

ISOE EG-SAM Interim Report

Chapter 6 MONITORING AND MANAGING THE RADIOACTIVE RELEASES AND CONTAMINATION

**Report on behalf of the Sub expert
Group**

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Chapter Content

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Chapter Content

6.1 Monitoring and managing the radiological releases

- Gaseous and liquid release

6.2 On-site and off-site contamination monitoring

- To plan the emergency work from a radiation protection point of view
- To have a decision basis of protective actions
- To plan how to manage the contamination
- Operational intervention levels
- What to monitor:
 - Ambient dose rate, potential hot spots
 - Surface contamination, Airborne contamination

6.3 Management of the contamination

- Systems, structures and components
- Mobile equipment and material
- Emergency responders

Chapter Conclusions

During the emergency and post-accident mitigation phases, radioactive and contaminated materials released internally and externally from the affected facility require extensive radiological controls to avoid or minimize radiation exposures of emergency workers/responders and the public.

Radioactive releases must be monitored and controlled within the plant and offsite using robust monitoring equipment and engineering controls as necessary.

Key topics & Discussion points (1)

Monitoring the contamination (6.2)

Share experience on monitoring possibilities

- Fixed dose rate monitors (6.2.2)
- Hot spot detection (6.2.2)
- Surface and airborne contamination (6.2.3)
- Mobile equipment for radiological surveys, robotics

What monitoring capacity is absolutely necessary, to be able to plan and optimize protection for the workers?

What kind of monitoring should be permanently at the site and what can be purchased if needed?

→ Break out session “Facility configuration and readiness”



Key topics & Discussion points (2)

Management of the contamination (6.3)

- Contamination fixation (6.3.1)
 - LL Fukushima (7.3.7)
 - Synthetic plastic emulsion (dust inhibitor)
 - Asbestos encapsulant on buildings – incombustibility and stable
- Management contaminated water? (6.3.4)
 - LL Fukushima (7.3.6)
 - Minimization of the production of contaminated water
 - Establish a closed cooling system

Key topics & Discussion points (3)

Operational criteria for RP actions or OIL (6.2.1)

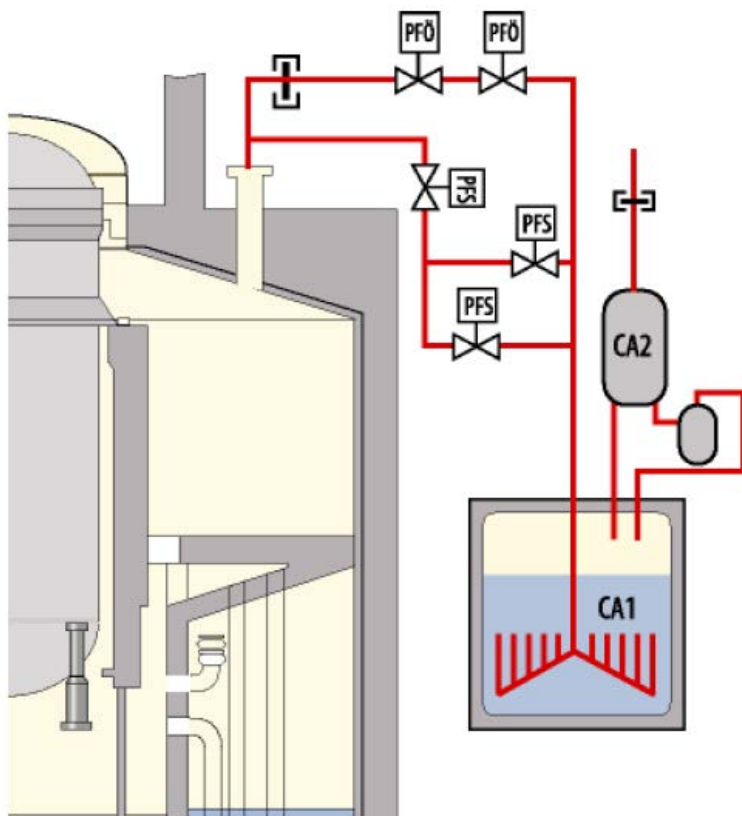
- When decontaminating, equipment, vehicles etc – guidance on what is an acceptable level to stop the process?
- What could be an OIL, for personnel on site, to be sent home? Dose rate, other trigger?
- Guidance on “release” of radioactively contaminated water to the environment?



The end



Filtered venting - Sweden



Syfte aerosoler)	Filtrera inneslutningsgaser (jod, aerosoler)
Medium	0.015 M $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$
pH	10.5 ± 0.5 , bufferas med Na_2CO_3
Temperatur	10-20°C (BWR), 90°C (PWR)
Avskiljning	DF > 100 (BWR) DF > 500 (PWR)
analyser)	(CH_3I DF ~5 men krediteras inte i analyser)
Begränsningar	Ädelgaser (Xe, Kr)

OIL – support for the Emergency center

Parameter	Händelse	Värde	Rekommenderad åtgärd
Ytkontaminat ion	Personal	$\geq 400 \text{ kBq/m}^2$ $\geq 5 \text{ } \mu\text{Sv/h}$	Dekontaminering och ev HKM
	Bilar	$\geq 400 \text{ kBq/m}^2$	Dekontaminering
	Mark	$\geq 400 \text{ kBq/m}^2$	Dekontaminering
		$\geq 10 \text{ } \mu\text{Sv/h}$	Utrym samlingsplatser
Dosrat omgivning		$\geq 1 \text{ mSv/h}$	Motsvarar röd zon. Begränsa tillträde. (Obs larm etc)
		$\geq 100 \text{ } \mu\text{Sv/h}$	<ul style="list-style-type: none"> Grund för evakuering, OL beslutar Jodtabletter till alla Distribuera andningsskydd till personal som behöver arbeta långvarigt utomhus