



Only complete this form if you answer 'Yes' to all 3 questions:

		YES	NO
Q1.	Is the proposed change a relevant change as defined in the Regulations, that is, a change to the details in your licence application or to the source or facility?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Q2.	Have you completed a risk assessment on the planning and implementation of the proposed change? For proposed changes to facilities, the <a href="#">Regulatory Assessment Criteria for the Design of New Controlled Facilities and Modifications to Existing Facilities</a> is applicable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Q3.	Has your assessment shown that the proposed change is significant according to the <a href="#">REGULATORY GUIDE: How to determine when a change has significant implications for safety - Regulation 51</a> ?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

## REQUEST FOR APPROVAL

*Making a change which has significant implications for safety*

Licence holder	CSIRO
Licence number:	S0013 Business and Infrastructure Services
Name and position of person making the request	Jen Baxter, Project Manager with the support of Jeff Sheridan, RSO
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Date of request:	22 October 2018

### Part 1 What change are you proposing to make?

As part of CSIRO’s shifted focus towards the management of the radioactive waste holdings at Woomera, CSIRO has scoped out a Manage – Monitor – Inspect - Contain (MMIC) strategy. As part of this strategy, CSIRO is planning to conduct a second site visit to undertake elements of the Monitor and Inspect plans.

As part of this second activity, CSIRO is planning to undertake the following:

- Repair and replacement as necessary of the roller system on doors which provide access to the waste holding.
- Further robotic inspection trials to test improved robotic capability and undertake assessments of the physical condition of the drums, generate an activity map, and other non-invasive inspection capabilities

### Part 2 Why are you making the change?

CSIRO needs to undertake a range of non-invasive inspections to better understand the nature and condition of the drums and their contents with a view to ultimately separating, processing and conditioning contents for eventual receipt at a national waste facility.



### **Part 3 How will you control the change while it is taking place (i.e. describe the change management processes)?**

Specific details of the field trip are outlined below:

#### **Door repairs**

This work will be undertaken by McMahons in advance of the field work commencing. McMahons have recently conducted concrete construction work on the site under supervision by Jacobs and completed all the necessary safety induction and briefings.

McMahons have an extensive safety management approach which applies to the site generally, and the specific activities they will be undertaking. McMahons personnel will be working on the exterior of the waste holding, not entering it. Measurements taken in May 2018 confirm no risk to worker health and safety from radiation in this area.

#### **Pre-Activity**

The robotics personnel were briefed on the site and specific hanger annex access safety elements in advance of arriving at the site for their first field trip. Pre-activity briefings will be undertaken in conjunction with Defence personnel on site on the first day.

The primary health and safety concerns are environmentally based, with wind and sun exposure being the major points. Access to fresh drinking water, sun protection and adequate rest away from the prevailing winds are key elements in managing the wellbeing of all personnel. It is not expected that any personnel will receive a measurable dose during the activity.

Whilst on the range, all personnel will be supervised by a Defence authorised person (holding a current Defence Access Pass with escort privileges) and comply with Defence range access requirements.

#### **Robotic Inspection Trial**

The robots have been designed to fit between the pallet tine entry points or on top of the waste holding and are tethered. The tethering system also has a backup attachment designed to retrieve a robot in the event it becomes stuck or fails for some reason. During operation the staff not expected to receive any measurable dose. The only safety precautions relate to the potential event of a toppling drum and the collapse of a drum or pallet stack. During the first field trip testing of the equipment post-trial indicated no contamination of equipment took place.

During operations, particularly any retrieval activity, all personnel will be at a safe distance from the pallet stacks in the event of toppling. A spill response kit is available in the event of a drum spill.

A small decontamination control area will be established adjacent to the hanger annex 1 to allow for equipment maintenance, contamination monitoring etc. The robotic equipment will be regularly monitored for contamination and cleared prior to removal from the contamination control area. The equipment shall be cleaned before departing the site. Any contamination identified will be recorded and a sample taken for further analysis prior to decontamination. Appropriate personnel precautions (gloves, safety glasses, breathing mask) will apply for all equipment handling until cleared of contamination. Suitable dose and contamination monitoring equipment will be available.



This activity is led by CSIRO's Data-61 robotic team in conjunction with ANSTO.

### **Radon Monitoring**

In addition to the active and passive monitors installed during the first visit, additional real-time radon monitors will be installed in the Annex. In addition, the passive (track-etch) monitors deployed during the first visit will be retrieved and replaced by fresh monitors. This work will be conducted by Radiation Detection Systems (RDS), under Jacobs Supervision.

## **Part 4 How will ongoing safety and security be maintained once the change has been completed?**

### **a) Effective Control**

The site itself is under the physical control of the Department of Defence, and Defence-Authorised persons will supervise all personnel present on the Range.

Whilst the activity is under the control of the principal contractor CH2M/Jacobs, all activities with the Hanger-Annex doors open will be under the supervision of individuals with substantial radiation experience and training, and familiarity with the site and its history. (Michael Leviton and Liam Gooley of Jacobs)

### **b) Safety Management Plan**

The safety management of the activities will be overseen by CH2M/Jacobs safety. A Field Trip plan which covers the robotics team's activities has been developed. Each entity working on site is required to submit work health and safety plans(WHSP) and SWMS, as is required by WHS Regulations. In that regard:

- McMahon has a WHSP and SWMS for their doo repair work on site, reviewed by Jacobs
- Jacobs has a WHSP and SWMS for their supervision on site
- CSIRO and ANSTO personnel have SWMS for their work on site and a Field Trip plan
- RDS will work under Jacobs WHSP and SWMS

### **c) Radiation Protection Plan**

The Radiation Protection Plan for CSIRO Source licence S0013 relates to the storage location on the Woomera Protected Area, and is currently being updated. A self-contained decontamination shower has been installed at the site and will be full of water and powered during the field activities.

### **d) Radioactive Waste Management Plan**

There is no change to existing waste management protocols as documented in the CSIRO Radiation Safety Procedure and associated documentation.

### **e) Security Plan**

Not Applicable

### **f) Emergency Plan**



The Site Emergency Plan for Woomera covers elements of dealing with local emergencies. The CH2M/Jacobs safety management plan will cover aspects relating to the relevant project tasks being undertaken.

A spill kit is available. In the event of a drum toppling from the holding and its contents spilling, appropriate PPE will be worn to shovel contents into a new drum with residue vacuumed up with a HEPA-filtered vacuum. The responsible CSIRO RSO will immediately be notified along with relevant Defence personnel.

## **Part 5 How will the change affect the matters that were previously considered when granting a licence?**

### **a) Undue risk**

The activities being planned are aimed at reducing the risks to personnel and the environment. The activity itself is unlikely to present any measurable dose to personnel undertaking the activity based on previous surveys and activities.

### **b) New benefit**

CSIRO's plans aim to better understand the nature of the storage and lead to improvements in the protection of personnel and the environment.

### **c) ALARA**

The robotic activities will provide a better understanding of spot-dose within the annex. These measures will lead to an improved understanding of health and environmental risk which will lead to a reduction in unexpected doses.

### **d) Capacity to comply**

No Change.

CSIRO is working closely with the Department of Defence to achieve the common aim of eventual safe relocation of the material to the NRWFM when established. All activities are overseen by CSIRO's Radiation Assurance team.

### **e) International Best Practice**

In keeping with the IAEA's expectations and international best practice, CSIRO's intentions to characterize, condition and relocate this material is to achieve safer and more secure storage of radioactive waste with the aim to eventually relocate it to a national disposal facility.