KOOLYMILKA RWSF INVENTORY

Outer Package Number	Package Description	Volume litre	Weight kg	s33	s33	s33	s33	s33	s33	s33	s33	Note	Ownership
A1	Steel Drum	205	TBA	s33							s33	3	Defence
A2	Steel Drum	205	TBA	s33							s33	3	Defence
A3	Steel Drum	205	TBA	s33							s33	3	Defence
A4	Steel Drum	205	TBA	s33							s33	3	Defence
A5	Steel Drum	205	TBA	s33							s33	3	Defence
A6	Steel Drum	205	TBA	s33							s33	3	Defence
A7	Steel Drum	205	TBA	s33							s33	3	Defence
A8	Steel Drum	205	TBA	s33							s33	3	Defence
A55	Steel Drum	205	TBA	s33							s33	3	Defence
B16-01	Steel Drum	205	TBA						s33		s33	5	Defence
B16-02	Steel Drum	205	TBA						s33		s33	5	Defence
B16-03	Steel Drum	205	TBA						s33		s33	5	Defence
B16-04	Steel Drum	205	TBA						s33		s33	5	Defence
B16-05	Steel Drum	205	TBA						s33		s33	5	Defence
B16-06	Steel Drum	205	TBA						s33		s33	5	Defence
B16-07	Steel Drum	205	TBA						s33		s33	5	Defence
B16-08	Steel Drum	205	TBA						s33		s33	5	Defence
B16-09	Steel Drum	205	TBA						s33		s33	5	Defence
B16-10	Steel Drum	205	TBA						s33		s33	5	Defence
A17	Steel Drum	205	TBA						s33		s33	6	Defence
A820	Steel Drum	205	TBA						s33		s33	6	Defence

KOOLYMILKA RWSF INVENTORY

Outer Package Number	Package Description	Volume litre	Weight kg	s33	s33	s33	s33	s33	s33	s33	s33	Note	Ownership
W-01	Steel Drum	205							s33		s33	7	Defence
W-02	Steel Drum	205							s33		s33	7	Defence
W-03	Steel Drum	205							s33		s33	7	Defence
W-04	Steel Drum	205							s33		s33	7	Defence
W-05	Steel Drum	205							s33		s33	7	Defence
B16-11	Wooden Box	550	110	s33					s33		s33	8	Defence

Summary of Holdings

Owner	Volume
Defence	5.68 m3

Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

Ref: R17/03885

1 May 2017

s22
Executive Director, Logistics Assurance
Joint Logistics Command
s22
PO Box 7913
CANBERRA BC ACT 2610

Dear s22

Inspection of Department of Defence and Australian Defence Force (Defence) – Facility Licence F0213

I attach a copy of the report R17/03879 relating to the inspection of Defence's Waste Store at Koolymilka from 28 March - 7 April 2017.

The information collected during the inspection suggests that there may have been a failure to comply with the following condition of **Facility Licence F0213:**

1. Licence condition **6** which requires the licence holder to comply with the relevant parts of codes and standards listed on the licence. The conclusions of the inspector can be found in the section of the report entitled 'radiation protection' and relates to the availability of a calibrated radiation survey meter.

Subsection 31(2) of the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act) requires a licence holder to comply with the conditions of the licence. Failure to do so can result in a finding of breach and may result in enforcement action being taken. Irrespective of whether any enforcement action is taken, if a licence holder is found to be in breach of the Act, the CEO of ARPANSA is obliged to report details of the breach to Parliament pursuant to sub-sections 59(3) and 60(3) of the Act.

Further information about the reporting of breaches can be found in the Regulatory Guide: Graded Approach to Non-Compliance.

Prior to making a determination on whether there has been a breach of the Act, I extend you the opportunity to respond to the issues raised above including whether you accept the conclusions reached in the inspection report, and describe any corrective action you propose to take, or justification as to why no action is required.

The report also identified other areas where performance may be improved.

Please provide any submissions in response to the findings of the report within 28 days of the date of this letter. If you do not respond within this time, I may make a decision on the evidence available.

619 Lower Plenty Road, Yallambie VIC 3085
+61 3 9433 2211

38–40 Urunga Parade, Miranda NSW 2228
PO Box 655, Miranda 1490
+61 2 9541 8333

info@arpansa.gov.au
arpansa.gov.au

Yours sincerely

s22 [redacted]

A/g Chief Inspector

Encl. Inspection Report R17/03879

cc via email s22 [redacted]

Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

INSPECTION REPORT

Licence Holder: Department of Defence and Australian Defence Force (Defence)	**Licence Number:** F0213
Location inspected: Defence base in South Australia	**Date/s of inspection:** 28 March - 7 April 2017
	Report No: R17/03879

An inspection was conducted as part of ARPANSA's baseline inspection program to assess compliance with the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act), the Australian Radiation Protection and Nuclear Safety Regulations 1999 (the Regulations), and conditions of Facility Licence F0213.

The scope of the inspection included an assessment of Defence's performance in the following areas:

- Performance reporting and verification;
- Configuration management;
- Event protection;
- Radiation protection.

The inspection consisted of a review of records, interviews, and physical inspection of the facility.

Background

The facility houses legacy waste made up of unrepairable and obsolete equipment, instruments, repair parts and consumables containing low and intermediate level radioactive materials. The facility is closed and does not receive waste on a regular basis. Defence possess and control the facility in order to manage the waste produced by previous activities.

Defence has been reviewing their arrangements for managing the radioactive waste and examining how waste may be managed into the future. This has included the development of a variety of strategies to accommodate possible changes in the Australian Government's approach to radioactive waste management. One element of this strategic approach is the internal reallocation of responsibilities. It is expected that, in the near future, one group will manage all radioactive waste within Defence.

Observations

Performance reporting and verification

The RSO performs a quarterly review of the facility. A checklist is used to record the actions undertaken during these reviews. These activities include performing random checks to confirm that security devices are working correctly, observing any damage to the building or repairs that may be needed, through to inspections for cleanliness. This also includes counting the number of waste containers within the facility and taking dose rate measurements adjacent to a number of drums to confirm the radiation levels have not substantially changed. However, there is no map showing the location of each of the waste containers within the facility. Furthermore, while the RSO knows the areas of the facility that have elevated ambient dose rates these have not been mapped for others who may enter the facility. This

indicates inadequacies in the development of documentation.

Configuration management

Defence maintains this facility as an interim measure to manage radioactive waste until such time as a national waste facility is established. A building assessor routinely visits the facility and assesses whether the building is in need of any repairs. Photographic evidence is taken when any building works are performed or new systems installed. However, there is no systematic program to record the state of the building, and the waste containers within, over time.

The facility is surrounded by a fence. It was observed that since the last ARPANSA inspection, animal(s) have increasingly accessed this area and a kangaroo was actually within the compound at the time of the inspection. It is presumed that access to this area has been gained via a gap in the fence line that has developed due to erosion of the adjacent ground. It appears that the animal(s) are seeking comfort in the shade cast by the building. Although, animal droppings have washed under a metal roller door, there was no evidence to indicate that animals (either native or feral) have accessed the building itself. The checklist detailing the quarterly review of the facility does not require an assessment of evidence of animal entry into the facility or an assessment of possible avenues by which animals may enter the facility. This indicates inadequacies in the maintenance and operational oversight program used to confirm that safety margins are not degraded.

Radiation protection

Site access instructions describe the procedures and necessary arrangements (i.e. PPE) for accessing the store. This requires a building entry register be kept in order to record who has accessed the facility, and if possible, an estimate of the dose incurred while they were in the facility. The records of entry were reviewed. The doses recorded were significantly less than both the limits and the generic actions levels set by Defence for investigation into elevated doses. However, a prospective assessment of doses that are expected to be incurred at the facility over the course of a year had not been developed nor had a dose constraint to facilitate decision making been established. This indicates inadequacies in the planning associated with the management of the facility.

