# ADVANCED MEDICAL SYSTEMS OPERATING PROCEDURE TABLE OF CONTENTS

#### REVISION - 01/95

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Approved by: A mercle

Date: 1-24-97

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# ADVANCED MEDICAL SYSTEMS OPERATING PROCEDURE

# AREA SURVEY PROCEDURE

ISP-2 Rev. 11/95

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- 1.0 PURPOSE: To standardize the method used for performing radiation and contamination surveys.
- 2.0 PRECAUTIONS AND LIMITATIONS:
  - 2.1 Observe all posted requirements for Restricted Areas.
  - 2.2 Ensure survey instruments are in calibration and good working order prior to use.
  - 2.3 Care must be used when handling smear samples to prevent spreading contamination or cross-contaminating samples.
  - 2.4 The following information should be recorded for each survey performed:

ALL SURVEYS

#### CONTAMINATION SURVEYS

Date Background cpm Time Counter Efficiency Performed by Counting time Reason for survey Area surveyed Instrument(s) used

(Serial #, Calibration due date)

- 2.5 All surveys are Legal Records, therefore, it is of the utmost importance that all information is neatly and accurately recorded.
- 2.6 Do not hesitate to add additional information onto survey forms (i.e. oil on floor, lights burnt out, etc.).

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#### 3.0 INSTRUCTIONS:

3.1 Radiation Surveys.

- 3.1.1 For general area dose rates, walk slowly around the area being surveyed while holding the probe at waist level. Record the highest dose rate in the appropriate units (normally mR/hr).
- 3.1.2 For contact readings, hold the probe within one (1) inch of the surface and record the dose rate, noting that it is a contact reading.
- 3.1.3 All readings less than 0.1 millirem per hour should be recorded as <0.1mR/hr.
- 3.1.4 For Hot Spot surveys, walk slowly around the area to be surveyed, determine the area of highest radiation, obtain a contact reading and record the location and dose rate.
- 3.2 Contamination Surveys.
  - 3.2.1 Using moderate pressure, wipe a dry smear over a 100 cm<sup>2</sup> area (100 cm<sup>2</sup> = 4" x 4" area or a 16" long S-shape of that area).
  - 3.2.2 Record the smear locations using one of the following methods:
    - a. List: Accurately record the location on a list of smear locations for the survey being performed.
    - b. Map: Use a number to indicate the smear location on a map of the area being surveyed. Smears should be noted on maps in the following manner:

Circle - horizontal surfaces Square - vertical surfaces

3.3 Action Levels.

3.3.1 Loose Surface Contamination:

- a. Restricted Areas 40,000 dpm/100 cm<sup>2</sup>.
- b. Controlled Areas 1,000 dpm/100 cm<sup>2</sup>.
- c. Unrestricted Areas 1,000 dpm/100 cm<sup>2</sup>

- 3.3.2 Radiation Levels:
  - a. Controlled Areas 0.5mR/hr general area.
  - b. Unrestricted Areas Not to exceed one hundred (100) mrem exposure to the general public in one (1) year.
- 3.3.3 Actions required if limits are exceeded.
  - a. Restrict access to the area.
  - b. Notify the RSO.
  - c. Determine the cause of the excess radiation or contamination levels.
  - d. Decontaminate and resurvey.
  - e. Shield or remove the source of radiation and resurvey.
  - f. If the above actions cannot be accomplished before the end of the day, the area should be posted and secured according to the degree of the hazard.
  - NOTE: In the event that levels cannot be immediately reduced, all actions taken should be recorded and forwarded to the RSO for review. The RSO shall conduct and document an investigation of the conditions and circumstances involved.
- 3.3.4 Frequency of Surveys.
  - Controlled Areas should be surveyed semimonthly.
  - Restricted Areas should be surveyed at least monthly.
  - c. Any area in which radioactive material is in use should be surveyed at least weekly.

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Areas to be Surveyed.

- The attached data sheets list the minimum a. areas to be surveyed. These surveys should be completed in their entirety at the specified frequency regardless of other surveys performed.
- b. Surveys performed in addition to the minimum areas and frequencies should be recorded on separate data sheets.
- с. All surveys should be forwarded to the RSC for review and filing.

