

COGSC8

Provide frequency assessments for nuclear safety cases



Overview

The main outcome of this activity is the development of a frequency assessment, to be included in the overall risk assessment in the safety case.

This activity includes reviewing the hazards arising from an activity, and defining the scope of the frequency assessment, selecting appropriate frequency assessment methods, obtaining relevant data, applying the frequency assessment method, identifying factors leading to failures, and providing data on their frequency, considering the results, and explaining any uncertainties or limitations.

This activity is likely to be undertaken by someone involved in preparing safety cases primarily by writing them or contributing to the detailed content.

This unit deals with the following:

1. Provide frequency assessments for nuclear safety cases

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

Previous Version: Unit N308 National Occupational Standards in Radiation Protection - December 2005

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Performance criteria

You must be able to:

- P1 review the outcomes of all relevant hazard identification studies
- P2 define the scope of the frequency assessment and how it contributes to the safety case
- P3 select the appropriate frequency assessment method, and justify its use by identifying its strengths and weaknesses
- P4 obtain and collate all relevant data for the frequency assessment by using appropriate information sources and specialist assistance if necessary
- P5 apply the frequency assessment method by adopting suitable techniques relevant to the safety case
- P6 identify the common failure mode and rates for the nuclear-related activities being undertaken
- P7 identify the specific human and plant factors and the sequence of events that could lead to failures to control the hazards
- P8 generate data and quantify the frequency of failures for use in risk assessments and for developing plant procedures
- P9 consider the results of the frequency assessment against ALARP principles
- P10 explain clearly any uncertainties or limitations relating to the results of the frequency assessment
- P11 comply with all relevant regulations and standards, and record all relevant actions and outcomes in the appropriate information systems

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Knowledge and understanding

You need to know and understand:

- K1 ALARP principles
- K2 communication and presentation methods
- K3 frequency assessment methods, including fault trees and event trees
- K4 hazard and risk assessment methods
- K5 health and safety issues and requirements
- K6 human factors
- K7 nuclear industry: types of facilities, materials, and processes
- K8 organisational structures and procedures
- K9 radiation: types, sources, and hazards
- K10 reliability and failure modes
- K11 safety case design and preparation
- K12 statutory requirements, regulations, and standards, including international, national, and local

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Suite Safety Case Preparation

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