# FORMAT FOR PERIODIC QUALITY ASSURANCE TEST REPORT FOR MAMMOGRAPHY EQUIPMENT

(Periodic Quality Assurance shall be carried out at least once in two years and also after any repairs having radiation safety implications)

### A. DETAILS OF THE DIAGNOSTIC X-RAY EQUIPMENT

1	Name of the Institution and City	
2	Type of Equipment	
3	Model Name	
4	Name of the Manufacturer	
5	Name(s) of Person(s) testing the equipment	
	and Name of Supplier/Service Agency	
6	Dates and Duration of the Tests	

## B. SUMMARY OF RADIATION SAFETY PERFORMANCE TEST REPORT:

:

Sr. No	Parameters tested	Specific values	Measured values	Tolerance	Remarks
1.	Accuracy of Operating Potential	varues	varues	± 1 kV	
2.	Accuracy of Timer			% Error < 10 %	
3.	Linearity of tube current (CoL)			CoL< 0.1	
4.	Reproducibility of output (CoV)			CoV ≤ 0.05	
5.	Radiation Leakage level from X Ray tube housing kV &mA			< 0.02 mGy in one hour	
6.	Total Filtration (Measurement at maximum kV)			Tolerance : First HVL at 30 kVp $\geq$ 0.3 mm Al First HVL at 40 kVp $\geq$ 0.4 mm Al First HVL at 50 kVp $\geq$ 0.5 mm Al	
7	Performance of imaging phantom			<ul><li>&gt; 4 fibers</li><li>&gt; 3 calcification</li><li>&gt; 3 masses must be visible</li></ul>	

I hereby undertake that all the information provided above is correct and in accordance with the detailed Quality Assurance Report enclosed herewith.

Place:	Signature:
Date:	Name of the Service Engineer:
	Name of Supplier/Service Agency
	Seal of Supplier/Service Agency:

#Signature of Institution's Representative:

Name of Institution:

Seal of the Institution:

<sup>#</sup> Quality Assurance Tests Report shall be signed by Institution's Representative and duly stamped by the

User's Institution.

### 2.ACCURACY OF OPERATING POTENTIAL/ACCURACY OF TIMER

Applied	Set				Measured v	values		
kVp	tim				mA stati	ons		
	e	mA	station -1	mA s	tation -2	Av. kVp	Observed	Remarks
	(s)						Time (s)	
		kVp	Time (s)	kVp	Time (s)			
		_		_				
(Maximu								
m)								
·	•				•			•
Tolerance for	or kVp	$: \pm 1 \mathrm{k}$	V					
Tolerance f	for irra	diation t	ime: ± 10 %	)				
*FDD 4	stands i	for focal	snot to detect	or distance	,			

<sup>\*</sup>FDD stands for focal spot to detector distance

## 3. LINEARITY OF mA/mAs LOADING STATION:

Operating pa	arameters						
	FDD	(cm)					
FDD(cm)	100	kV			Time	e	
				<b>,</b>			
4	044 (-	· C)	A		_	C CC: -: C	D1

mA Range	Outpu	t (µGy)	Average (μGy)	μGy /mAs ( X)	Coefficient of Linearity	Remarks
					(CoL)	
	Reading 1	Reading 2				
Tolerance	e: Coefficient	t of Linearity	< 0.1			

# 4. TOTAL FILTRATION AND ALUMINIUM EQUIVALENCE OF THE COMPRESSION DEVICE

i) Molybdenum target, Beryllium window or Rh/Rh Rh or W/Al Rh Added filter thickness = ------ mm Molybdenum

Operating	mAs			Ado	led filter (	(mm Al)			HVT
Potential			Compression					pression	mm Al
								Device	
		0.0	0.1	0.2	0.3	0.4	0.5		

