

Developing and Implementing a Training Programme

IAEA-KINS Workshop on the Emergency Preparedness and Response to Nuclear and Radiological Emergencies

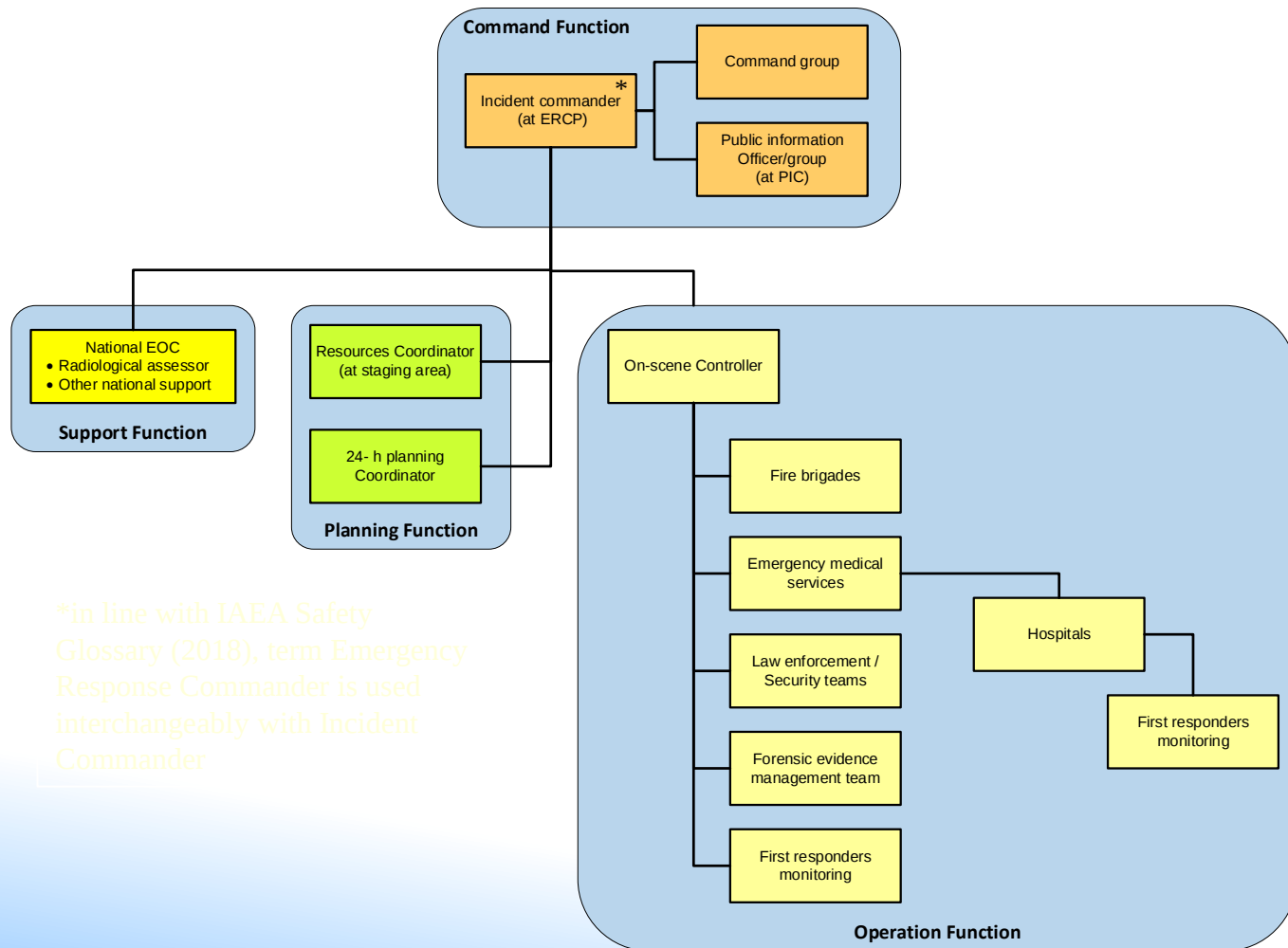
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Introduction

- Requirement 25: *“The government shall ensure that personnel relevant for emergency response shall take part in regular training, drills and exercises to ensure that they are able to perform their assigned response functions effectively in a nuclear or radiological emergency.”*
- Effective emergency response requires competent personnel to implement response plans and procedures
- Training is a key component in an emergency response program
- It is a goal of emergency preparedness to ensure a capability in place for training, drills and exercises

First step. Training Needs

- Identify the requirements of **knowledge**, **skills** and **abilities** for each position and team



First step. Training Needs (cont.)

