

# *Principles of Nuclear Safety*

## Module 12

# **EMERGENCY PROCEDURES**

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## *Types of Emergencies*

- First Aid
- Rescue
- Fire/explosion
- Environmental spill
- Breach of Security
- Radiation Emergency
- Common mode incident (earthquake, flood, plane crash, tornado, act of terrorism...)

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## *The Need for Emergency Procedures*

- **A condition of the PROL**
  - to have and to drill radiation emergency procedures
  - to obtain AECB approval for any changes
- **Must conform to Provincial Nuclear Emergency Plan**
- **To be followed in event of serious process failure**
  - to minimize risk to workers
  - to regain control of the incident unit
  - to mitigate effect on Public health & property

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## *Types of Emergency Procedures for Nuclear Accidents*

- **Abnormal Incidents Manual**
  - followed by ANO to regain control, and stabilize incident unit
- **Radiation emergency procedures**
  - followed by whole site
  - to protect workers responding to incident
  - to mitigate and accommodate impact on public health and property, and on environment
  - to provide information to Federal, Provincial and Municipal response organizations and regulatory bodies, and to the general public via the media

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## *Emergency Response Role of Station*

- Declare radiation emergency
- Regain control; place units in safe state
- Notify civil authorities
- Recommend protective actions to Municipality
- On-site and off-site radiation surveys
- Project public dose
- Hourly reports to Provincial Operations Center
- Provide radiation protection to public as req'd

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## *Emergency Response Role of Corporate Office*

- Interface with governments
- Media interface at Joint Information Center
- Technical & Resource support to Station

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## *Emergency Response Role of Provincial Government*

### ■ per Emergency Plans Act, 1983

#### ■ Phase 1 Activities:

- declare nuclear emergency, assume sweeping powers
- mobilize emergency response organization
  - Representatives from various Provincial Ministries, Ontario Hydro, and the academic community
- evaluate public safety threat based on dose projection
- issue protective action directives to Municipalities
- issue early venting directives to Ontario Hydro
- manage Joint Information Center--media relations

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## *Phase 2 Provincial Response*

- collect and analyze environmental samples
- revoke protective actions as conditions improve
- repatriation of evacuees
- long-term restoration & follow-up

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## *Emergency Response Role of Municipalities*

- **Public alerting**
- **Execute protective actions**
  - **banning food & water consumption**
  - **sheltering**
  - **evacuation**
  - **distribution of KI pills (thyroid blocking)**
- **Traffic control**
- **Operation of Evacuee Centers**
  - **provision of food, shelter, essential services**

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## *Emergency Response Role of Federal Government*

- **AECB directly involved in recovery efforts at  
Station**
- **Interfaces via Health & Welfare Department with**
  - **other Provinces, should release cross Provincial boundary**
  - **other nations, should release cross international boundaries**
- **Administer damage claims per Nuclear Liability  
Act**

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