A safety analysis report (SAR) was prepared prior to the establishment of the facility. This was based on the framework established by the IAEA safety guides in existence at the time. Both of these documents have since been superseded and the SAR has not been updated. The SAR analysed a variety of external events that may impact on the safety of the facility. This analysis demonstrated that the facility could be operated in an acceptably safe manner. However, the personnel responsible for the facility no longer have knowledge of the operations at the base external to the facility. Therefore, they do not have access to the data that describes the potential initiating events that may challenge the analysis.

The site access instructions for the facility stipulate the necessary PPE requirements needed for access into the facility. On completion of work at the facility, this PPE is removed and placed into a dedicated drum near the doorway. Defence intends to screen this used PPE and if it is found to be below a certain level of contamination, dispose of the material in accordance with standard procedures for the base. This has not happened to date. The criterion used for establishing whether disposal of the used PPE can occur has been based on the radiological properties of s33 contained in guidance published by the European Commission. s33 within the store and the value used is based on bulk quantities of material such as would stem from demolition of a building.

The site access instruction indicates that doses to personnel entering the facility should be monitored. Electronic personal dosimeters (EPD) are available to do this although the instruction does not provide any guidance on suitable levels for dose and dose rate alarms to be set on the EPDs. The instruction

requires that a background radiation level survey is performed prior to entering the facility but does not provide any guidance on the radiation survey meter that should be used to perform these measurements or the expected dose rates.

As a condition of its licence, Defence is required to comply with the relevant sections of Australian Standard AS2243.4-1998 *Safety in laboratories Part 4: Ionizing radiations* (the Standard) for the radioactive waste storage facility. Clause 9.2 of the Standard requires that monitoring instruments be calibrated at annual intervals, however, the survey meter used by the RSO on the day of the inspection had not been calibrated within the last year. A second survey meter that had been calibrated within the last 12 months was located on the base but was not readily accessible.

Findings

The inspection revealed the following **potential non-compliance:**

A radiation survey meter had not been calibrated within the last 12 months in accordance with the Australian Standard AS 2243.1998 *Safety In Laboratories Part 4: Ionizing Radiations*.

The inspection also revealed the following **Areas For Improvement (AFI):**

AFI1 – Documentation

- The location of waste containers within the facility and the ambient dose rates around them is not adequately documented.
- The SAR has not been reviewed and updated.
- No internal guidance is available for use of EPDs and radiation survey meters at the facility.

AFI2 – Configuration Management

- There is no systematic program to monitor the state of the building and the waste containers within.
- There is no routine review of the facility for evidence of animal intrusion into the compound.

AFI3 – Radiation Protection

- There is no prospective assessment of operational doses or dose constraints established.
- The procedure for clearance of used PPE is out of date and needs to be reviewed.

It is expected that improvement actions be taken in a timely manner.

In response to any potential non-compliance, the licence holder must carry out its responsibilities under Regulation 45

THIS REPORT WILL BE PUBLISHED ON THE ARPANSA WEBSITE

Addendum *(to be removed before publishing)*

LICENCE HOLDER REPRESENTATIVES PRESENT DURING ALL OR PART OF THE INSPECTION

Name	Email Address	Position
s22 [redacted]		

LEAD INSPECTOR

NAME	SIGNATURE	DATE
s22 [redacted]		02/05/17

CHIEF INSPECTOR* OR DELEGATE

NAME	SIGNATURE	DATE
s22 [redacted]		2/05/17

*Chief Inspector to sign if potential-non-compliance is identified

JOINT LOGISTICS COMMAND
Logistics Assurance Branch

LAB/OUT/2017/116

Chief Inspector
Head of Regulatory Services
Australian Radiation Protection and Nuclear Safety Agency
PO Box 655
MIRANDA NSW 1490

DEFENCE RESPONSE TO KOOLYMILKA INSPECTION REPORT

1. Over the period 28-29 March 2017, ARPANSA Inspectors conducted an inspection of the Koolymilka Radioactive Waste Storage Facility (RWSF) (Facility Licence F0213) and a report of their findings was sent to Defence under cover of your letter R17/03885 of 02 May 2017. In that report, you noted that Defence may have failed to comply with Licence Condition 6 in that the radiation survey meter used by the Koolymilka Radiation Safety Officer (RSO) was not in-date for calibration and you extended to me the opportunity to comment before you make a determination.

2. The RSO for the Koolymilka RWSF normally resides in Adelaide; but keeps a maintenance kit on site at Woomera Emergency Services for use during inspections. That kit contains one of two radiation survey meters assigned to the Koolymilka site, with the other item held at the RSO's offices in Adelaide. This disposition allows for an in-date meter to be available on site and allows for the off-site meter to be sent for calibration. During his visits to the site, the RSO can then swap the meters around and bring the other meter back to Adelaide for its turn in the calibration cycle.

3. During the recent inspection of 28 Mar 17, this routine meter swap did not occur prior to the inspection as the RSO was late in getting to Woomera due to a serious motor vehicle accident en-route. Arriving after the inspection had commenced, and in the resulting confusion, the out-of-date meter was not swapped for the in-date meter that the RSO had with him; regrettably, it was then used for the pre-entry survey. It was not until after the inspection that the calibration status of the meter was ascertained by the RSO and reported to the Inspectors; had it been checked earlier, the entry procedure would have been delayed until a serviceable meter had been obtained. Therefore, the in-date meter remained in the RSO's hotel room back at Woomera and the swap was belatedly made after the inspection had been conducted.

4. Although Defence agrees that an out-of-date survey meter was used, there were mitigating circumstances. The measurements taken by the out-of-date meter were not used in a health-critical radiation safety situation. The readings taken were comparable with those taken in earlier entry procedures, being just above background. As a precaution, both meters were compared with a third meter and their readings were found to be within statistical agreement. Furthermore, the process used to swap the meters has a sound basis and, until this inspection, it has proven reliable. Finally, the motor vehicle accident involving the RSO is highly likely to have contributed to his state of mind on arrival at Woomera, which could account for his failure to swap the meters as is his usual conduct.

5. Under these circumstances, Defence requests that the non-compliance noted in the inspection not be found to breach the Act, or at the very most, that it be considered as a statistical breach only, given that the matter was self-reported, did not materially affect safety and has been quickly remedied.

s22 [redacted]
Executive Director Logistics Assurance
s22 [redacted]
PO Box 7913
Canberra BC ACT 2610
s22 [redacted]

30 May 2017

Australian Government
Australian Radiation Protection and Nuclear Safety Agency

arpansa

Ref: R17/05675

5 October 2017

s22
Executive Director, Logistics Assurance
Joint Logistics Command
s22
PO Box 7913
CANBERRA BC ACT 2610

Dear s22

Facility Licence F0213: Finding of breach under subsection 30(2) of the *Australian Radiation Protection and Nuclear Safety Act 1998* (the Act)

Decision

On the matter of the availability of calibrated survey meters when accessing the Koolymilka Radioactive Waste Storage Facility (RWSF) I find Department of Defence and Australian Defence Force (Defence) in breach of subsection 30(2) of the Act for failing to comply with licence condition 6 in Schedule 2 of F0213.

The issue

When originally considering the importance of the issue, the ARPANSA inspector identified three reasons where a radiation survey meter would be used when accessing the RWSF. There were:

1.) The measurement of the dose rate external to the building prior to entry. This is an indication that there has not been a substantial change to the material within the store since it was last accessed.

2.) The measurement of dose rates for protection purposes. This is an indication of the radiological hazard that personnel may be exposed to when appraising any degradation that may have occurred to the building, the safety/security systems and the drums holding the waste itself. I am advised that some of the areas within the facility contain substantial dose rates.

3.) The measurement of the dose rate at certain locations within the facility. This is an indication that the sources within the store have not been stolen.

Statement of reasons

As identified above, there were at least three reasons to perform radiation dose rate measurements when accessing the RWSF. As the measured values are used to obtain quantitative information a calibrated radiation monitoring instrument should have been used when accessing the RWSF. It is a requirement of Australian Standard *Safety in laboratories Part 4: Ionizing radiations* (AS 2243.4-1998) that a radiation monitoring instrument is calibrated at annual intervals. Compliance with this standard is a condition of F0213. Hence, this constitutes a breach of licence condition 6. Accordingly, I find Defence in breach of subsection 30(2) of the Act.

