A COMPARISON OF IAEA SAFETY REPORT SERIES 45 AND VVR-S DECOMMISSIONING PLAN REV. 9

MANAGEMENT OF SOLID AND LIQUID RADWASTE (SRS 45 - 3.7 <=> DP - 7)

FINAL RADIATION SURVEY FOR RELEASE THE SITE (SRS 45 - 3.15 <=> DP - 15)

§	IAEA SRS 45	VVR-S DP	Remarks/Related Issues from Participants
3.7	**GENERAL STATEMENT OF WASTE MANAGEMENT**		
	The waste management plan is normally a separate document that is referenced and summarized in the decommissioning plan, so there is some repetition of information, which would not be required if the waste management plan were directly incorporated in the decommissioning plan.	General statement and it is part of Chapter 7 : Radioactive Waste Management, as per §7.1 - Introduction	The Waste Management Plan and the Decontamination Plan must be provided, with identification of chemical and hazardous waste streams Limits for different waste classification should be provided, to allow the volume of different waste classes to be calculated.
3.7.1	**Identification of waste streams**		
	Identified all the possible waste streams that might be generated as a result of the decommissioning.	Identified in “Introduction” as per §7.1	Sufficient
	The types of waste streams are specified according to the hazard posed and the waste classification system adopted and include radioactive waste, hazardous waste, mixed waste2, other types of non-hazardous waste, recyclable material and cleared material.	Mentioned in “Introduction” as per §7.1	see 3.7.2
3.7.2	**Solid Radwaste**		
i.	To provide a summary of solid radioactive waste that are expected to be generated during the decommissioning activities including: a) Soil; b) Concrete; c) Plastic; d) Contaminated piping and structural material; e) Steel; f) activated components; and g) wood.	Out of 7 types of waste, only soil was not mentioned.	Para 2.3.2.1: Radiological Status of Environment. Investigation was made on the surface soil contamination and found two location containing Am-241 exceeds clearance level. Observations: Need to consider soil as one of identified solid waste to be managed. The disposal of the resins should be defined
ii.	Estimation of: a) Volumes; b) Weights; c) amount of radioactivity by radionuclide; d) when the waste will be generated.	Volume and weights was mentioned in Appendix 7.2.1 vol.1 of supporting docs.	Amount of radioactivity and when it will generate was not mentioned as it is mentioned in Euratom art. 37.
iii.	A description of the procedures for: a) Treatment; b) Conditioning; c) Packaging; and d) Storing. each of waste on-site (prior to shipment for disposal).	Mentioned in Appendix 7.2.1 vol. 1 of supporting docs (flow chart).	Beside flow chart, it is good if could elaborate further in written procedures. Procedures should be referenced in the DP.
iv.	Measures that will be taken to reduce the volume of waste that will be sent for disposal.	Partially mentioned in Ch. 7 and parts of Appendix 7.2.1 Vol.1 of supporting docs (flow chart).	Beside flow chart, it is good if could elaborate further in written procedures.

§	IAEA SRS 45	VVR-S DP	Remarks/Related Issues from Participants
			Procedures should be referenced in the DP.
v.	A description of the handling and management of waste that is volumetrically contaminated.	Mentioned in Appendix 7.2.1 of supporting docs (flow chart).	Beside flow chart, it is good if could elaborate further in written procedures. Procedures should be referenced in the DP.
vi.	A description to handled contaminated soil or loose radioactive material to prevent re-dispersal after exhumation and collection.	Not mentioned.	Based on explanation, it is under consideration for the next revision of DP.
vii.	Name and location of the disposal facility.	Baita-Bihor, a National Radwaste Repository, located 600 km from facility.	Sufficient
viii.	Identification and explanation of waste streams for which no disposal route currently exists (if any).	Disposal route already identified. For other waste (graphite, Al, resins etc), it was mentioned but not sufficient.	Should be further elaborated.
ix.	The procedures for: a) Monitoring; b) Assaying; and c) characterizing the waste.	Characterization clearly mentioned in Ch. 3 of supporting doc (Characterization Survey Reports). Monitoring and assaying, not clearly defined.	Ch. 7 did not mentioned in reference to other docs. Procedures should be referenced in the DP.
x.	The procedures for waste tracking system.	Not mentioned.	Procedures should be referenced in the DP.
xi.	Procedures for quality assurance records.	Mentioned in Ch. 12: Quality Assurance (12.3.1, 12.3.11) but nothing on the procedures and lists of records itself.	Procedures and lists should be referenced in the DP.
3.7.3	**Liquid Radwaste**		
i.	Summary of the liquid radioactive waste that are expected to be generated.	Mentioned in Ch. 7.1.2	Sufficient.
ii.	Estimation of: a) Volume; and b) when it is expected to be generated.	Estimated volume identified.	Need to identify the timing expected to be generated.
iii.	Procedures for: a) Treating; b) Conditioning; c) Packaging; and d) Storing each waste on-site prior to processing or shipment for disposal.	Mentioned in Appendix 7.2.1 of supporting docs (flow chart).	Beside flow chart, it is good if could elaborate further in written docs. Procedures should be referenced in the DP.
iv.	Measures to reduce the volume of residual waste that will be sent for disposal.	Mentioned in Ch. 7 and Appendix 7.2.1 of supporting docs.	Sufficient.
v.	Name and location of the disposal facility.	Baita-Bihor (DNDR).	Sent to DMDR for treatment and the residual to DNDR for disposal.
vi.	Identification and explanation of waste streams for which no disposal route currently exists (if any).	-	Not applicable.
vii	The procedures for: a) Monitoring; b) Assaying; and	Characterization clearly mentioned in Ch. 3 of supporting doc (Characterization Survey Reports).	Ch. 7 did not mentioned in reference to other docs. Procedures should be

