEGIES FOR ACQUIRING COMPETENCE

- Training
- Recruitment
- Outsource
CONTENTS

• Training of the RB staff
• Systematic Approach to Training (SAT)
• Need of continuing training programmes
• Training Administration
• Steps in implementation of Training programme
• Training courses
• All the successful Organizations in the world considers their employees as the most valuable asset

• Building employee’s skills and knowledge is an investment in each employee and in the future of the organization

Overall training programs for regulatory body personnel will inevitably be considerably different from operator training program since the roles of regulatory staff and operating staff are quite different. Although some elements of training programmes for regulatory body personnel may be similar to some elements of operator training programmes
TRAINING OF THE RB STAFF

• To ensure proper competence, RB shall ensure that its staff participate in well defined training programmes.

• To fulfil the requirements, RB should have:

  - A training policy;
  - Budgetary provisions for training;
TRAINING OF THE RB STAFF

- Formal training programme in light of RB needs and designated personnel responsible for the design, operation and evaluation of the programme;

- Individual Training Plan

- Procedure for periodic review and updating of training programme

- For an effective and systematic approach to training, the regulatory body needs to consider the establishment of a training unit,
Analysis

- Competencies required to perform particular jobs/tasks and the training needs to achieve these competencies are identified
- Output of this phase is learning points that identify what a learner must know

Design

- Training needs and learning points related to specific competencies are converted to learning objectives, including evaluation strategies
- An annual training program for the regulatory body can be developed by the management
Development

- Training materials and evaluation tools are prepared so that the achievement of training objectives can be confirmed.
- Work performed in this phase as well as in the design phase ensures that the intended training is both appropriate and adequate.

Implementation

- Training is conducted in a specific training environment using the training materials that were created in the development phase.
All aspects of the training program are continuously evaluated on the basis of data collected during each of the other phases. It is followed by suitable feedback leading to training possible program improvements.
TRAINING NEEDS

• Sufficient time should be devoted for defining RB training requirements and establishment of an effective training programme

• RB training programme should be combination of:

  - Self study
  - Formal training courses (Class Room, E-Learning)
  - Workshops and seminars (By RB, Academic or professional organizations, RB’s of other countries or IAEA)
TRAINING NEEDS

• Orientation Training Program for newly inducted staff
• Introduction of law, legal power, policies, internal guidance and procedures of the RB
• Specific training plan for each staff member to cover, general design criteria and design and operational characteristics of Nuclear Facilities. *(Appendix-I)*
• Periodic Retraining
• Refresher Training Programmes
• RB identify positions that require formal job training prior to working on tasks:

- Staff dealing with the Inspection of Nuclear Facilities;
- Staff dealing with the Review and Assessment of Nuclear Facilities;
- Nuclear engineers;
- Staff dealing with the emergency of Nuclear Facilities; etc.

Examples of Training programmes for these positions are given at (Appendix-II)
• Continuing training programmes to maintain the competence of RB staff for jobs that they may perform infrequently.

• Continuing training programme for following reasons:
  - The task is performed infrequently on the job, and thus proficiency may not be maintained;
  - The task is critical to the organization’s mission and/or is difficult to perform, thus periodic practice should be provided.
Providing Continuing Training Programmes

- Continuing training programmes are to provide operating experience.

- Continuing training programmes are also important for professional staff as a tool to keep them up to date regarding new techniques in their professions.
ADMINISTRATION OF TRAINING

- Formal responsibility for training in RB
- Training unit at RB
- Responsibility of senior managers that they should consider for sustaining effective training programmes
Specific factors that enhance management ownership and control of training include:

- A written training policy document

- Managers need to ‘own’ the training programmes for their personnel

- Managers should review SAT analysis phase data and all training materials during the SAT design and development phases, and provide written comments on the materials.

