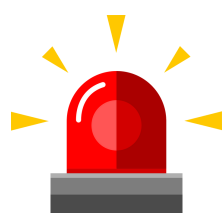


# MODULE 1

# HYDROGEN RISK HIERARCHY



## PIVOTAL OCCURRENCES



## RESPONSE TO THREATS



## PREVENTION

### PIVOTAL OCCURRENCES

The least favorable yet conceivable scenarios for which you must be prepared.

- **"Explosion"**: Mitigating the impacts of an explosion (e.g., via specialized structures or vents).
- **"Fire"**: Strategies for extinguishing hydrogen fires (specificity, absence of visible flame, elevated temperature).
- **"First Aid"**: Protocols for administering first aid to individuals who are injured.
- **"Analysis"**: Examination of incidents (deriving conclusions for future reference).

### RESPONSE TO THREATS

When prevention is inadequate, what matters is a prompt and efficient response.

- **"Alarming"**: Instantaneous alerts (audible and visual) upon the detection of hydrogen.
- **"Evacuation"**: Clearly defined evacuation procedures (designated routes, assembly points).
- **"Cut-off"**: Automatic cessation of the hydrogen supply (safety systems).
- **"Fire extinguishers"**: Ensure access to suitable fire extinguishing agents (when feasible and safe).

### PREVENTION

This constitutes the cornerstone of security—the essential element in mitigating risk prior to any incidents occurring.

- **"Detection"**: Hydrogen sensors (continuous concentration monitoring).
- **"Ventilation"**: Efficient ventilation (natural/mechanical – mitigates hydrogen accumulation).
- **"Design"**: Secure design of installations (airtightness, suitable materials, grounding).
- **"Training"**: Ongoing staff development (hazard recognition, protocols).