Other matters

I do not intend to pursue any formal enforcement action that may be available to me under the Act. However, under sections 59 and 60 of the Act I am required to report details of breaches in ARPANSA's report to the Minister and the Parliament. As you may be aware, ARPANSA has a graded approach to the reporting of breaches. The licence holder may either be specifically named, or alternatively, the matter may be reported as a statistic only, without identifying the licence holder. Since the Defence Radiation Safety Officer has acted cooperatively in resolving this non-compliance, I have determined that this matter will be reported as a statistic only.

For further information on the reporting of breaches see Regulatory Guide: Graded Response to Non-Compliance.

Yours sincerely

s22 [redacted]

Delegate of the CEO of ARPANSA

cc via email s22 [redacted]

LICENCE HOLDER QUARTERLY REPORT

FOR SOURCES AND PRESCRIBED RADIATION FACILITIES

To be completed after reading the REGULATORY GUIDE: Reporting Compliance

Licence No: F0213	**Licence Holder: Department of Defence**	**Facility or Division: Koolymilka Waste Storage Facility**
Reporting Period: 01-Jul-18 to 30-Sep-18		**Site/Location: Woomera, South Australia**
Person making this report (name/position): s22 [redacted] **– Koolymilka RSO**		

Matters to be reported	Y/N	Comments/Summary (Provide a summary in this column for matters with a 'Yes' response)
1 Were there any **accidents** during the quarter?	**N**	
2 Were there any **other incidents**/abnormal occurrences/near-misses?	**N**	
3 Were there any **unusual personal monitoring** results?	**N**	
4 Were there any **sources acquired** during the quarter?	**N**	
5 Were there any **sources disposed** of?	**N**	
6 Were any **sources transferred**?	**N**	
7 Have you made any **corrective actions, as a result of an ARPANSA inspection**?	**N**	
8 Were there any **relevant changes with significant implications for safety**?	**N**	
9 Were there **any relevant changes unlikely to have significant implications for safety**?	**N**	

10 Were **plans and arrangements reviewed**?	**N**	
11 Were there any **actions required by special licence conditions**?	**N**	
12 Were there any **breaches of licence conditions** identified?	**N**	
13 Do you wish to report **other matters**?	**Y**	Facility security upgrades ongoing.
14 Is the **Non-MILIS Tracked inventory** provided up to date and accurate?	**Y**	

NOTE: Where changes to the source inventory have occurred during the reporting period, a copy of the updated Source Inventory should be provided with the quarterly report.

DRSAC Nominee (name/position): Koolymilka RSO
Signature / Date: s22 [redacted]

KOOLYMILKA

Radioactive Waste Storage Facility

Emergency Response Plan

Issued by:
s22
Director, Defence Radiation Safety and Environment

Date of Issue: 01 Jun 18

Version 4.0

AMENDMENT SHEET

If you have any questions regarding this document or suggestions for improving this document, please contact:
Name: Koolymilka Radiation Safety Officer
s22 [redacted]

Issue	Description	Date	Authority
1	Original EIG Procedure	20 Mar 16	EIG-SA RSO
2	Transfer of responsibility to JLC-LAB-DRSE	29 Aug 17	CRSO (JLC)
3	Establishment of DRSE Management Control	08 Sep 17	DDRSE
4	1st Annual Update	01 Jun 18	DDRSE

EMERGENCY RESPONSE PLAN – KOOLYMILKA RWSF

1 Introduction

1.1 The Koolymilka Radioactive Waste Storage Facility (RWSF) is a prescribed radiation facility (PRF) licensed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to hold low level and intermediate level radioactive waste under facility licence F0213. The licence allows Defence to possess and control the facility but not to operate, hence it is classed as a closed facility, ie will not routinely accept new material. As a PRF, it has specific requirements for site access, physical security and emergency management.

2 Purpose

2.1 The purpose of this Emergency Response Plan (ERP) is to describe the response taken to control an emergency involving unauthorised access to, or loss of control of, the RWSF or its contents.

3 Emergency Scenarios

3.1 The types of emergency scenario that may affect the RWSF are as follows:

3.1.1 Fire, flood or storm event on the Woomera Test Range (WTR) that could damage the RWSF building structure

3.1.2 Civil protest activity in Woomera that may spill over onto the WTR or affect the delivery of services from Defence Support Woomera (DS-W)

3.1.3 Missile strike from WTR activity that could damage the RWSF building structure and cause contamination of the site if the drums were ruptured

3.1.4 Aircraft strike from the Woomera airfield that could damage the building structure and cause contamination of the site if the drums were ruptured

3.1.5 Terrorist activity aimed at accessing the facility for publicity purposes or for removing drums from the facility for use in a ‘dirty bomb’

4 Emergency Response within the WTR

4.1 In the event of a general emergency affecting the WTR, Woomera Emergency Services (WES) will attend immediately and provide Fire/Hazmat and Medical services as required. The Base Support Operations Manager (BSOM) will notify affected stakeholders including Defence Radiation Safety and Environment (DRSE) as the manager of the RWSF. Prompt notification will enable DRSE to quickly review the situation and its possible effects on the RWSF and therefore to be better prepared.

5 Emergency Response at the RWSF

5.1 In the event of a local emergency, which directly affects the RWSF (eg multiple security alarms triggered or the detection of spurious activity by observer on site), the emergency response will proceed as follows:

5.1.1 DRSE is to be advised as soon as possible, in order that it can notify the On Scene Commander (CO 20 SQN or D/SADFO depending on SAFEBASE Level) and provide specialist Radsafe advice to responders.

5.1.2 WTR Security Patrol will attend and reconnoitre the site for signs of entry, damage or spurious activity as follows:

5.1.2.1. If no outward signs of entry, damage or spurious activity are

seen, the patrol will contain the RWSF against further access (eg increase frequency of security patrols) and await the arrival of the DRSE Inspection team. Containment options are aimed at restoring an effective level of security for the RWSF s33 .

5.1.2.2. If entry to the building has been made or damage to the building has been found, the patrol is to protect the RWSF against further access/loss and await the arrival of the DRSE Inspection team. Protection options are aimed at establishing:

5.1.2.2.1. a radsafe barrier to prevent unauthorised entry to the RWSF until it has been rendered safe to approach; and

5.1.2.2.2. a physical security barrier to prevent the uncontrolled loss of material from the RWSF until the damage has been repaired.

6 Emergency Response Coordination and Communications

6.1 WES is to remain the first point of contact for the local reporting of emergencies involving the RWSF. The WES Duty Officer or BSOM is to notify personnel listed in the Emergency Contact Plan (Annex A) and seek their advice on further action. DRSE will inform the chain of command and ARPANSA of the emergency.

6.2 In the event of an emergency, DRSE will mobilise a response team s33 , within 24 hours, to provide Radsafe expertise to the Woomera Emergency Coordination Centre (ECC) and Radsafe services at the RWSF. DRSE must conduct a Radsafe survey and render safe any damage at the RWSF before allowing entry to non-Radsafe qualified personnel.

6.3 In the event of a security incident, the Koolymilka Source Security Site Plan is to be effected. DRSE-LAB-JLC will draft the Hot Issues Brief to inform MINDEF and maintain the communications link between Defence and ARPANSA.

7 Escalation Procedure

7.1 During SAFEBASE A/B/C, incidents are dealt with by the CO 20 SQN as On Scene Commander. In the event of escalation to SAFEBASE D/E, incident control shifts to the Deputy SADFO.

7.2 Incidents affecting the RWSF are scalable as follows:

7.2.1 **simple building or estate damage**, which requires a local response from WES and/or DS-W

7.2.2 **complex building or estate damage**, which requires a corporate response from DRSE and/or EIG

7.2.3 **source security incident**, which triggers anti-terrorism measures that require a national response

7.3 The responsibility for escalating an RWSF incident lies with DRSE-LAB. The decision to notify ARPANSA is a DRSE-LAB responsibility.

