Eskom	WORKING PROCEDURE	Allocation Centre 38A	Reference Number KWW-TES-024	Rev 5
NNR: NO No.:	DRUMMING OF NON-COMPACTABLE RADIOACTIVE WASTE IN STEEL DRUMS			PAGE 1

KORC	ACCESS	IMPORTANCE CATEGORY	NEXT REVIEW DATE	DATE AUTHORISED
NO	Nuclear Restricted	SR	2026-02-23	2021-02-23

COMPILED / REVISED	REVIEWED	AUTHORISED
(sgd) U PHILANDER	(sgd) X NOVEMBER	(sgd) C LE ROUX
U PHILANDER	X NOVEMBER	C LE ROUX
SENIOR TECHNICIAN RADWASTE	SUPERVISOR RADWASTE	SENIOR SUPERVISOR RADWASTE
DATE 2021-02-22	**DATE** 2021-02-23	**DATE** 2021-02-23

THIS PROCEDURE HAS BEEN SEEN AND ACCEPTED BY:

U Philander	Document Custodian
K Browning	RP Engineer
I Philander	ALARA

CATEGORY 2 – PROCEDURE AT THE JOB

FCA	ALARA REVIEW	SUPERSEDES
PROTECTION	YES 2021-02-05	KWW-TES-024, Rev 4 dd. 2020-11-05 FULL REVIEW

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1.0 PURPOSE

1.1 To describe the process for the drumming of non-compactable waste into 210 litre steel drums.

2.0 SCOPE

2.1 Applicable to the drumming of non-compactable waste in steel drums performed in the Decontamination Workshop and Compacting Station (N034).

3.0 DEFINITIONS AND ABBREVIATIONS

3.1 Definitions

3.1.1 **NCW** – Is either non-compacted waste in steel drums and concrete drums or high active trash directly encapsulated in a concrete drum.

3.2 Abbreviations

3.2.1 **NAB** – Nuclear Auxiliary Building

3.2.2 **RPC** – Radiation Protection Certificate

3.2.3 **RPOO** – Radiation Protection Operations Office

4.0 REFERENCES

4.1 Referenced Documents

4.1.1 335-2, Rev 5: Koeberg Nuclear Power Station Management Manual

4.1.2 KAA-500, Rev 13: The Process for Controlled Documents

4.1.3 KSA-011, Rev 14: The Requirements for Controlled Documents

4.2 Applicable Documents

4.2.1 VLP-WAC-001: Vaalputs Waste Acceptance Criteria

4.2.2 Waste Treatment Form (LLW 13)

5.0 PREREQUISITES

5.1 This procedure can be performed in any unit state.

6.0 PRECAUTIONS AND LIMITATIONS

	ACTIONS AND CHECKS	SIGN
6.1	The drumming of non-compactable radioactive waste in steel drums must be carried out by Radwaste and Decontamination Workshop personnel under an RPC.	
6.2	At the LLW building, select drums to receive the non-compactable waste. Inspect each drum for soundness. Pay particular attention to conformity of shape and make sure the rubber seal and lid is undamaged.	
6.3	Radiation Protection must ensure that the doserates of the contents drummed is below 2 mSv/h.	
6.4	Radwaste and Decontamination Workshop personnel must ensure that the final weight of the drum does not exceed 200 kg.	

NOTE 1: *The main sources of non-compactable radioactive waste come from the Decontamination Workshop, NAB and from containment during outages.*

NOTE 2: *Any non-compactable radioactive waste with a contact doserate of < 2mSv/h generated in the NAB or containment will be placed in a steel drum located at various locations and taken to the compacting area (N034) when full.*