- Managers should provide on the job training and assessment of employee competence to perform tasks
ADMINISTRATION OF TRAINING (CONTINUED)

- Manager held responsible for adequacy of training and performance of their personnel;

- Managers should demonstrate that both initial and continuing training are satisfying the performance requirements;

- Managers should support the use of peer reviews and self-assessment;

- Managers should be responsible for identifying the necessary training requirements to support improving performance;
- Training unit personnel should meet with managers, at least annually;

- Senior Managers should periodically observe classroom and practical training;

- Training manager should meet regularly with the top management of RB;

- Managers should establish mechanisms for independent review of the quality training programmes.
ADMINISTRATION OF TRAINING

- Regarding HR, the individuals who provide instruction are particularly important; those who provide full time classroom training, as well as part time instructors, including those who conduct and assess on the job training, and those who act as mentors/coaches.

- Instructors should possess appropriate competence in performance evaluation and improvement.

- Feedback should be objective and timely.

- Rotation of personnel between the different section of RB and the training organization/department is an effective means of maintaining competence of the training staff.
EFFECTIVE IMPLEMENTATION OF TRAINING

- Efficiency, effectiveness and impact of the training also depend on the availability of a suitable training environment.
- Can be achieved by releasing the trainees from all job duties while in training and by selecting a suitable time for the training sessions.

- Training after normal working hours, on weekends and during vacation periods is generally less efficient and effective than training during normal working hours.
- There must be sufficient light, adequate heating, cooling and ventilation facilities, and very little outside disturbances.
STEPS IN IMPLEMENTATION OF TRAINING

- Instructor preparation to conduct training
- Pretesting trainees
- Selecting Method of training
- Assessing trainee performance
METHODS OF TRAINING

- E-Learning
- On the Job Training
- Class room Based Training
- Structured self-study
CONCLUSION

• Managers should pay attention to the following considerations:
  - SAT based training is a powerful tool for achieving, maintaining and developing personnel competence;
  - However, training alone cannot ensure the required competence.

• Necessary education, work experience, performance evaluation and improvement, and other management initiatives also need to be implemented to achieve the required competence.
Basic knowledge of:

- Radiation and industrial safety;
- Relevant legislation;
- Principles of nuclear, radiation, waste and transport safety;
- Safety culture;
- Site characterization;
- Facility and system knowledge (design, operation and surveillance methods);
- Accident analysis;
Knowledge of regulatory policies and processes:

• Legislative aspects;
• Regulatory policy and its objectives;
• Regulations and use of regulatory guides;
• Authorization stages and procedures, including the purpose and content of supporting documentation;
• Internal guidance and procedures of the regulatory body;
• Methods of review and assessment;
• Inspection techniques;
• Enforcement procedures.
Professional Knowledge such as:

• Knowledge of regulatory control;
• Review and assessment skills;
• Inspection skills;
• Knowledge from job specific training;
• Knowledge from on the job training.
Communication and management skills such as skills in respect of:

- Effective writing;
- Interviewing;
- Negotiation;
- Leadership;
- Project management;
- Teamwork;
- Decision making;
- Computer use;
- Public information.
TRAINING COURSES DURING PHASE 2

- Training course on Nuclear Law
- IAEA Basic Professional Training Course
- Training course of development of regulations
- Workshop on Review and Assessment (Siting + Design of NPP)
- Workshop on Industrial Codes and Standards
- Workshop on Authorization of Nuclear Power Plant
- Training Course on Thermal Hydraulics
- Training Course of Nuclear Physics

Phased approach for understanding
TRAINING COURSES DURING PHASE 3

- Workshop on Inspection and Enforcement of Nuclear Power plant
- Workshop on Nuclear Power Plant Systems
- Training on NPP Simulator
- Training Course on Accident Analysis
- Training Course on PSA
- Training Course on Structural and Seismic Analysis
- Training Course on NDT and Pre/In-Service Inspection of NPP
- Training course on Quality Assurance
- Training course on Nuclear Knowledge Management
THANK YOU