- Process of defining what is to be learned
- Results in the identification of needs
 - Inputs:
 - General training needs identified
 - Emergency plan and procedures
 - Qualifications to be met by trainees
 - Outputs:
 - Clear competency statements for the trainees to develop
 - List of the specific training needs to be addressed by the course

First step. Training Needs (cont.)

- **Review** regulations, the emergency plan and procedures
- **Speak** with managers about organizations' roles
- **Identify** all personnel who need training
 - Think laterally (e.g. there are many first responders)
- **Gather** information about national objectives
- **Identify** tasks to be done and skills required
- **Check** job descriptions and technical manuals
- **Conduct** assessment of existing skills and knowledge gaps

First step. Training Needs (cont.)

- General tasks:
 - Prepare a list of training units/modules
 - Prepare a list of key positions of the overall response organization
 - Prepare a response organization function training matrix
 - Identify how deep each training module/unit should go for each response organization key position

TRAINING MODULES/UNITS	RESPONSE INITIATOR	FIRST RESPONDER	ON-SCENE CONTROLLER	EMERGENCY MANAGER	RAD. ASSESSOR	REFERRAL HOSPITAL
• U1.3. Basics on radiation protection		X	X	X	X	
• U1.4. Radiation sources	X	X	X	X	X	X
• U1.5. IAEA standards				X	X	
• U2.1. Past emergencies (accident scenarios)	X	X	X	X	X	X
• U2.2. Hazard assessment				X	X	
• U2.3. Planning basis				X	X	
• U3.1. Protection strategy and protective actions.				X	X	
• U3.2. Protection of the emergency workers		X	X	X	X	X
• U4.1. Generic criteria (OILs, EAL)		X		X	X	
• U4.2. Monitoring				X	X	X
• U4.3. Dose assessment					X	X
• U4.4. Roles of the radiological assessor				X	X	
• U5.1. Waste management				X	X	
• U5.2. Non-radiological consequences				X		X
• U5.3. Medical response						X
• U5.4. Termination of an emergency situation				X	X	
• U6.1. Infrastructural elements				X		
• U6.2. Identifying, notifying and activating	X	X	X	X	X	X
• U6.3. Concept of operations		X	X	X	X	X
• U6.4. Response integration and coordination				X		
• U6.5. Emergency analysis				X	X	
• U7.1. Providing warning and instructions				X		
• U7.2. Communicating with the public				X		
• U7.1. INES					X	
• U8.1. Planning	X	X	X	X	X	X
• U9.1. Drills and exercises	X	X	X	X	X	X
• U9.2. Training programs				X	X	
• U10.1. Emergency conventions				X	X	
• U10.2. Roles of international organizations				X	X	
• U10.3. RANET				X	X	

Example of a Competency Statement

- Medical staff in hospital in patient reception rooms shall be able to identify symptoms that indicate the possibility of a radiological emergency and initiate the appropriate response
 - Identification of symptoms of radiation exposure (KNOWLEDGE)
 - Awareness of typical scenarios of radiological emergency (KNOWLEDGE)
 - Procedures for activating response (ABILITY)
 - Initial treatment of patient (SKILL)

