## MARYLAND DEPARTMENT OF THE ENVIRONMENT

(410) 537-3193 • 1-800-633-6101 • http://www.mde.state.md.us

1800 Washington Boulevard • Baltimore Maryland 21230

MDE RX14

## COMPUTERIZED TOMOGRAPHY

MDE Machine Number	System/Tube S.N
Facility Registration Number	Facility Name
Begin Inspection / / / mm dd yy	Inspector License No
Manufacturer	Model
Maximum kVp, MA, Scan Time (sec)/	Gantry Manufactured after 9/3/85 Y N Date Manufactured
Single Tomogram per Scan Multiple Tomogram: per scan. Overlapmm.	

Regulation		Pass (P), Fail
Number	Requirement for CT Imaging Procedures and Equipment	Or Not Applicable
		(NA)
F.11(b)(1)	<ul> <li>(i) Means provided to terminate the x-ray exposure in event of data collection failure</li> <li>(ii) A visible signal indicates when the x-ray exposure is terminated</li> <li>(iii) Operator can terminate the x-ray exposure at any time</li> </ul>	$\square P \square F \square N/A$ $\square P \square F \square N/A$ $\square P \square F \square N/A$
F.11(b)(2)(i) F.11(b)(2)(ii)	Visual determination of the tomographic or reference plane?	$\square P \square F \square N/A$
F.11(b)(3)(i)	Visual indication at the control and gantry when x-rays are produced?	$\Box P \Box F \Box N/A$
F.11(b)(3)(ii)	Emergency termination switch available? Emergency termination switch clearly labeled?	$\Box Yes \Box No$ $\Box P \Box F \Box N/A$
F.11(b)(4)	Condition of operation to be used during a scan or scan sequence is indicated	P F N/A
F.11(b)(6)	Angular position shall be identified	$\square P \square F \square N/A$
F.11(b)(7)	<ul> <li>(i) Total error of indicated vs. measured at scan plane:</li> <li>(must be ≤5mm)</li> <li>(iii) Return to indicated start position? (must be ± 1 mm):</li> </ul>	□ P □ F □ N/A □ P □ F □ N/A
F.11(c)(1)	Two-way aural communication provided	$\square P \square F \square N/A$
F.11(c)(2)(i)	Continuous operator observation of the patient during exposures provided	$\Box P \Box F \Box N/A$
F.11(c)(2)(ii)	If primary viewing system electronic, alternate system for observation of the patient during exposures provided	P F N/A

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Regulation Number	Requirement for CT Imaging Procedures and Equipment	Pass (P), Fail Or Not Applicable (NA)
F.11(d)(1)	Survey performed as required Date of last Survey:// Name of person or service company performing survey:	Yes No
F.11(d)(2)(iii)	Instrumentation dosimetry calibration within two (2) years?	Yes No
F.11(d)(2)(v)	CTDI or Multiple Scan Average Dose (MSAD) measurement/calibration available for each type of scan performed? Dose Phantom used: (Head) Mfr./Model	Yes No
F.11(d)(2)(vii)	Calibration procedures available in writing?	Yes No
F.11(d)(3)(i)	Dose measurement, spot-check procedures written, and performed by qualified expert? Name of person or service company performing dose measurement:	Yes No
F.11(d)(2)(vi)( <u>c</u> )	Spot-check performed at required interval         Date of spot-check:         Person performing Spot-check:         Licensed Inspector, Lic. No.         Registered Service Company:         Name	🗌 Yes 🗌 No
F.11(d)(3)(ii)	Spot-check incorporates use of facility use factors and approved phantom If not, specify equivalent (Mfr. & Model etc.)	Yes No
F.11(d)(3)(iv)	Images from spot-check retained in two forms, photographic and digital	□ P □ F □ N/A
F.11(d)(4)(ii)	Information available at the control panel for operation and calibration:	
	(a) Dates of the latest calibration/spot checks posted at control panel	$\square$ P $\square$ F $\square$ N/A
	$(\underline{b})$ Instructions available on the use of the CT dosimetry phantom(s)	$\square$ P $\square$ F $\square$ N/A
	(c) Distance available between tomographic plane and reference plane in millimeters	P F N/A
	$(\underline{d})$ Current technique chart available to specify routine exams, techniques, scans/exam	P F N/A
F.11(d)(4)(iii)	If spot-check tolerance has been exceeded, have limitations been specified? If Yes, briefly describe written limitations:	Yes No
	Author of recommended limits:	

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CALCULATION OF MSAD using the mathematical expression:  $MSAD = (E \times F \times K \times L)/T$  where:

E = average exposure in (C/kg) coulombs per kilogram or in milliroentgens (mR)

f = factor to convert exposure in air to absorbed dose in tissue or attenuating matter in grays per C/kg, or in RAD per mR)

K = calibration factor to account for the radiation measuring device response and volume

L = effective length of the radiation measuring device in millimeters

T= thickness in millimeters of the tomographic section selected

Typical HEAD Technique Factors, (C) Contrast, (NC) Without Contrast, (B) Both with & without contrast:

\_\_\_\_\_kVp \_\_\_\_\_mA \_\_\_\_\_Scan Time (sec.) \_\_\_\_\_Scan Thickness (mm) No. Scans/Exam \_\_\_\_\_

MSAD measured (HEAD) =  $\__RAD/mSv$ 

Comments:

Manufactured rated MSAD or CTDI available:  $\Box$  Yes  $\Box$  No = \_\_\_\_RAD/mSv  $\Box$  CTDI  $\Box$  MSAD (check one)

If Yes, state techniques used: \_\_\_\_\_ kVp \_\_\_\_\_ mA \_\_\_\_ Scan Time (sec.) \_\_\_\_\_ Scan Width (mm)