8 Radiation Safety

8.1 First responders are to isolate the RWSF and monitor the radiation levels from a safe distance until relieved by DRSE. An exclusion zone is to be established at the

RWSF building outer wall or at the s33 boundary, whichever is the greater. Pending the conduct of a radiation survey, the exclusion zone is to be set at the inner perimeter fence. No unauthorised personnel are to enter the exclusion zone and/or enter the building until DRSE or another trained response team is in attendance.

Annex:

A. Emergency Contact Plan – Koolymilka RWSF

ANNEX A TO
EMERGENCY RESPONSE PLAN

EMERGENCY CONTACT PLAN – KOOLYMILKA RWSF

Koolymilka Procedure - Internal

This 'cook book' provides a step-by-step procedure to arrange, conduct, and finalise a visit to the Koolymilka RWSF.

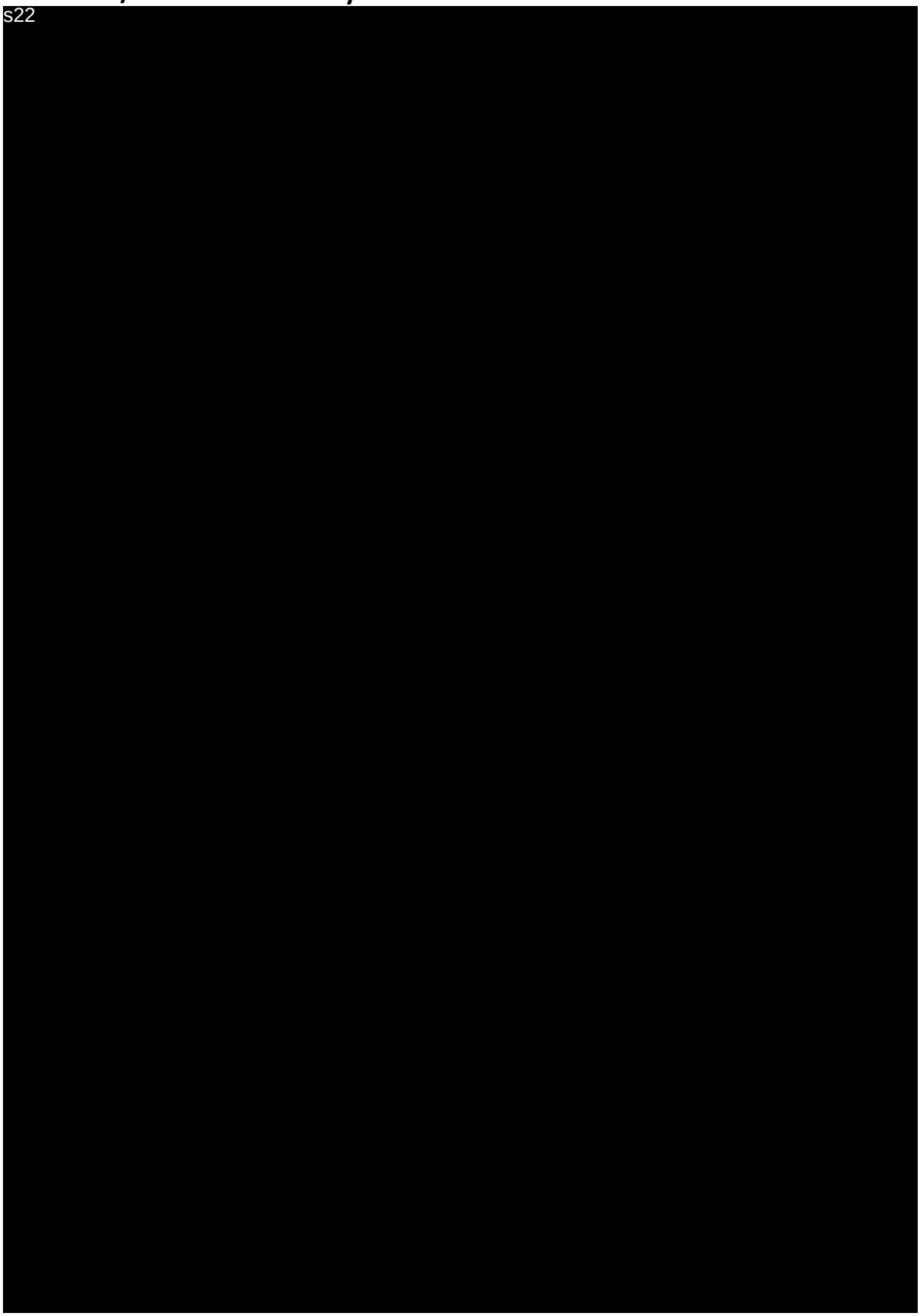
1. **Minimum 3 Weeks prior to anticipated day of arrival/visit** - Access Site Visit Procedure s22 [redacted]

   14 Days Lead Time Requested for range access approval.

2. Folder: 1. Induction and Range Request.
   a. Check Range Inducted Personnel spreadsheet to determine if person(s) visiting site has completed Woomera Test Range induction. Note that induction only valid for 12 months, re-induction as needed.
   b. If not inducted, person(s) must complete WRC Induction Questionnaire – FORM BLANK. Information and answers can be found in Woomera Test Range Induction Presentation.
   c. Update Range Inducted Personnel spreadsheet with details of any new inductees.
   d. Complete Range Visit Request and Range Visit Personnel Form.
   e. Attach these forms, and any necessary induction forms, and email to:
      s22 [redacted]
      File copy of email in folder Range Access Correspondence
      Once approval granted, file email in folder Range Access Correspondence

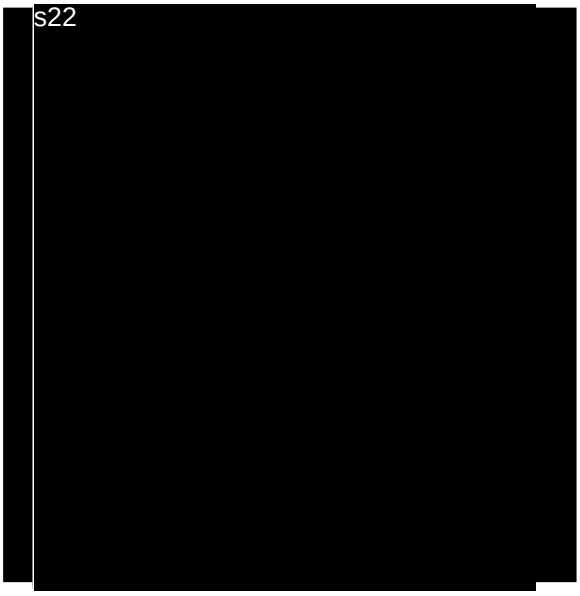
3. **Gear/Kit to take to Koolymilka:**

s22



Physical Entry:

s22 [redacted]



9. Turn lights on and open internal wooden doors to ventilate.
10. Exit the building to conduct outside activities as part of normal entry requirements. This will allow for adequate ventilation of the drum hall.

s22 [redacted] **to give Visitors Safety Brief to all persons BEFORE anyone else enters the building.**

Visitor's brief to be read by all visitors. s22 [redacted]

