



Human Performance Management **Personnel Training**

Annex A to REGDOC-2.2.2, *Personnel Training*

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DRAFT



Annex A – Additional Guidance for Using REGDOC-2.2.2 to Develop Radiation Safety Training Programs for Workers Involved in Licensed Activities with Nuclear Substances and Radiation Devices, and with Class II Nuclear Facilities and Prescribed Equipment

An effective radiation safety training program is essential to protecting health, safety, security and the environment, and is considered part of a comprehensive occupational health and safety program.

This annex provides additional guidance on the implementation of the requirements of REGDOC 2.2.2, *Personnel Training*. The high-level process diagram presented on the following page and the subsequent supporting descriptions provide guidance regarding how SAT-based processes and procedures could be applied for developing radiation safety training programs.

Licensees with relatively few worker categories performing relatively few or straightforward tasks may determine that a simplified training program is adequate to meet the need of their workers. The CNSC requires that each of the process steps be included to the appropriate degree in developing even the simplest radiation safety training program.

The topics to be covered by a training program, and the depth to which they should be addressed, will depend on the complexity of the licensed activity, the specific duties of workers, the radiological risk associated with those duties, and previous training and experience.

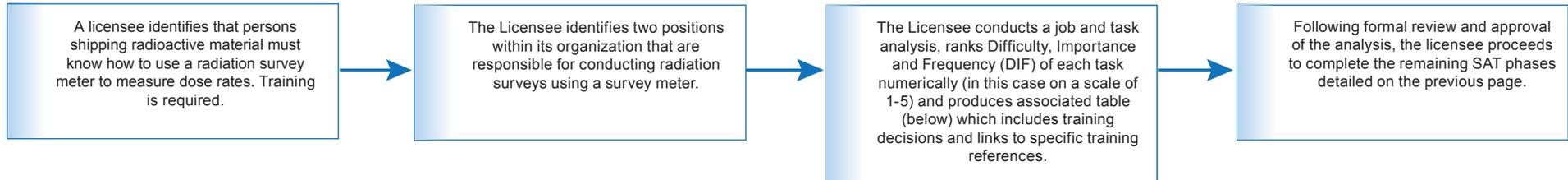
Simplified Process for Developing a Radiation Safety Training Program in Accordance with the Principles of REGDOC 2.2.2

<p>Step 1: Analysis Phase* (Section 5.1 of REGDOC 2.2.2)</p>	<p>Identify jobs with potential radiological risk. Is there a training need?</p>	<p>Define worker categories and worker characteristics involved with the identified jobs.</p>	<p>For each identified job, create a task list.</p>	<p>Identify the knowledge, skills and safety related attributes associated with each task.</p>	<p>Objectively determine how Difficult, the Importance to safety and how Frequent the tasks are performed. (DIF)</p>	<p>Based on DIF of each task, determine whether training will be initial or initial and continuing. If continuing training is deemed appropriate assign a frequency. (ex: every year)</p>	<p>Link each task to appropriate training references and define exactly, what, when and how the trainee should be able to perform the task at the conclusion of training. (Terminal Learning Objectives - TLOs)</p>
<p>Step 2: Design Phase (Section 5.2 of REGDOC 2.2.2)</p>	<p>Based on TLOs, organize training into discrete topics and ensure a logical sequence.</p>	<p>Determine appropriate training delivery method (classroom, on-the-job, computer based)</p>	<p>Define and document test items for assessment of workers.</p>	<p>Determine if testing/assessment will be written, practical or a combination.</p>			
<p>Step 3: Development Phase (Section 5.3 of REGDOC 2.2.2)</p>	<p>Create lesson plans for each topic. Review existing training material to determine suitability.</p>	<p>Create a training manual for trainees. (if applicable)</p>	<p>Create formal assessment material linked to TLOs/ exams. (written, oral or on-the-job)</p>	<p>Create a feedback form to be completed by workers once training is complete.</p>			
<p>Step 4: Implementation Phase (Section 5.4 of REGDOC 2.2.2)</p>	<p>Assign an appropriate instructor(s) for all topics.</p>	<p>Deliver training according to lesson plans. Continually assess to ensure learning is taking place.</p>	<p>Conduct formal assessments. (written, oral or on-the-job)</p>	<p>Grade and review formal assessments. (written, oral or on-the-job) Identify common errors.</p>	<p>If common errors or weaknesses in assessments are identified, determine why and which phases of SAT process must be improved.</p>		
<p>Step 5: Evaluation Phase (Section 5.5 of REGDOC 2.2.2)</p>	<p>Gather feedback from trainees and supervisors regarding the training and worker performance.</p>	<p>If feedback indicates problems, analyze to identify the cause and improve applicable SAT phase.</p>	<p>Any changes in regulatory requirements, engineering changes, new equipment and operating experience should be regularly inputted into the Analysis Phase.</p>				

* An example of a completed Analysis Phase (job and task analysis) is provided on the next page.

Practical Example of Analysis Phase of SAT Conducted in Accordance with the Principles of REGDOC 2.2.2

This example is provided for information purposes only.



Job : Conducting Radiation Survey to Determine Surface Dose Rate

TASK #	Task Statement	DIF			Training Decision	Conditions	Standards	Knowledge, Skills, Safety Related Attributes	Training Methods
		D	I	F					
1	Conduct pre-operation checks of survey meter – battery, calibration date, manufacturer’s recommended functional checks, response check using a check source (as applicable)	2	2	2	Initial Training	Given references, without assistance or coaching	Device must pass pre-operation checks in accordance with Operating Manual XYZ (Section X)	<ul style="list-style-type: none"> Basic Radiation Protection Survey Meter Model XYZ operation Using and accounting for check sources 	(1) Classroom - Radiation Protection, Operating Manual XYZ, (2) On the job - “Pre Operations Check” Document YYYYY+ exam
2	Execute measurement procedure – how to orient survey meters, where to measure, how many points, recording data	3	3	2	Initial Training	Given references, without assistance or coaching	Operator must perform survey in accordance with Radiation Survey Procedure XYZ	<ul style="list-style-type: none"> Basic Radiation Protection Survey Meter Model XYZ operation Conservative decision making 	(1) Classroom - Radiation Protection, Operating Manual XYZ, (2) On the job - “Conducting a Survey” Document Y+ exam
3	Execute Safety Protocol X given a reading of xxx µSv/h or higher (* Task Critical to Safety)	3	5	5	Initial & Continuing Training (task is highly important to safety and performed infrequently thus continuing training is needed)	Given references, without assistance or coaching	Operator must take appropriate action in accordance with Safety Protocol X <i>Packaging and Transport of Nuclear Substances Regulations, 2015, Section X</i>	<ul style="list-style-type: none"> Basic Radiation Protection Survey Meter Model XYZ operation Conservative decision making Safety Protocol X 	(1) Classroom - Radiation Protection, Operating Manual XYZ, Safety Protocol (2) On the job - “Safety Protocol” Document Z + exam (3) Continuing Training - yearly