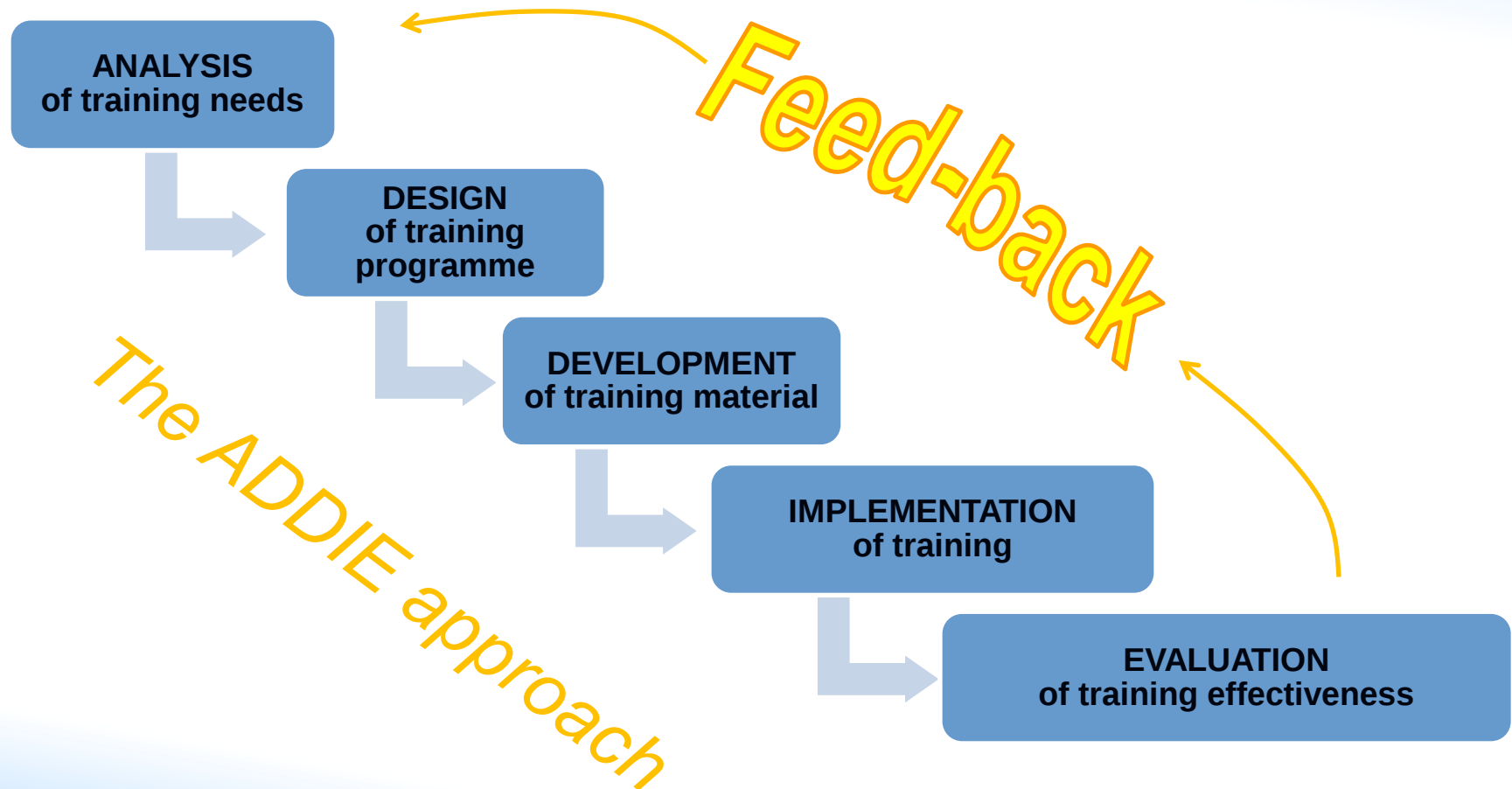
Other Considerations in Analysis

- Be **clear** about
 - Who needs the training
 - How many people need to be trained
 - What issue the training resolves
 - What people need to know versus what would be nice to know
 - By when should the training be complete
 - How large is the budget

Training Program Development

- How can you develop a radiological response training program which meets the requirements of the GSR Part 7?
 - Use existing training programs from other areas
 - Supplement an existing standard course
 - Develop your own training program - this will be our focus in this module

Overview of the Systematic Approach to Training (SAT)



Discussion



- Have you ever been involved in organizing training activities?
- Elaborate on your role and responsibilities
- Did you use a systematic approach?

Systematic Approach to Training (SAT)

- From
 - The identification of competencies needed to perform specific duties
- To
 - The development and implementation of training to achieve these competencies
 - Subsequent evaluation of this training

SAT Process, Phase 2 Design

- Process of specifying **how** the subject is to be learned
- Inputs:
 - Competencies
 - Specific training needs
- Outputs:
 - Training objectives
 - Training plan
 - Trainee assessment tools

SAT Process, Phase 2 Design (cont.)

- Training **methods**:
 - Classroom-based training
 - Distance learning
 - On-the-job training



SAT Process, Phase 2 Design (cont.)