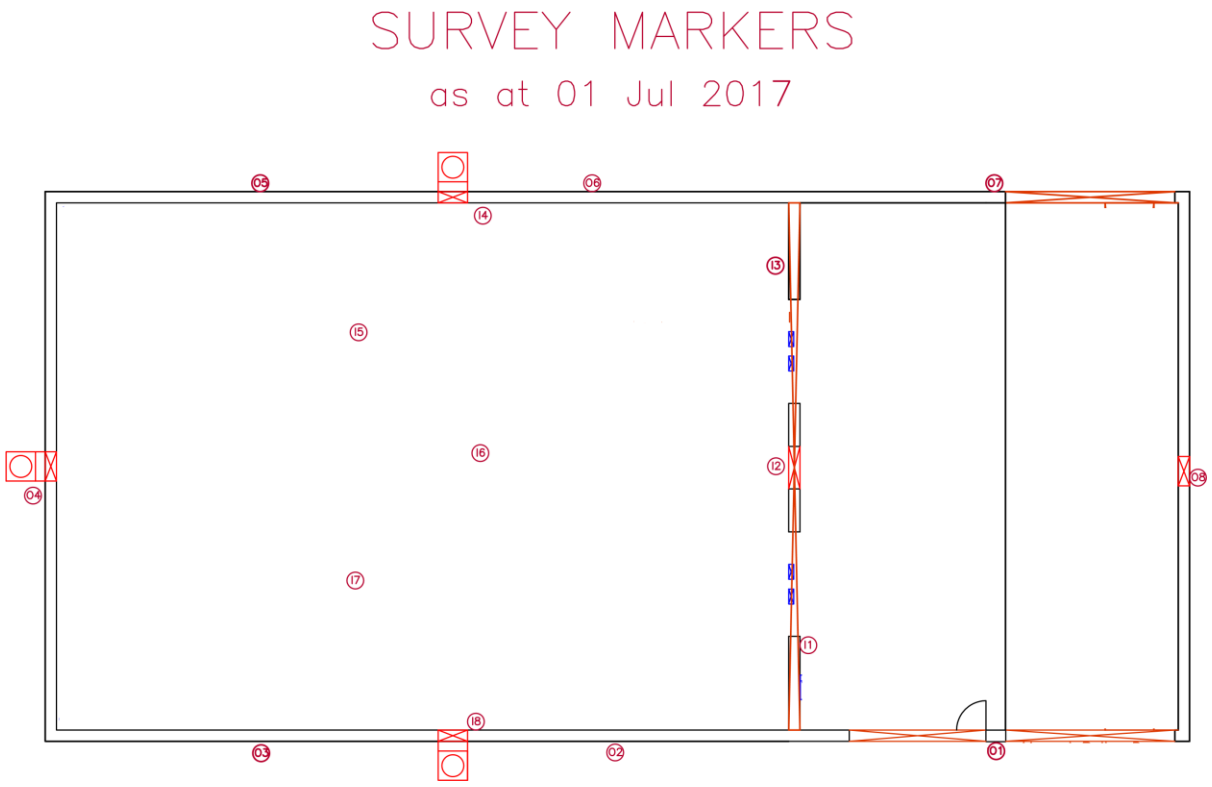
Brief to be acknowledged by signing of Site Entry Register form (Annex A).

Normal Inspection Routine:

11. Using the s22 , take background reading and record on:
KOOLYMILKA RWSF RADHAZ SURVEY RECORD SHEET (Annex B)

s22

12. Conduct outside survey of designated radiation measure points and record on same sheet. Hold meter against wall on maker points.



Before entering drum hall, all persons to put PPE on.
PPE to wear: Boot covers, gloves and dust mask.

13. Conduct inside survey of designated radiation measure points on same sheet.
Hold meter at waist height for three maker points in middle of drum hall, all others against wall on maker points.

Normal Inspection Routine cont.:

14. Conduct survey of Security enhanced sources. Measure points are marked on the four drums to be surveyed.
15. Results to be recorded on Sealed Source Inventory Check Register (Annex C).

s33 [redacted]

16. Complete Quarterly Review Checklist (Annex D).

Exit Procedure:

17. Once all routine duties and checklists have been completed, dispose of all PPE in drum marked ‘Used PPE’ located in the ante-room.
18. Close wooden doors and have all persons exit the building.
19. RSO or DRSE Rep to arm alarm before exit.

s33 [redacted]

Exit the building. Close small door behind.

s22 [redacted]

If not all ‘armed’, wait 5-10 minutes and call again to confirm. If still not armed, may require entry to building to reset alarm.

If all ‘armed’, leave site and lock gate behind.

20. Return keys to s22 [redacted] when leaving Woomera Test Range.

KOOLYMILKA

Radioactive Waste Storage Facility

Quarterly Review

Issued by:
s22
Director, Defence Radiation Safety and Environment

Date of Issue: 01 Jun 18

Version 4.0

AMENDMENT SHEET

If you have any questions regarding this document or suggestions for improving this document, please contact:

s22 [redacted]

Issue	Description	Date	Authority
1	Original EIG Procedure	20 Mar 16	EIG-SA RSO
2	Transfer of responsibility to JLC-LAB-DRSE	29 Aug 17	CRSO (JLC)
3	Establishment of DRSE Management Control	08 Sep 17	DDRSE
4	1st Annual Update	01 Jun 18	DDRSE

KOOLYMILKA RADIOACTIVE WASTE FACILITY QUARTERLY REVIEW

1 Introduction

1.1 The Koolymilka Radioactive Waste Storage Facility (RWSF) is a prescribed radiation facility (PRF) licensed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to hold low level and intermediate level radioactive waste under facility licence F0213. The licence allows Defence to possess and control the facility but not to operate, hence it is classed as a closed facility, ie will not routinely accept new material. As a PRF, it has specific requirements for site access, physical security and emergency management.

2 Purpose

2.1 The purpose of this Quarterly Review Checklist is to detail and record the actions required by the LAB/DRSE staff during the Quarterly Assurance Inspection of the Koolymilka RWSF to meet the ARPANSA Licence requirements for the facility.

3 Access Requirements

3.1 All access to Koolymilka RWSF is to be authorised by DRSE and organised through the Koolymilka Radiation Safety Officer (RSO). Entry procedures are to be in accordance with the Koolymilka Site Access Instructions.

3.2 The inspection should occur in the last month of the quarter to allow for preparation of the quarterly report for that quarter. Where operational or other requirements exist, the timings may be varied to suit.

3.3 A copy of the completed checklist must be provided as an enclosure to the Licence Holder Quarterly Report.

4 Checklist

4.1 A copy of the checklist is attached at **Annex A**.

Annex:

A. Quarterly Review Checklist

Annex A to
Quarterly Review

Quarterly Review Checklist		
Srl	**Action**	**Comment**
1	Conduct check of the main gate and its padlock; assess the condition of the perimeter fence for evidence of tampering or damage; and check for the presence of animals in the compound	
2	Inform s22 [redacted] of imminent entry to the RWSF; disarm the security panel; check condition of foyer and doors for evidence of tampering or damage	
3	Undertake external radiation survey and compare against previous quarter and note any significant changes	
4	Conduct an inventory comparison by checking current layout against the standard photographic record (from previous inspection)	
5	Conduct a quick condition assessment of the drums, checking for discolouration, dents or swelling, and seepage into the bunding	
6	Complete the Sealed Source Inventory Check Register IAW SSSP	
7	Inspect the cleanliness of the store and sweep if required	.
8	Check for any damage and/or repairs; action as required	
9	Take a photographic record of the drum layout on exit from the RWSF	
10	Resecure the store IAW the Site Access Instructions	

RSO Comments:

Signature:

Name:

Date:

KOOLYMILKA

Radioactive Waste Storage Facility

Routine Security Response Plan

Issued by:
s22
Director, Defence Radiation Safety and Environment

Date of Issue: 01 Jun 18

Version 4.0

AMENDMENT SHEET

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ROUTINE SECURITY RESPONSE PLAN – KOOLYMILKA RWSF

1 Introduction

1.1 The Koolymilka Radioactive Waste Storage Facility (RWSF) is a prescribed radiation facility (PRF) licensed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to hold low level and intermediate level radioactive waste under facility licence F0213. The licence allows Defence to possess and control the facility but not to operate, hence it is classed as a closed facility, ie will not routinely accept new material. As a PRF, it has specific requirements for site access, physical security and emergency management.

2 Purpose

2.1 The purpose of this Security Response Plan is to describe the routine security procedures and the actions to be taken in response to an alarm activation at the RWSF.