Applied	mAs	C	Output (µC	Gy)	1	Average	Coefficie		Remarks
kV		1	2	3		(X)	Variation (	(CoV)	
Tole	rance · Co	OV < 0.05	<u> </u>						
6. RADI	ATION I	EAKAG	E LEVE	LS AT 5 a	cm FRO	M THE F	XTERNAL S	SURFA	CE OF X-R
						, , , , , , , , , , , , , , , , , , ,		) ( IXI 1 I	CL OI A R
TUBE	HOUSI	NG							
Operating	naramata	rc.							
Operating	paramete	rs:							
Operating	<u> </u>		1.57	(3.4			l m		T 1
Distance	from the	rs: 100	kVp	(Max)		mA	T	ime(s)	
	from the		kVp	(Max)		mA	T	ime(s)	
Distance	from the		kVp	(Max)		mA	T	ime(s)	
Distance	from the		kVp	(Max)		mA	T	ime(s)	
Distance i	from the	100					Workload	ime(s)	Result
Distance focus (cm	from the	100	kVp						
Distance focus (cm	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)			Max	imum radiati
Distance focus (cm Location (at 1.0 m from the	from the	100	are level (1					Max leaka	imum radiati age at 5cm fro
Distance focus (cm	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)			Max leaka	imum radiati
Distance focus (cm Location (at 1.0 m from the	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)			Max leaka the ex	imum radiati age at 5cm fro aternal surfac
Distance focus (cm Location (at 1.0 m from the focus)	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)		Workload	Max leaka the ex X-ra	imum radiati age at 5cm fro aternal surfac ay tube housi
Distance focus (cm Location (at 1.0 m	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)		Workload 40 mAmin	Max leaka the ex X-ra	imum radiati age at 5cm fro aternal surfac
Distance focus (cm Location at 1.0 m From the focus)	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)		Workload	Max leaka the ex X-ra	imum radiati age at 5cm fro aternal surfac ay tube housi
Distance focus (cm Location (at 1.0 m from the focus)	from the	100 Exposu	are level (1	mGy/hr or	mR/hr)		Workload 40 mAmin	Max leaka the ex X-ra	imum radiati age at 5cm fro aternal surfac ay tube housi
Distance focus (cm Location (at 1.0 m from the focus)  Tube	from the )	Exposu Righ	ht	mGy/hr or Front	mR/hr) Back	Тор	Workload  40 mAmin in one hour	Max leaka the ex X-ra mo	imum radiati age at 5cm fro aternal surfac ay tube housi Gy in 1 hr
Distance focus (cm  Location at 1.0 m  From the focus)  Tube	from the )  Left  The leaka	Exposu Right	ht on average	mGy/hr or Front ed over an	Back	Top  10 cm <sup>2</sup> , w	Workload  40 mAmin in one hour ith no linear d	Max leaka the ex X-ra mo	imum radiati age at 5cm fro aternal surfac ay tube housi Gy in 1 hr on greater than
Distance focus (cm Location at 1.0 m Grom the focus)  Tube	Left The leaka	Exposu  Right ge radiation cated at 5	ht on average	Front ed over an any poin	Back	Top  10 cm <sup>2</sup> , w	Workload  40 mAmin in one hour	Max leaka the ex X-ra mo	imum radiati age at 5cm fro aternal surfac ay tube housi Gy in 1 hr on greater than

The HVT of the unit is = \_\_\_\_\_mm of Al for -- kVp

Recommended Value: First HVL at 30 kVp  $\geq$  0.3 mm Al

First HVL at 40 kVp  $\geq$  0.4 mm Al First HVL at 50 kVp  $\geq$  0.5 mm Al

Result:

Sr. Name of the object Number of object visible Tolerance (Number of object clearly

7. IMAGING PERFORMANCE EVALUATION:

Equipment Used: Mammography Imaging Phantom

No.	in Mammography	in the film exposed with	visible in the film at an average glandular
	phantom	Mammography	dose less than 3 mGy
		Phantom	
1.	Fibers		>4 fibers must be clearly visible
2.	Micro		>3 Micro calcification must be clearly visible
	Calcification		
3.	Masses		> 3 masses must be clearly visible

#### **Details of Radiation Protection Survey of the installation**

Date of radiation protection survey:

Whether radiation survey meter used for the survey has valid calibration certificate: Yes/No

**Equipment Setting:-**

Applied Current (mA):

Applied Voltage (kV):

Exposure time(s):

Workload:

Provide the measured maximum radiation levels (mR/hr) at different locations

Location	Max. Radiation level (mR/hr)
Control console(Operator Position)	
Outside patient entrance door	
Behind Windows (if applicable)	
Patient Waiting Area	

Permissible limit: For location of Radiation Worker: 20 mSv in a year (40 mR/week) For Location of Member of Public: 1 mSv in a year (2mR/week)