

COGTRM14

Problem solving in transportation of radioactive material environments



Overview

This unit addresses the competence required to solve operational problems in transportation of radioactive material environments, within the constraints of the quality system.

This involves:

- 1 identification of deviations from the norm
- 2 collation of information
- 3 action to minimise loss/damage/delay and radiological consequences
- 4 trying to solve the problem promptly
- 5 maintaining your own and others' safety while working

This unit deals with the following:

- 1 identifying and limiting consequences of operational problems
- 2 diagnosing faults/causes and select solutions to operational problems
- 3 implementing and evaluating chosen solutions

Radioactive material can potentially cause harm to people, property and the environment, so it is vitally important that you take all necessary safety measures.

During this work you must take account of the relevant operational requirements and safe working practices AS THEY APPLY TO YOU.

Previous Version:

Adapted from Unit 4.4 of Chemical, Pharmaceutical and Petro-Chemicals Operations NOS – version May 2005

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Performance criteria

- You must be able to:*
- P1 check that you have the required operating procedures and that they are clear and complete
 - P2 follow safe working procedures at all times
 - P3 complete any documentation in accordance with operational and regulatory requirements
 - P4 ensure that the normal operating parameters have been established
 - P5 respond quickly to the situation
 - P6 identify where in the procedure the problem has occurred
 - P7 take appropriate action to minimise loss, damage and delay
 - P8 accurately record the problem
 - P9 investigate the problem thoroughly, using all relevant information
 - P10 check that all equipment was operated and functioning correctly, within recommended limits
 - P11 identify possible causes of the problem
 - P12 investigate and assess the solution/s to the problem, in consultation with relevant colleagues
 - P13 recommend the solution/s to the problem
 - P14 ensure that you have the necessary authority to implement the solution/s
 - P15 implement the chosen solution/s within the agreed parameters
 - P16 keep accurate records throughout the implementation of the chosen solution/s
 - P17 communicate with the relevant personnel
 - P18 monitor the operation to ensure action taken is appropriate
 - P19 make recommendations to the appropriate authority to reduce the re-occurrence of the problem
 - P20 if necessary wear appropriate PPE

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Knowledge and understanding

You need to know and understand:

- K1 the meaning of terms used in operating procedures and/or specifications
- K2 the relevance and importance of operational and regulatory requirements for the transportation of radioactive material
- K3 the importance of the operating procedures
- K4 what corrective action to take on discovering defective conditions, materials and/or equipment
- K5 the importance of a quick response to a situation
- K6 what action to take to minimise loss, damage and delay caused by the problem, and why this is important
- K7 the action to take to minimise radiological consequences
- K8 the action to take to implement emergency/recovery procedures
- K9 how to handle equipment safely in ways that protect yourself and others from risk
- K10 what personal protective equipment to use and why
- K11 why it is important to investigate thoroughly, in consultation with relevant colleagues
- K12 what problems may occur and how to deal with them
- K13 methods of investigation to identify possible solution/s
- K14 how to evaluate solution/s and choose most appropriate solution
- K15 the importance of communication throughout, how to do so effectively
- K16 the importance of authority within the organisation, and the limits of your authority
- K17 how to implement chosen solution/s
- K18 how to minimise disruption to operations
- K19 why it is important to record information accurately
- K20 why it is important to monitor the operation
- K21 how to make recommendations clearly and accurately
- K22 who to make recommendations to, to ensure that they are followed through
- K23 what your personal responsibilities are with regard to health, safety and environment
- K24 what documentation needs to be completed, how and when to complete it

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Additional Information

Glossary

Authority

That which is given to the person responsible for the operation

Communication

Methods to include individually, or in groups, either

- 1 Written
- 2 Spoken
- 3 Electronic

Documentation

Includes any relevant reports/records/recommendations and any other documentation

Health, safety and environment

To include all relevant legislation

Health, safety and environment problems

These may include contamination, dose rates and other chemical hazards

Investigative methods

To find the solution some or all of the following may be used:

- 1 Interviewing
- 2 Inspecting
- 3 Testing of materials
- 4 Testing of equipment

Operating instructions/specification

The set of instructions which detail the process and the quality/quantity/time outcomes for the operation, including normal operating parameters

Operational and regulatory requirements

The organisation's procedures, local management instructions, operating procedures, instructions, guidelines, codes of practice, regulations, legislation

Participants in transportation of radioactive material

These may include: manufacturer, consignor, consignee, carrier, packer, loader/unloader, driver, Dangerous Goods Safety Adviser, Radiation Protection Adviser

Personal Protective Equipment (PPE)

To be specified when necessary, this may include equipment or work wear to

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protect the worker from radiation and other hazards

Principles of safe transport of radioactive material

To protect persons, property and the environment from the effects of radiation by means of:

- 1 containment of the radioactive contents
- 2 control of external radiation levels
- 3 prevention of criticality
- 4 prevention of damage caused by heat

Problems

These can relate to materials, equipment and/or materials and/or specifications. Typical operational problems may include:

- 1 Non conforming product
- 2 Equipment damage and malfunction
- 3 Non-achievement of specified quantity/time and/or quality requirements
- 4 Health/safety/environmental problems
- 5 Logistic problems

Radioactive material and other hazards

May include solids, liquids and gases

Recommendations

These may include some or all of the following:

- 1 Improving quantity
- 2 Reducing costs
- 3 Safety aspects
- 4 Environmental aspects
- 5 Improving time scales

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