3 Site Access

3.1 The RWSF comprises of a foyer and a drum hall with access conditions as follows:

3.1.1. s33 [redacted]

3.1.2. s33 [redacted]

3.2 Furthermore, it is a requirement of the Source Security Policy that access to the RWSF compound is restricted to those authorised LAB/DRSE RSO personnel that administer the facility as well as those personnel that are operating under the terms of this procedure, with a demonstrated need for access.

4 Routine Physical Security Inspection

4.1 A routine physical security inspection is to be conducted during the quarterly facility inspection, as an adjunct to electronic monitoring of the building. The timing of the inspection is to be varied so as not to be predictable. Any abnormalities are to be reported to the Director DRSE.

4.2 s33 [redacted] visually inspect all sides of the building to ensure that no forced entry, act of vandalism, or other damage has occurred.

4.3 In addition to the normal security reporting procedures, the CRSO is to be notified immediately on s22 [redacted] (24/7) should the RWSF be found to have been breached or otherwise damaged.

5 Security Alarm Monitoring

5.1 s33 [redacted] The console operator is to notify DRSE of any alarm activation via the telephone numbers that are listed in the Alarm Response Instruction (ARI) at Annex A. The ARI provides DRSE telephone details for both business hours and out of hours contact. The locations and types of sensor covering each sector of the building are described at Annex B.

5.2 As the first authority to be notified by the DSMC, DRSE's role is to evaluate the situation and request on-site follow-up through either the BSOM or the CO 20 SQN acting as the Deputy SADFO. DRSE will then coordinate further action as it arises.

s33 [redacted]

7 Radiation Safety Requirements

s33 [redacted]

7.2 Because of the short time duration spent by contractor or other personnel in the vicinity of the building whilst conducting external facilities works, any dose received will be consistent with typical background exposure and is not considered occupationally significant. Furthermore, there will not be a significant increase in dose above background arising from action taken service/maintain the alarm panel in the foyer.

7.3 Personnel responding to an alarm may further reduce their dose through application of the principles of radiation protection, as follows:

7.3.1. **Time** – minimise the time you spend in the vicinity of the radioactive material – don't loiter around radiation sources;

7.3.2. **Distance** – maximise the distance between you and the radioactive material – get as close to the building as you can to do your job but no closer; and

7.3.3. **Shielding** – try to keep a wall between you and the radioactive material where you can.

Annex:

A. Alarm Response Instruction

B. Sensor Layout

~~RESTRICTED~~

Australian Government
Department of Defence
Defence Support Group

Defence Support South Australia

Base/Site Details:	**WOOMERA E-RANGE**	**Points:**	
Unit Details:	**DRSE-LAB-JLC**	**If need to determine point s contact**	
Building No:	**1098/E0104**	s22	**o arrange a test**

Alarm/Armoury Response (Call Out) Details

On alarm activation the s22 shall respond immediately by contacting a Unit Contact to discuss the situation.

s22

For systems that cannot be reset by the s22, a Contact may be required to attend the site.

SA Police - During business hours Police will only be called when an alarm is genuine. After hours, Police will be contacted for any alarm once the Unit Contact provides an ETA at site to the s22 Police will expect to meet the Contact at the entrance to the Site.

Personnel Authorised to Access Secure Buildings (eg Armouries or Vaults)

Security System must be put into Access by s22 before entering the area.

Authorised Personnel:

s22

Note: Unit is responsible to determine if s22. Authorised Personnel are encouraged to contact the s22 prior to entering and upon leaving the controlled area/building to minimise false alarm responses.

Voice Code Requirement: s22 *[Use drop down list to choose]*

Email code to s22 (if Personal, each member needs to email their own Code) [RESTRICTED email]

Telephone Extn Nearest the Alarm Panel : **Mobile only**

Unit Security Officer or Site Contact providing certification that the information meets the security requirements of this building.

Name: s22 Date: **01 Jun 18** Phone: s22

E-mail Completed Form to: s22

DS-SA Internal Action: Information provided via DRN – Date of email:

Systems Updated: Temporary : Proper: (PrivOp)

KOOLYMILKA

Radioactive Waste Storage Facility

Site Access Instructions

Issued by:
s22
Director, Defence Radiation Safety and Environment

Date of Issue: 01 Jun 18

Version 4.0

AMENDMENT SHEET

If you have any questions regarding this document or suggestions for improving this document, please contact:

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SITE ACCESS INSTRUCTION – KOOLYMILKA RWSF

1 Introduction

1.1 The Koolymilka Radioactive Waste Storage Facility (RWSF) is a prescribed radiation facility (PRF) licensed by the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) to hold low level and intermediate level radioactive waste under facility licence F0213. The licence, which was first issued on 22 Dec 09, allows Defence to possess and control the facility but not to operate, hence it is classed as a closed facility, ie will not routinely accept new material. As a PRF, it has specific requirements for site access, physical security and emergency management.

1.2 This instruction applies to RWSF staff that are either qualified as a Radiation Safety Officer (RSO) or trained as an Occupationally Exposed Radiation Worker (OERW). Otherwise, visitors to the RWSF must be accompanied by a qualified RSO and must act under their instruction whilst on site.

1.3 Access to the RWSF is to be authorised by DRSE. Any person visiting the RWSF is to given a Radsafe brief and must be wearing the required Personal Protective Equipment (PPE) prior to entry. Security contract personnel accessing the foyer to service/maintain the alarm panel are exempted from this requirement due to their short duration on task and the reduced risk that their task involves.

2 Purpose

2.1 The purpose of this Site Access Instruction is to describe the procedures to access the RWSF building on routine occasions.

GENERAL ACCESS REQUIREMENTS

3 Organisational Requirements

3.1 **WTR Range Access**. As the RWSF lies inside the Woomera Prohibited Area (WPA), which is a live missile firing range, any routine visit to the site must first be cleared through the Woomera Test Range (WTR) in order to check for incompatible operations. Approval is sought using a Range Visit Request, which is submitted to the s22 [redacted] via email, together with a list of personnel. Approval must be sought a minimum of 14 days in advance.

3.2 **RAAF Base Woomera Access**. DRSE has a periodic arrangement with the Base Support Operations Manager (BSOM) at Woomera for access to desk space within the common office area in the Defence Support-Woomera building. Security access to the building will also be granted for the duration of the visit. Confirmation of desk space and security access is to be sought via email directly with the BSOM.

3.3 **Contractor Access**. Access to the RWSF is periodically granted to certain contractors for the conduct of periodic maintenance, including s22 [redacted] DRSE approval is required for any maintenance required inside the building, as this level of access will require an escort.

s22 [redacted]

s22 [redacted]

3.5 **RWSF Entry Pack**. An entry pack containing the RWSF plans and arrangements, a survey meter, spare dosimeters, PPE and ancillaries is kept by the Koolymilka RSO. The Koolymilka RSO is to monitor its contents against the approved holdings for the RWSF Entry Pack at **Annex A** and ensure that PPE stocks are maintained at sufficient levels. The entry pack is to be brought out to the RWSF on each occasion that it is accessed.

4 Radiation Safety Requirements

4.1 **Personal Protective Equipment**. Any person entering the RWSF is to wear the PPE ensemble prescribed in this instruction. This ensemble is designed to provide effective protection for routine, short-term inspection activities, whilst being able to be escalated to protect against dust generated by house-keeping activities. s33 [redacted] A ready-use supply of PPE is held in the RWSF Entry Bag. Minimum PPE requirements are as follows:

4.1.1 disposable shoe covers, disposable gloves and disposable dust mask (for general inspection activities only); and

4.1.2 disposable overalls (when conducting house-keeping activities that will generate dust); and

4.1.3 safety glasses (when opening containers).

