University of Aberdeen

Ionising Radiation Safety Arrangements

APPENDIX 9 X-ray Equipment form

Version 1

May 2017

Authorised by Radiation Hazards Sub Committee

X-ray Equipment form

University of Aberdeen – Audit of engineering controls for equipment that generates X-rays

The Ionising Radiation Regulation 1999 requires an employer to ensure that all doses to staff and members of the public are as low as reasonably practicable. This can be achieved in several ways but most commonly by the use of engineering controls, design features and safety interlocks. This form will assess the current practices in place and identify areas where changes should be made.

Date of audit	
Auditor	
Make, model and serial numbers of equipment audited	Make: Model: S/N:
Location	
Contact Person	
Date of any previous audit	

Summary of Actions

	Action	Person Responsible	Date Completed
1.			
2.			
3.			
4.			

	Equipment Information	General information and manufacturers recommendations	Radiation Protection Assessment and advice
1.	What is the range of kV and mA available on the unit and what kV and mA settings are typically used? What is the typical scan time?		
2.	Is the equipment fixed in place or is it mobile/ hand held?		
3.	Are manuals available for the equipment and where are they kept?		
4.	What is the maximum number of cycles per hour the unit is capable of? What is the workload / How often is the equipment used?		

	Installation Details	General information and manufacturers recommendations	Radiation Protection Assessment and advice
5.	When was the equipment installed? Is there a critical examination certificate from the installing company?		
6.	Has the equipment been moved or reinstalled since its original installation? **If yes**, do documents exist to confirm that unit has been correctly reassembled? Has leakage been rechecked?		
7.	Has the equipment been modified in any way?		

	Details of Maintenance arrangements and safety features	General information and manufacturers recommendations	Radiation Protection Assessment and advice
8.	Is the equipment on a maintenance contract? **If yes** how often is it inspected? Are maintenance reports issued? When does the contract end? **If no** who is responsible for		

	maintenance and who checks safety interlocks are functioning correctly?		
Details Maintenance arrangements and safety features (cont.)		**General information and manufacturers recommendations**	**Radiation Protection Assessment and advice**
9.	Is the equipment operated with a Key lock? **If yes** where is the key stored? Is there a key sign out sheet and who supervises this?		
10.	Is the equipment permanently shielded		
	Can the equipment still be operated if the shielding is removed?		
	What levels of leakage have been recorded during operation?		
11.	Does the manufacturer specify a minimum distance between the unit and the operator during operation? **If yes** what is the minimum distance?		
12.	Does the manufacturer recommend any PPE to be used when operating the unit?		
13.	Are there warning lights on the equipment or an audible tone when the equipment is in use and are checks made to ensure they are working? Will the equipment operate even if the lights/audible signals have failed?		
14.	Are there radiation warning signs on the equipment or in the area warning? Are these signs permanently displayed or who is responsible for ensuring the signs are displayed?		
15.	Detail any other interlocks available on the equipment Are they regularly checked and is there a record that the checks have been performed? If an interlock has been activated does the unit need to be reset before it will operate again?		
16.	Are there emergency off switches on the equipment and do they operate correctly. Are they tested regularly and are records kept?		

Details of operator requirements		General information and manufacturers recommendations	Radiation Protection Assessment and advice
17.	Who is the Radiation Protection Supervisor for the area		
18.	Is there a current risk assessment for the equipment		
19.	Are Local Rules for the area available?		
20.	Is there a list of trained operators for the equipment and are training records kept?		
21.	Are there detailed written procedures for operating the equipment? Are there contingency arrangements detailed in the procedures?		
22.	Are the contact details of the Radiation Protection service listed in the procedures?		
23.	Is there a fault book for the equipment?		

Plan of area and dose rate measurements