- Instructional **techniques**:
 - Demonstrations
 - Practical work (trainee practice)
 - Case studies
 - Roundtable discussions
 - Lectures supported by media
 - Trainee-instructor interactions
 - Trainee-trainee interactions
 - Role-playing
 - Trainee assignments: individual projects, team projects
 - Problem solving or decision analysis exercises

SAT Process, Phase 3 Development



- Process of **authoring and producing** the materials
- Training plan from Phase 2 is developed into
 - Lecture/practical work outlines
 - Instructor material (reference items, textbooks)
 - Training material (handouts, references)

SAT Process, Phase 4 Implementation



- Process of **conducting the training** in a real world context
- Major considerations
 - Training administration
 - Facilities and equipment
 - Selection of participants
 - Selection of lecturers/trainers

SAT Process, Phase 4 Implementation (cont.)

- **Conducting** training:
 - Deliver clearly and concisely
 - Use practical examples
 - Maintain interest and attention
 - Involve trainees by encouraging discussion, performing activities or role-playing

SAT Process, Phase 4 Implementation (cont.)



- **Conducting** training:
 - Ask questions of trainees; Allow for interruptions and use non-tutorial manner of presentation
 - Recognize achievements
 - Encourage co-operation among individual trainees or groups of trainees
 - Prior to practical work explain purpose, appropriate procedures, good working practices, safety precautions, etc.

SAT Process, Phase 4 Implementation (cont.)

- **Documentation** and records:
 - Records of the training as implemented
 - Records of individual trainee performance
- **End** of training
 - Trainee assessment administered
 - Output: competent personnel

SAT Process, Phase 5 Evaluation

- Process of determining adequacy identifies:
 - Whether and where improvements are needed
 - Strengths and aspects of training that apply to improve
- Levels of evaluation
 - Reaction : What did the participants think of the training?
 - Understanding/learning: Did they learn what was designed to be learned?
 - Behaviour change: Did they apply the new skills or knowledge on the job?
 - Improved results: Did this application of the training on the job increase productivity or performance?

SAT Process. Feedback

- Applies to all SAT phases
- Provided to
 - Staff concerned
 - Course director
 - Instructors/demonstrators
- Purpose
 - To assist in improving performance
 - To assure the highest standards of the program delivered

Selection of Trainees

- Based on the knowledge, skills and abilities for each position minimal requirements are defined
- A clear relationship should be assured between the selection procedure itself and the job for which the individuals are being selected
- Suitable methods for collecting information of candidates should be chosen

Selection of Trainees (cont.)

- Three basic steps
 - Job analysis
 - Collecting information of candidates
 - Approval of appointment

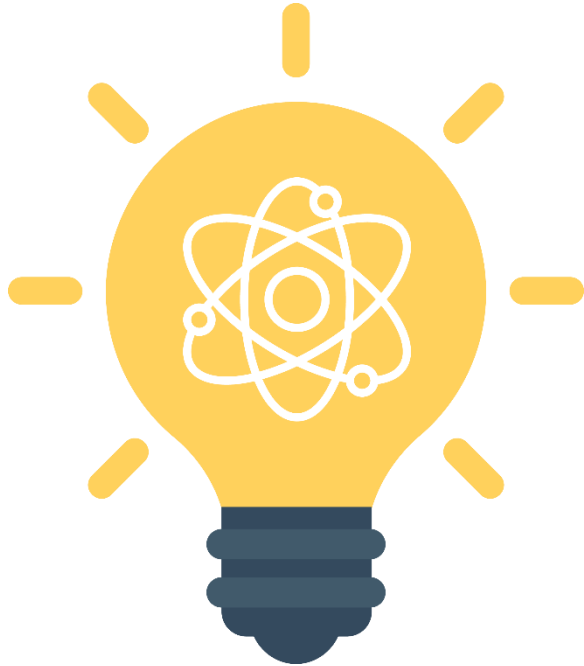
Selection of Trainees (cont.)

- Job analysis
 - Requirements
 - Duties and tasks
 - Environment
 - Tools and equipment
 - Relationships

Selection of Trainees (cont.)

- Methods for collecting information of candidates
 - Interviews
 - Personality tests
 - Biographical data
 - Cognitive ability tests
 - Physical ability tests
 - Work samples
 - Self assessments
 - Assessment centers

Key Points



- Personnel training is one of the most important components for an effective emergency response
- Systematic approach to training is an effective method to implement training programs for response organizations
- An effective personnel selection process should be in place

Where to Get More Information

- IAEA GSR Part 7 (2015)
- IAEA TECDOC-1170 (2000)

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Thank you!

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