4.2 **Radhaz Survey**. The status of the ionising radiation hazard (Radhaz) area must be determined prior to entry via a Radhaz survey. The survey is to be conducted by a qualified RSO using an appropriate gamma survey meter. The RWSF survey meter is held in the RWSF Entry Bag. To ensure consistency in readings, a series of eight external and eight internal survey points have been established, each marked by labelled steel plate attached to the wall or floor. A diagram showing the locations of the markers and indicative dose rates is attached at **Annex B**. The readings are to be measured with the survey meter held either against the wall adjacent the plate (for wall-mounted plate), or at waist height above the plate (for floor-mounted plate) and recorded on the Radhaz Survey Record attached at **Annex C**.

4.3 **Personal Dosimetry**. Before entering the Radhaz area, personnel must have access to an appropriate personal dosimeter. In the case of RWSF staff, they are to wear either their own personal dosimeter or use one of the RWSF electronic personnel dosimeters (EPD) held in the RWSF Entry Bag. Unless a visitor has their own personal dosimeter, they are to use an RWSF EPD or remain with and be covered by the EPD worn by the Lead RSO.

4.4 **Hygiene**. Because of hygiene requirements relating to the storage of radioactive material, and the possibility of contamination, there is a prohibition on smoking, eating and drinking within RWSF.

4.5 **Radiation Risk**. Radiation dose rates outside Koolymilka WSF are consistent with the natural background level of the area and do not represent a radiological hazard to workers or members of the public. Providing that routine housekeeping and maintenance duties (ie weed, vegetation control) on the outside of the building are undertaken with normal OHS precautions, then further precautions against ionising

radiation exposure are unnecessary.

4.6 **Approval for Maintenance Work**. Prolonged activities inside the building (such as roofing and electrical repairs, security maintenance, etc) may only be undertaken with the approval of DRSE and supervision of the Koolymilka RSO, but only after a Radsafe risk assessment has been conducted.

4.7 **Entry Register**. The personal details of all staff and visitors accessing the RWSF are to be placed in the Entry Register, together with the date, duration and purpose of the visit and their total radiation dose. The Entry Register is held in the Safety Folder with the RWSF Entry Bag.

5 RWSF Waste Operations

5.1 The RWSF Inventory is attached at **Annex D** and the s33 No additional waste material is permitted to be stored within the Koolymilka RWSF or added to inventory without authorisation by DRSE and the prior approval of CEO ARPANSA under Regulation 51 (Licence Condition 8 refers). There is not to be any movement or re-configuration of waste drums without DRSE authorisation.

5.2 No material is to be removed from the building without the approval of DRSE. This includes materials such as building waste or used disposable PPE.

5.3 Any incident or accident within the RWSF is to be reported to DRSE via the Koolymilka RSO as soon as practicable.

ROUTINE ACCESS PROCEDURE

6 Routine Entry Procedure

6.1 **Physical Security Check**. On arrival at the RWSF compound, the perimeter fence, gate and padlock are to be checked for serviceability. A detailed inspection is then to be made of the external condition of the RWSF building, entry doors and locks. Any defects, including those found subsequent to building entry, are to be noted for the attention of the BSOM.

6.2 **Safety Brief**. In preparation for entry, the Lead RSO is to conduct a safety brief and issue the other personnel with their PPE. A copy of the safety brief is attached at **Annex F**. Particular attention is to be paid to the correct setup of EPDs especially the resetting of their total dose registers; once issued, EPDs are not to be switched off until ready to leave the site. All personnel are to sign the Entry Register, acknowledge their safety brief and confirm their EPD starting dose.

6.3 **Opening Procedure**. Before entering the RWSF, the Lead RSO is to contact the s22 and advise them of the upcoming entry and its expected duration. Having donned PPE, the Lead RSO will unlock the door, open the building, disarm the security alarm control panel and clear any outstanding alarms. Once the internal doors have been opened to facilitate venting, a radiation dose survey is to be conducted; the Lead RSO is to commence with the external survey, allowing time for the drum hall to vent before conducting the internal survey.

6.4 **Entry to the RWSF**. Providing the dose survey results are satisfactory, personnel wearing PPE may then enter the RWSF and conduct their authorised activities. All personnel are to conduct their business in an expedient manner and vacate the building as soon as practicable.

7 Routine Exit Procedure

7.1 **Exit from the RWSF**. As each person finishes their work for the day, they are to remove their disposable PPE, place it in the used PPE drum located in the foyer and exit the building. No used PPE is to be removed from the RWSF unless it has been cleared by a contamination survey and approved by DRSE.

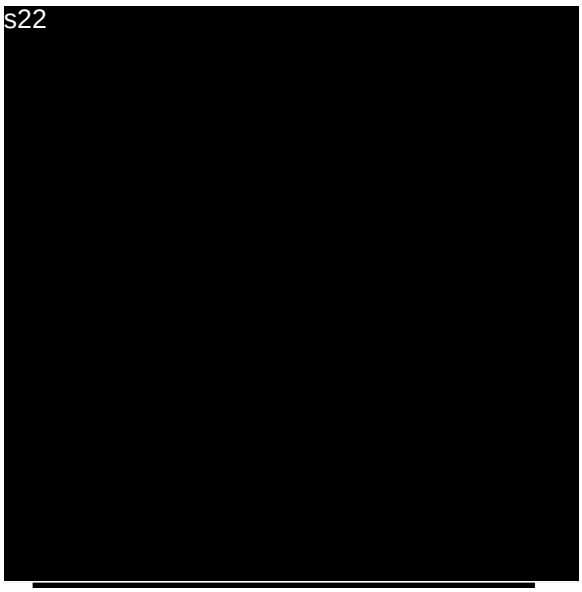
7.2 **Closing Procedure**. When all work has concluded, the Lead RSO is to close the inner doors and ensure that they are properly secured. The building lighting is controlled by an automatic timer, which will switch-off once all activity in the building has ceased. After all personnel and equipment are clear, the Lead RSO is to re-arm the security panel and exit the building. Once clear of the building, the Lead RSO is to contact the s22 and confirm that the panel is re-armed and active. The Lead RSO is to ensure that all EPD total dose readings are recorded on the Entry Register before they are reset.

SECURITY ALARM CONTROL PANEL INSTRUCTIONS

8 General Description

s22

s22



s22

s22 [redacted]

10 Rearm Panel Upon Exit

10.1 Ensure that the inner doors have been properly secured as a misaligned reed switch will generate an alarm code upon rearming.

s22 [redacted]

Annexes:

A. Koolymilka RWSF – Entry Pack

B. Koolymilka RWSF – Radhaz Survey Plan

C. Koolymilka RWSF – Radhaz Survey Record

s22 [redacted]

s33 [redacted]