§	IAEA SRS 45	VVR-S DP	Remarks/Related Issues from Participants
	c) characterizing the waste.	Monitoring and assaying, not clearly defined.	referenced in the DP.
viii.	The procedures for waste tracking system and quality assurance records.	Mentioned in Ch. 12: Quality Assurance (12.3.1, 12.3.11) but nothing on the procedures and lists of records itself.	Need to establish the procedures and lists of existing records.
3.7.4	**<u>Waste containing both radionuclides and other hazardous material (Mixed)</u>**		
i.	A summary of the types of solid and liquid waste that contain both radionuclides and other hazardous material that are expected to be generated during the decommissioning process.	Define in Table 7.3.1 of Ch. 7.	it is not explained explicitly whether these materials does contain radioactivity or not. It is stated that this is non radioactive waste. There is no enough information in document. Contradiction?
ii.	An estimated volume and when it is expected to be generated.	Estimated in kg.	Sufficient data about mass Observation: No indication on time when it expected to be generated.
iii.	A description of the procedures for treating, conditioning, packaging and storing on-site prior to processing or shipment for disposal.	A little is described in Ch. 7.3. but there is no procedures explained or referred	Not clear what is real plan for processing of this kind of material. Procedures should be referenced in the DP.
iv.	The procedures that will be used to reduce the volume of waste that will be sent for disposal.	A little is described in Ch. 7.3. but there is no procedures explained or referred	Procedures should be referenced in the DP.
v.	The name and location of the disposal facility.	App 7.2.2. defines DNDR as final destination for secondary waste App 7.2.3 defines DNDR as final destination for waste generated during the DMDR modernization	some of this waste could be hazardous some of this waste could be hazardous waste (acid waste, organic liquids and water solutions)
vi.	Waste streams for which no disposal routes currently exist are identified and an explanation provided as to how these waste streams will be managed until a disposal route are available.	Not applicable	Needs to be resolved issues stated in previous items
vii.	The procedures for monitoring, assaying and characterizing this waste.	No	Needs to be resolved issues stated in previous items
viii.	The procedures that will be implemented to generate the appropriate waste tracking system and quality assurance records.	No. In Ch 12.3.16. is stated that tracking system for all decommissioning activities will be implemented according to the provisions oh national legislative, but it not explicitly specified the procedure related to waste tracking system	Procedures should be referenced in the DP.
Ix.	The coordination with other regulatory agencies that have jurisdiction over hazardous components contained in the waste.	Yes, discussed in Ch. 7.3.	Sufficient

§	IAEA SRS 45	VVR-S DP	Remarks/Related Issues from Participants
3.15	**Final Radiation Survey**	**DP Chapter 15**	
i.	Overview of the final survey design	**Item 15.2** - Direct measurement of alpha and/or beta contamination, code AC-PC-DDR-401; - Alpha and/or beta scanning, code AC-PC-DDR-402; -Indirect measurement of alpha and/or beta contamination using smear samples, code AC-PC-DDR-403. - Gamma spectrometry measurements are performed in accordance with: - Gamma spectrometry analysis of samples taken from VVR-S reactor, code AC-PC-DDR-404; - Interface between DDR and IFIN-HH departments for gamma spectrometry analysis, code AC-PO-DDR-402. - Surface activity measurement by gamma spectrometry; code AC-PC-DDR-405. Sampling must be performed according to the procedure: - Sampling, identification and recording of samples, code AC-PL-DDR-401.	Sufficient
ii.	Mapping or drawing of the site, area or building that will be included in the survey	DP previews to address such issues on the **Final Radiation Survey Plan**, but this document was **note elaborated yet.** The scope of this document was defined: **Final Survey Procedures** - Sampling parameters - Background/baseline levels identified - Major contaminants identified - Release guidelines established - Equipment and procedures selected - Instruments and equipment - Techniques of instrument use - Procedures followed **Survey Findings** - Summary of findings - Techniques for reducing/ evaluating data - Statistical evaluation - Comparison of findings with guideline values and conditions - Assessment of acceptability **Conclusions and summary** **Appendices** - Map and drawings - Detailed radiation and contamination data - Sample data	The Final Radiation Survey Plan should be available before phase 3
iii.	Description of background conditions and reference areas or material used to determine those areas , including justification for their use		
iv.	Procedures to perform the final Survey		
vii.	Identification of types of field instruments used and procedures for their use, calibration, operational checks, coverage and sensitivity for each type of media and radionuclide		
viii.	Discussion of procedure to demonstrate adequate instruments sensitivity during their use		
x.	Explanation of methodology for evaluating the survey results to ensure they are statistically correct and accurate		
xi.	Provision of acceptable residual activity levels and their derivation		
xii.	Description of data in the final survey report and discussion of analytical procedures for comparing the results obtained with the acceptable residual activity levels		
xiii.	Identification of the records and description of procedures to maintain these records		
vi.	Identification of laboratory analytical instruments for measuring samples and procedures for the calibration, sensitivity and methodology for evaluation	No	Must be included on Final Radiation Survey Plan
xx.	Description of procedures for the collection, control and handling of the samples that will be analyzed in the laboratory	no	Must be included on Final Radiation Survey Plan