7.0 INSTRUCTIONS

	ACTIONS AND CHECKS	SIGN
7.1	**Decontamination Personnel**	
7.1.1	Receive the Work Request from planner and discuss the contents with the Supervisor.	
7.1.2	Report to the RP office at the decontamination workshop for RPC dosimetry, and check availability of RP cover.	
7.1.3	Place non-compactable radioactive waste in steel drums.	
	NOTE: *Radiation Protection Monitor to ensure that the doserates on the non-compactable radioactive waste is below 2 mSv/h.*	
7.1.4	When drum is almost full, fill voids with vermiculite.	
7.1.5	Fit lid and closing ring and tighten the nut and bolt combination to 10 Nm	
7.1.6	Visually confirm that there is no significant bending of the lugs. (Bending of lugs containing the closing bolt are not deformed and that the welds are fully formed and intact)	
7.1.7	If 7.1.6 are not met, the seal ring should be replaced and the “failed” ring be quarantined for further evaluation/testing, clearly labelled.	
7.1.8	Raise a EWR for each failed spot weld connection.	
7.1.9	Radiation Protection Monitor to survey the drum and ensure that the contact doserates on the non-compactable radioactive waste steel drum is below 2 mSv/h.	
7.1.10	Record all necessary data on drum label and Waste Transfer Form (available electronically G:\Koeberg\Nuclear Services\Radiation Protection\SharePoint Migration\RP Operations\Radwaste\LLW-13 Forms\LLW13 STEEL DRUMS).	
7.1.11	Radwaste section transfer full drums to LLW Building with an RP escort in attendance.	
7.2	**Radwaste Personnel**	
7.2.1	Receive the Work Request from planner and discuss the contents with the Supervisor	
7.2.2	Report to the RPOO office for RPC dosimetry, and check availability of RP cover.	
7.2.3	Check steel drum contents in N034.	
7.2.4	When steel drum is almost full, fill voids with vermiculite.	
7.2.5	Fit lid and closing ring and tighten the nut and bolt combination to 10 Nm	
7.2.6	Visually confirm that there is no significant bending of the lugs. (Bending of lugs containing the closing bolt are not deformed and that the welds are fully formed and intact.)	

	ACTIONS AND CHECKS	**SIGN**
7.2.7	If 7.2.6 are not met, the seal ring should be replaced and the “failed” ring be quarantined for further evaluation/testing, clearly labelled.	
7.2.8	Raise a EWR for each failed spot weld connection.	
7.2.9	Radiation Protection Monitor to survey the drum and ensure that the contact doserates on the non-compactable radioactive waste steel drum is below 2 mSv/h.	
7.2.10	Record all necessary data on drum label and Waste Transfer Form (available electronically G:\Koeberg\Nuclear Services\Radiation Protection\SharePoint Migration\RP Operations\Radwaste\LLW-13 Forms\LLW13 STEEL DRUMS).	
7.2.11	Radwaste section transfer full drums to LLW Building with an RP escort in attendance.	

8.0 ACCEPTANCE CRITERIA

N/A

9.0 RECORDS

9.1 All records generated must be retained as permanent records.

10.0 ATTACHMENTS

Appendix 1 – Non-compactable Waste

Appendix 2 – Justification

APPENDIX 1

NON-COMPACTABLE WASTE

1. ACCEPTABLE NCW INVENTORY

- Open Valves
- Open Piping
- Metal Plates
- Steel
- Rubber
- Concrete
- Assorted filters (Filter Elements)
- Aerosol cans (Depressurised and flattened)
- Wood
- Activated Carbon (Charcoal filter filler material)
- Plastic

2. NON-ACCEPTABLE SCRAP OR WASTE AS NCW

- Grease or oil
- Sludge
- Pressurised containers
- Explosive or pyrophoric materials
- Hazardous or toxic materials

APPENDIX 2

JUSTIFICATION

Revision 4

1. Update required to correctly align all materials placed into steel drums defined as non-compactable waste.

   Safety Screening S11244

Revision 5

1. Added “Visually confirm that there is no significant bending of the lugs to address CR 117375-001 CA at para 7.1.6.

2. Added “If 7.1.6 are not met, the seal ring should be replaced and the “failed” ring be quarantined for further evaluation/testing, clearly labelled to address CR 117375-001 CA at para 7.1.7.

3. Added “Raise a EWR for each failed spot weld connection” to address CR 117375-001 CA at para 7.1.8.

4. Added “Visually confirm that there is no significant bending of the lugs to address CR 117375-001 CA at para 7.2.6.

5. Added “If 7.2.6 are not met, the seal ring should be replaced and the “failed” ring be quarantined for further evaluation/testing, clearly labelled to address CR 117375-001 CA at para 7.2.7.

6. Added “Raise a EWR for each failed spot weld connection” to address CR 117375-001 CA at para 7.2.8.

   Safety Screening S11430