3.3.5

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## CONTROLLED AREA SURVEY DATA SHEET

ISP-2A

#### LOCATION

RAD LEVEL GCPM CCPM DPM

FIRST FLOOR

1

1

1. Outside Clean Equipment Ro	om		*			
2. Top Landing of Front Stair	well	the deal and any one of the second	-	-	-	
3. Entrance Level of Stairwel	1		AND A DESCRIPTION OF		-	
4. Basement Level of Stairwel	1	A strain of the late of the second strain the	-		-	
5. Outside Change Room Interla	ock Door	And the second s			-	
6. Manipulator Control Station	n	and the second second second second second	-		-	
7. Cell Control Office		Alternative summer water of the state summer				
8. Hall in Front of Office		The design of th	PROFESSION AND ADDRESS			
9. Doorway Outside Shielded We	ork Room		-		-	
10. Conference Room - East	own noom	and the second second second second				
11. Conference Room - West			-	****		
12. Hallway to Cage Area		And the second s	-			
13. Outside Airlock Doors			-			
14. Outside Counting Room				-	-	
15. South of Counting Station		and the second second second second				
16. Counting Station		And the second rest in the second		-	-	
17. West Doorway Inside Counti	ing Room	A CONTRACTOR OF A CONTRACTOR A CONT	-	-		
18. Outside Isotope Warehouse	Overhead Door		ST-2 destances			
19. Loading Dock Area	stornour poor					
20. Scale Area		and the second sec	-	-		
21. Fire Door to Warehouse		And the second s	-			
22. East Side of LLW3 Area				-	-	
23. Middle of LLWS Area		And the second disconcerness.				
24. West Side of LLWS Area					-	
Performed by:			Date			
			Duco.			-
SURVEY METER:	S/N:	CAL	DUE .			
		Ont				-
COUNTING INST.:	S/N:	CAL	DUE:			
						1
COUNTING EFFICIENCY:	% BA	CKGROUND:			CPI	1
ACTION LEVELS: 1000 DPM/1 0.5MR/HR	00CM <sup>2</sup>					

Reviewed by RSO:\_\_\_\_\_ Date:\_\_\_\_\_

### CONTROLLED AREA SURVEY DATA SHEET

ISP-2B

#### LOCATION

RAD LEVEL GCPM CCPM DPM

FIRST FLOOR

<ol> <li>Change Room Near Lockers</li> <li>Change Room Near Showers</li> <li>Change Room Near Sinks</li> <li>Change Room Entrance to ISA</li> <li>Warehouse Office - East</li> <li>Warehouse Office - Center</li> <li>Warehouse Office - West</li> <li>Cage Area - East</li> <li>Cage Area - Center</li> <li>Cage Area - West</li> <li>Outside Isotope Warehouse</li> <li>SECOND FLOOR</li> </ol>					
<ol> <li>Outside Washroom Door</li> <li>Office at Southeast Corner</li> <li>East Wall Near Stairwell</li> <li>Center of Office Area</li> <li>Northwest Corner of Office</li> <li>Outside Clean Equipment Room</li> </ol>					
Performed by:			Date:_		
SURVEY METER:	_ S/N:	CAL	DUE:	 	
COUNTING INST.:	_ S/N:	CAL	DUE:	 	
COUNTING EFFICIENCY:	§	BACKGROUND:		 CPI	Ņ
ACTION LEVELS: 1000 DPM/100 0.5MR/HR	CM <sup>2</sup>				

Reviewed 'by RSO:\_\_\_\_\_ Date:\_\_\_\_\_

### RESTRICTED AREA SURVEY DATA SHEET

#### ISP-2C LOCATION HOT SPOT RAD LEVEL GCPM CPM DPM 1. HEPA Room North 2. HEPA Room Middle 3. HEPA Room South 4. Stairs to HEPA Room 5. Doorway to Washroom 6. Doorway to Frisking Station 7. Middle of Large Office 8. Inside Doorway to Stairwell -----9. Inside Doorway of CER 10. West of Boiler in CER 11. Inside Doorway to Roof of CER 12. Outside ISA Door -----13. ISA/Cell Wall -----14. ISA/Decon Room Wall 15. West Wall Near SEC 16. Source Garden 17. Top Landing to Basement -----18. ISA/Landing to Basement 19. Outside Basement Door 20. Hallway Outside WHUT Room 21. By WHUT Room Entrance 22. North Side of Back Basement 23. West Side of Back Basement 24. Outside Decon Room Doors -----25. By Hot Cell Door in Decon Rm. ------26. Outside Airlock Doors 27. Dirty Side of Airlock 28. Clean Side of Airlock -29. Inside Airlock Doors to Cage 30. By Airlock Doors in Isotope Warehouse 31. East of Isotope Warehouse ------------32. Middle of Isotope Warehouse ------33. West of Isotope Warehouse 34. Tank Room Front Basement 35. Entrance Hall of Front Bsat. 36. Chart Room in Front Basement ----------37. Back Entrance to Front Bsmt.

Performed by:\_\_\_\_

SURVEY METER: COUNTING INST.:	S/N: S/N:		CAL	DUE: DUE:	
COUNTING EFFICIENCY:	8	BACKGROUNI	):		cpm

\_\_\_\_\_ Date:\_\_\_

Date:

ACTION LEVELS: 40,000 dpm/100cm<sup>2</sup>

Areas >100MR/HR must be locked and posted as a High Radiation Area.

Reviewed by RSO: