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FINAL REPORT ON THE REMEDIATION WORK CARRIED OUT IN THE BASEMENT OF COUPLAND 2 BUILDING, MANCHESTER UNIVERSITY

by

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1 INTRODUCTION

NIRAS were appointed RPA to Manchester University and were contracted to take and analyse samples from each of the contaminated areas detected by the University RPS Service in the basement of Coupland 2 building. The analysis of the samples taken enabled a prior risk assessment to be carried out for the work of remediation. This risk assessment is documented in report ref. MTC/01/090. NIRAS, as appointed RPA to Hayverns, generated Local Rules for the remediation work on their behalf and acted as RPS for Hayverns during the work.

2 METHOD

The remediation work was carried out as described in the Local Rules for this operation. Removal of wooden floor blocks and contaminated areas of the bitumen layer removed all contamination. Local dust control was achieved using a HEPA filtered vacuum. All waste generated was placed into drums and sealed.

3 RESULTS

Air monitoring was carried out during the operation in accordance with the procedures detailed in the local rules, both in the Supervised Areas and outside. The results are as follows:

Room	Alpha in air concentration (expressed as Am-241) Bq/m^3	Beta in air concentration (expressed as K-40) Bq/m^3
B6 (Supervised Area)	0.044 ± 0.008	0.036 ± 0.008
Corridor	0.006 ± 0.001	0.042 ± 0.011
B9 (Supervised Area)	0.045 ± 0.011	0.070 ± 0.016
Corridor	0.015 ± 0.002	0.095 ± 0.027
B10 Supervised Area	0.050 ± 0.007	0.054 ± 0.007
Corridor	0.008 ± 0.001	0.030 ± 0.009
B10 Supervised Area	0.008 ± 0.001	0.044 ± 0.020
Corridor	0.010 ± 0.002	0.066 ± 0.031

Air monitoring was not carried out in room B3 because of the occupationally insignificant level of contamination.

The Derived Air Concentration worked in for 2000hours that would result in dose of 20mSv is 3.7Bq/m^3 for Po-210 and 7.6Bq/m^3 for Pb-210. The above results indicate that working continually throughout the year would result in exposure at about 5% of the annual limit.

A final survey of the area was then carried out using a Mini 900 type EP15 probe and type AP2 probe. All areas were not significantly above background.

	ALPHA contamination cps		BETA/GAMMA contamination cps	
Room	Before	After	Before	After
B3	10	<1	80	3
B6	300	<1	>600	4
B9	15	<1	300	4
B10	50	<1	600	3

N.B. Alpha contamination monitored using a Mini 900 Type AP2 probe, instrument background <1.

Beta/ gamma contamination monitored using a Mini 900 Type EP15 probe, instrument background 2-4 cps.

4 CONCLUSIONS

All contaminated areas, as detected by the survey carried out by University RPS have now been removed. A final monitoring survey of these areas, using a Mini 900 Type EP15 probe and Mini 900 Type AP2 probe confirms that all contamination has been removed.

The work was completed in accordance with the regulations and doses well within limits. All areas as indicated by the University Radiological Protection Service in B6, B9 and B10 have been remediated and are now clean.

In addition the small patch of contamination on the bitumen in room B3 has been removed, leaving the area clean from contamination.

As discussed at the previous meeting, the contaminated area in room B10 was close to the walls. The walls are to be removed and it is understood that the University RPS will be in attendance when this wall is removed to monitor particular the lower part of the wall.

There is no radioactive contamination remaining in the areas remediated that is of occupational significance.