Decommissioning Laboratory and Associated Facilities Procedure

Date Approved 15 February 2012

1. Summary

When laboratories and associated facilities are vacated and/or decommissioned, any chemical, radioactive or biological contamination must be dealt with and all of these materials must be removed and disposed of properly.

2. Scope

This Guideline applies to any Chief Investigator or Responsible Academic moving out of a laboratory or associated facility or a laboratory being decommissioned/ shut down. These moves include: leaving the University, moving to another building or relocating to another laboratory within the same building.

3. Definitions

Decommission - the formal deactivation of a laboratory; assuring the safety of the space for further cleaning, renovation, or occupancy. The decommissioning process involves an inspection by Health and Safety (H&S); and representatives from the Institutional Biosafety Committee (IBC) if PC2; and Radiation Safety Advisor (RSA) if radioactive materials are used.

4. Procedure

Chief Investigators/Authorised Users notify School Unit and H&S when an investigator (laboratory based) will be leaving the University or relocating within the University.

Before removal of materials and equipment, the equipment must be checked for contamination and decontaminated if required.

Pack and remove all chemicals, biological, and radiological materials and equipment.

Check the laboratory for contamination. Contact H&S for assistance with biological, chemical and radiological site evaluations and decontamination. H&S will advise Chief Investigator/Authorised User on precautions to be taken during decontamination and transfer of biological, chemical, and radioactive materials. Information regarding relocating laboratory hazardous materials is available upon request.

If contamination is identified by H&S personnel, H&S will notify Principal Investigators/Authorised Users. Chief Investigators/Authorised Users will be responsible for all decontamination activities including biological, chemical, and radioactive. The School is

responsible for any deficiencies not corrected by the Chief Investigator/Authorised User and any ensuing costs.

The Chief Investigator or Responsible Academic must complete Appendix 2.

Laboratory/Facility Decontamination Certificate and forward to H&S to notify that the decontamination of the facility is complete. Facilities Management will be notified by H&S after the decommissioning is complete.

NOTE: Facilities Management will not service or clean laboratory facilities that have not been decommissioned by H&S.

4.1 Radiation Facilities

4.1.1 Prior to relocating to the new radioisotope facility, the facility must be approved by the RSA and Chemical and Radiation Technical Committee (CRTC) and registered with the EPA. H&S will notify the Authorised User of approval.

4.1.2 Use of radioactive materials should be discontinued at least one week prior to relocation.

4.1.3 Review the complete log of all isotopes (including activities) previously used in the facility.

4.1.4 All radioactive waste containers not being transferred to a new facility must be relocated to the radiation storage facility organised through the local Radiation Safety Coordinator (RSC).

4.1.5 Radioactive waste which has decayed to a safe level (below 100 becquerels per gram and meeting the other legal requirements such as total activity and specific activity) can be disposed of as chemical or clinical/biological waste. For chemical waste an Isotopic Declaration Sheet must be completed.

4.1.6 Conduct a Radiation Contamination Survey (this should be organised through the local Radiation Safety Coordinator or the RSA).

4.1.6.1 For surface contamination (including bench tops, sinks, taps, light switches, cupboards and handles, fridges, and possibly floors), a full contamination survey needs to be conducted.

4.1.6.2 It is important to initially review what isotopes (and their characteristics) have been used in the past (a minimum of the last five (5) years). From this list the type of survey (portable contamination meter or wipe test) can be determined. Soft Betas and some gammas will require a wipe test - eg ^{3}H, ^{14}C, ^{35}S, ^{125}I and possibly ^{32}P. For most others the use of a portable instrument will suffice.

4.1.6.3 Conduct the contamination survey and record the results. See Appendix 3 for the wipe test procedure and the method of calculation.

4.1.6.4 An operational definition needs to be established as to the maximum amounts of such contamination that would be tolerable.

The following tables list the two established levels or requirements:

AS2243.4 Contamination Levels		
Radiotoxicity Group	**Maximum levels within laboratory** **Bq/cm2**	**Maximum level on skin or items leaving the laboratory** **Bq/cm2**
Group 1	0.1	0.01
Group 2	1	0.1
Group 3a	10	1
Group 3b	100	10
Group 4	1000	100

Legislative Requirements (Section 21 of Regulations)		
Scheduled Level Group	**Alpha Radiation** **Maximum levels** **Bq/cm2**	**Beta or Gamma Radiation** **Maximum level** **Bq/cm2**
Group 1	0.04	0.4
Group 2	0.04	0.4
Group 3	0.4	0.4
Group 4	0.4	0.4

4.2 Decontamination Procedure

4.2.1 Once contamination levels have been determined the following is the decontamination process:

4.2.1.1 Loosely attached radioactive material on the bench top and floor may be removed by wiping with damp paper towelling. Again check the contamination levels (wipe test or instrument). If this does not achieve a reasonable result then the use of radiation decontamination detergent will be required.

4.2.1.2 Clean using one of the proprietary radiation decontamination detergents (used as described in the directions that come with the detergent). Again check the contamination levels (wipe test or instrument). Repeat the decontamination process and re-check levels).

4.2.1.3 Every effort should be made to eliminate it so that the activity indicated by the instrument or on the filter paper is finally zero or close to zero.

4.2.1.4 If contamination is persistent, and firmly attached, and activity still exceeds the above maximum figures, contact H&S or the University RSA for advice.

4.2.1.5 All wipes used in cleaning should be placed in a radiation

waste receptacle and the affected areas monitored. Decontamination should be carried out until no further reduction in radiation levels (as checked by the Radiation Safety Coordinator) is being achieved,

provided that the contamination level is then below the maximum permissible.

