International Safety Research Inc.

COSYMA Course - Nuclear Accident Consequence Assessment

WHY A COSYMA COURSE?

COSYMA represents an invaluable tool for:

- conducting Probabilistic Risk Assessments
- creating a Technical Planning Basis
- examining the effectiveness of emergency plans
- estimating the economic liabilities associated with nuclear accidents

It is a flexible system that can calculate the health and economic consequences of accidental radioactive material releases to the atmosphere. It allows the use of probabilistic weather information to weigh the consequences and obtain the overall risk associated with an accident. Modules to simulate countermeasures (or protective actions) are also included.

WHAT IS THE PURPOSE OF THIS COURSE?

This is an introductory course that focuses on nuclear accident consequence assessment using the COSYMA computer programme. The course incorporates both conventional lectures and hands-on workshops designed to familiarize participants with the programme's operation. Although it is aimed at the PC-COSYMA user, the course includes a mainframe version demonstration of the programme. COSYMA was developed by the European Commission to integrate the best consequence assessment methods in use at this time.

Participants attending this course will learn about:

- ❑ atmospheric dispersion models (overview)
- ❑ specific dispersion models used in COSYMA
- ❑ dose consequence calculations using a single weather scenario
- ❑ meteorological sampling models in the context of PRA
- ❑ site data relating to population and agricultural production distributions
- ❑ practical tips related to the management of safety analyses

WHO WOULD BENEFIT FROM THIS COURSE?

The ideal candidate for this course has a basic understanding of health physics and is familiar with operating a computer.

Attendees will need to provide their own PC. Those who have a licence for PC-COSYMA are encouraged to bring it with them. If participants wish to continue using COSYMA once the course is complete, it is suggested that they obtain a license from the EC.

WHAT IS INTERNATIONAL SAFETY RESEARCH INC.?

International Safety Research Inc. (ISR) is a Canadian firm with international experience in risk assessment and emergency response. ISR has provided countries such as Canada, Austria, the Netherlands, South Africa, Hungary, Romania, Algeria and Indonesia with these types of services.

ISR focuses on the technological aspects of risk, safety and emergency management when helping organizations identify, develop, implement and test the tools and knowledge that are needed to maintain effective small and large-scale safety management programs.

Our core services are:

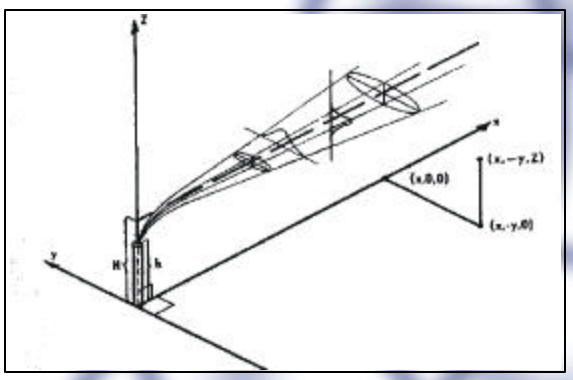
- risk identification and analysis
- safety assessment
- development of technical basis for emergency planning and response
- development and implementation of emergency response organizations, plans, procedures and tools
- emergency response audits
- emergency response exercise preparation, conduct and evaluation
- training

International Safety Research Inc., 1 (613) 241-4884, FrancoisLemay@i-s-r.ca

COSYMA COURSE – NUCLEAR ACCIDENT CONSEQUENCE ASSESSMENT

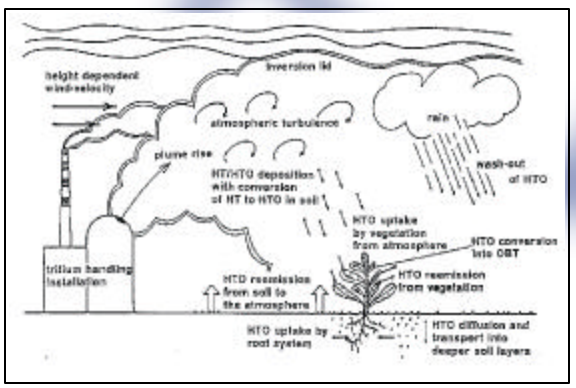
Module 1:

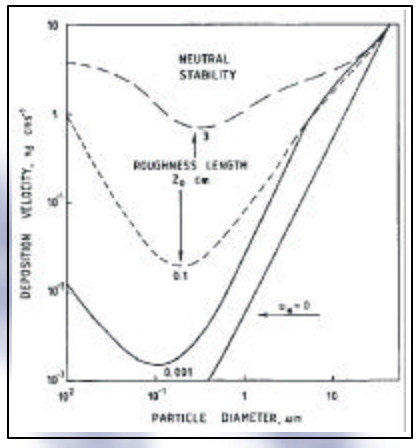
- ❑ Introduction *
- ❑ Radiation Protection Concepts, Decay and Progeny
- ❑ Source Term *
- ❑ Atmospheric Dispersion *
- ❑ Gaussian Parameterization *



Module 2:

- ❑ Release Data *
- ❑ Release Duration *
- ❑ Deposition and Re-suspension *
- ❑ Meteorological Sampling *
- ❑ Radiation Dosimetry
- ❑ Exposure Pathways *





Module 3:

- ❑ Ingestion Pathway *
- ❑ Health Effects *
- ❑ Population Distribution *
- ❑ Countermeasures *

Module 4:

- ❑ Economic Consequences *
- ❑ Results *
- ❑ PC vs. Mainframe version *
- ❑ Puff and Explosion Models
- ❑ Management
- ❑ Problems and Bugs

Module 5: Course evaluation and discussion

* indicates that the sub-module includes a workshop.

International Safety Research Inc., 1 (613) 241-4884, FrancoisLemay@i-s-r.ca