F. Koolymilka RWSF – Safety Brief

ANNEX A TO
SITE ACCESS INSTRUCTIONS

KOOLYMILKA RWSF ENTRY PACK

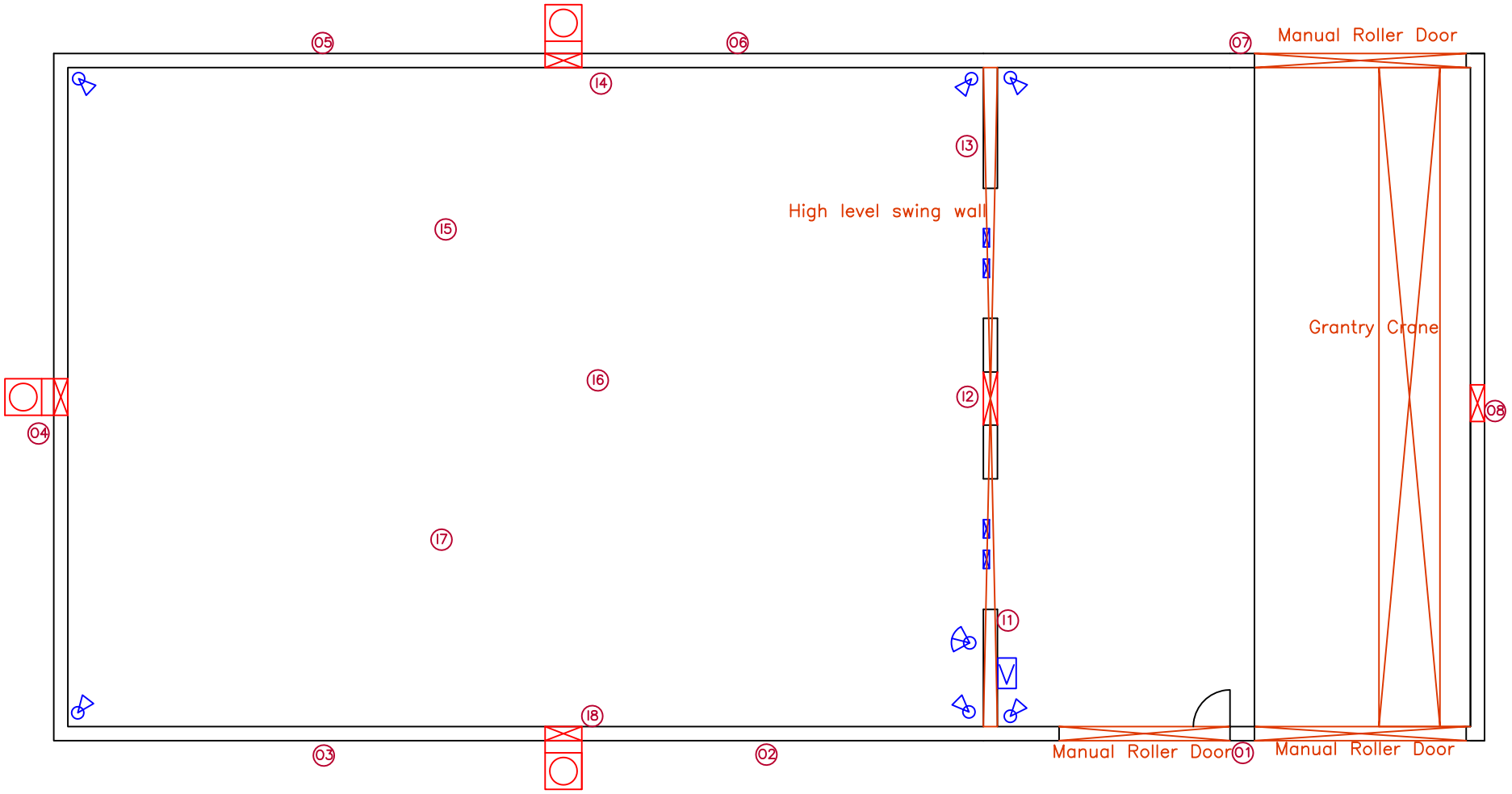
The Koolymilka RWSF Entry Pack contains all necessary documentation, Radhaz survey and dosimetry equipment, and PPE to facilitate safe access to the RWSF in accordance with these instructions. It is to be maintained at the following minimum levels:

Item	Minimum Qty
Koolymilka Plans and Arrangements	1 Set
Isotrak Personal Dosimeters	2
s22 [redacted]	
Disposable P2 rated dust masks	4
Disposable over shoes	1 Box
Disposable Nitrile Gloves	1 Box
Disposable coveralls	4
Safety Glasses	2
Garbage Bags	4

ANNEX B TO
SITE ACCESS INSTRUCTIONS

SURVEY MARKERS

as at 01 Jul 2017



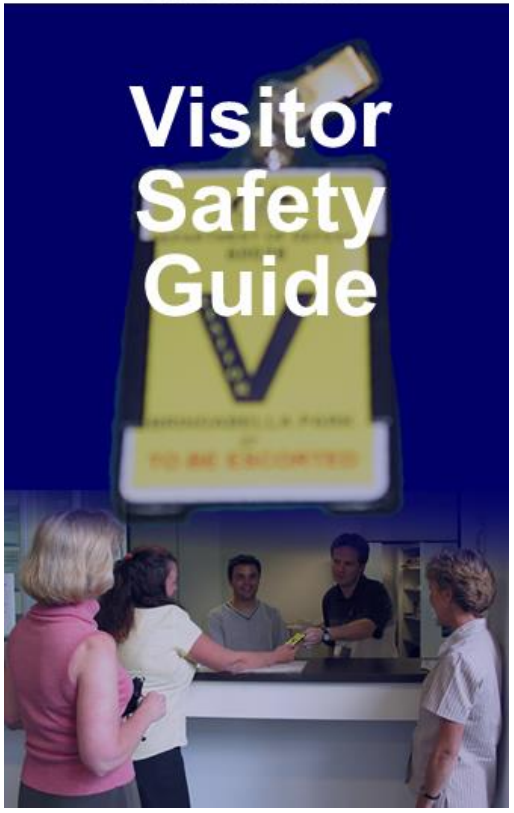
ANNEX C TO
SITE ACCESS INSTRUCTIONS

KOOLYMILKA RWSF RADHAZ SURVEY RECORD SHEET

This Radhaz Survey Record is to be completed as part of the routine entry procedure. On occasions when the drum layout has been altered, this survey is to be repeated as part of the exit procedure.

Date	**Time**	**Survey Mark Identification** (dose rate in µSv/h)															**Name**	**Signature**
		O1	**O2**	**O3**	**O4**	**O5**	**O6**	**O7**	**O8**	**I1**	**I2**	**I3**	**I4**	**I5**	**I6**	**I7**	**I8**	

Australian Government
Department of Defence



KOOLYMILKA RADIOACTIVE WASTE STORAGE FACILITY ARPANSA LIC No. F0213

KOOLYMILKA RADIOACTIVE WASTE STORAGE FACILITY VISITORS SAFETY GUIDE

s33 [redacted]

For further Assistance Contact:
Defence Radiation Safety & Environment
s22 [redacted]

1. Introduction

DRSE recognises and accepts that they have an obligation, under the Work Health & Safety Act 2011, to provide a healthy and safe working environment for its employees, (military, civilian, contractors, reservists, ASCS cadets and members of the public).

This obligation also extends to visitors who enter the Radioactive Waste Storage Facility (RWSF).

Similarly, **all** individuals who enter the RWSF have a duty to act safely.

2. Visitor Responsibilities

Safety requires your cooperation. For this reason **all** visitors shall:

- ✓ abide by the Defence and the RWSF health and safety rules and procedures;
- ✓ obey all safety directions given by the Koolymilka Radiation Safety Officer (RSO) or their nominated representative present;
- ✓ do not enter the RWSF until directed by the Koolymilka RSO or their nominated representative;
- ✓ immediately report any hazard or hazardous condition to the Koolymilka RSO or their nominated representative;
- ✓ report all accidents/incidents to the Koolymilka RSO or their nominated representative;
- ✗ not enter any restricted/designated area without authorisation;
- ✗ not bring into or consume alcohol/illegal drugs or food at the RWSF;
- ✗ not wilfully or recklessly interfere with any RWSF property or equipment.
- ✓ acknowledge that they understand the RWSF Safety Brief presented by the Koolymilka RSO or their nominated representative.

3. Fire/Emergency

All fire/emergency incidents must be reported immediately to the Koolymilka RSO or their nominated representative. If emergency assistance is required, s22 [redacted] s22 [redacted]

In the case of an evacuation, follow the direction of the Koolymilka RSO or their nominated representative and proceed immediately to the nearest fire exit and vacate the building. Assemble at the designated areas.

4. First Aid

First Aid Officers are available should you require attention.
For Injury Emergencies contact the s22 [redacted] s22 [redacted]

5. Smoking

Smoking is not permitted within the RWSF.

6. Personal Protective Equipment (PPE)

Appropriate clothing is to be worn when visiting the RWSF. The Koolymilka RSO or their nominated representative shall advise of any special clothing requirements.

Where necessary, the Koolymilka RSO or their nominated representative will provide the appropriate PPE. Visitors are required to wear this PPE as directed.

7. General

All operations within the RWSF are performed IAW the “As Low As Reasonably Achievable” (**ALARA**) principle. Entry to the RWSF does not present a significant hazard to visitors provided all directions given by the Koolymilka RSO or their nominated representative are adhered to. If unsure please ask.