4.2.2 Upon written notification by the Chief Investigator/Authorised User or the RSC that the facility has been cleaned and decontaminated, the RSA will conduct a radiological survey of the facility. In addition, RSA will verify that the equipment used to store or analyse radioactive materials is decontaminated. For information on equipment decontamination, contact RSA or refer to the Radiation Safety Manual. Chief Investigators/Authorised Users will be notified of the results. If contamination is identified, laboratory personnel will be responsible for decontamination. The laboratory will be re-evaluated upon completion of decontamination efforts.

4.2.3 The registration will be surrendered upon the completion of decommissioning of the facility.

4.3 Biological Facilities

4.3.1 Upon notification by the Chief Investigator or the School, H&S will verify that all chemical and biological materials have been properly removed, disposed and/or stored.

4.3.2 All in-house equipment and furniture must be cleaned with decontaminating agents such as bleach, 70% alcohol or disinfectant Drawers and cabinets must be emptied. NOTE- laboratory equipment and furniture should not be transferred to non-laboratory areas

4.3.3 Biological waste disposal is organised through the local Safety Officer or School Office. Biological material must be inactivated before disposal as biohazardous waste through the local clinical waste collection.

4.3.4 Decontamination of biological safety cabinets must be organised through the local safety officer or School Office. If possible request Steve Morgan from CLYDE-APAC Specialty Products, 17 Lorna Street, Waratah NSW 2298, Mobile 0423705745, Email: Stephen.morgan@casp.com.au who is familiar with all the University Equipment and has been inducted for most facilities where he conducts the annual compliance testing.

4.3.5 Chief Investigators/Authorised Users and Facilities Management will be notified of H&S inspection results. Laboratory personnel will be responsible for any additional corrective actions. Decommissioning will be completed upon re-evaluation and Facilities Management will be notified that the area has been decontaminated.

4.3.6 If no longer required the facility certification (if certified) will be surrendered upon completion of decontamination.

4.3.7 Note- Risk Group 2 biological material must only be handled and stored in a PC2 facility. The University does not have any PC3 facilities and as such no risk group 3 biological material can be stored or handled in University facilities.

4.4 Gene Technology

4.4.1 Any transfer of GM (Genetically Modified) material to a new facility (animal facility, glasshouse, laboratory, constant temperature room etc) must be notified to the IBC via H&S prior to the relocation.

4.4.2 Any facility housing GM material must be certified with the Office of the Gene Technology Regulator (OGTR).

4.4.3 Any GM storage and disposal must be notified to the IBC via H&S. Refer to the OGTR web page for further information.

4.4.4 GM material must be transported according to OGTR Guidelines.

4.5 Hazardous Materials/Chemical Facilities

4.5.1 Chemical waste disposal is organised through the University's chemical waste collection service. Upon notification, Chemsal will schedule removal of hazardous waste materials. Packaging materials and additional information regarding relocating laboratory hazardous materials is available upon request. Note: Prior to discarding unwanted

chemical(s) that have not reached the expiration date, please work with your School to arrange reuse/recycling.

Please note the following waste will not be accepted by Chemsal. Contact Health and Safety on wastecollection@newcastle.edu.au for further information regarding the disposal of these waste types.

- DG class 1 explosive waste
- DG class 6.2 infectious waste
- DG class 7 radioactive material

4.5.2 Fume Cabinets/Hoods must be wiped down with appropriate cleaning agents according to the relevant MSDS's for the materials handled in them.

4.5.3 Fume Cabinets/Hoods that are to be removed for disposal or relocation should have a full decontamination and a maximo should be submitted requesting this and identifying any high risk material previously handled in the hood e.g. isotopes, hydrofluoric acid etc. NOTE- laboratory equipment and furniture should not be transferred to non-laboratory areas.

5. DOCUMENTATION (SIGN OFF PROCESS)

5.1 EQUIPMENT

5.1.1 Once cleaning and decontamination is complete the Chief Investigator or Responsible Academic must ensure the *Laboratory Equipment Listed for Disposal Decontamination Certificate* (Appendix 1) is completed for any piece of laboratory equipment to be disposed of. A copy must be attached to the equipment.

5.1.2 An *Equipment Disposal and Write Off Form* should then be completed and submitted to the Finance Officer - Assets, Financial Services, CH 335, Chancellery Building so that collection can be organised

NOTE- Some specialised pieces of technical equipment such as beta counters have specific disposal procedures as they contain a sealed source. Contact Health and Safety for further information.

5.2 LABORATORY AND ASSOCIATED FACILITIES

5.2.1 The Chief Investigator or Responsible Academic must ensure the Laboratory/Facility Decontamination Certificate (Appendix 2) is completed once the laboratory or associated facilities has been vacated and any chemical, radioactive or biological contamination has been dealt with. The form must be submitted to Health and Safety for final sign off.

5.2.2 Health and Safety will organise for the facility to be inspected according to the hazard sign off required. Once the facility has been checked and sign off has been obtained for all identified (biological, chemical, radiation, Health and Safety) hazards, a

copy will be forwarded to the Manager, Operations in Facilities Management advising the decommissioning process is complete.

6. Appendices

Appendix 1 Laboratory Equipment Listed for Disposal - Decontamination Certificate

Appendix 2 Laboratory/Facility Decontamination Certificate

Appendix 3 Radiation Contamination Wipe Test Methodology

Approval Authority	Director, People & Workforce Strategy
Date Approved	15 February 2012
Date for Review	15 February 2015
Policy Sponsor	Director, People & Workforce Strategy
Policy Owner	Associate Director, Health and Safety
Amendment History	Amended 9 July 2015 - Amended Approval Authority and Policy Sponsor to update title to reflect structural changes New procedure approved by Director, Human Resource Services, 15 February 2012, and linked from Essential Supporting Documents in the Laboratory Safety Policy [000752].