



THERAPY ACCELERATOR INITIAL COMMISSIONING SUMMARY

State Form 46886 (R2 / 5-12)

INDIANA STATE DEPARTMENT OF HEALTH

MEDICAL RADIOLOGY SERVICES

Facility registration number		Name of facility		Date of inspection (month, day, year)	
Machine number	Machine design (use codes)	Location		Manufacturer (use codes)	
Date of manufacture (month, year)	Model number		Serial number		

RADIATION SAFETY SURVEY		
Name of qualified physicist who performed shielding calculations	Physicist number	Shielding document submitted? ☐ Yes ☐ No
Workload assumptions		
Measurement set-up		
Date of radiation safety instrumentation / calibration (month, day, year)		

RESULTS OF RADIATION SURVEY					
Location (Submit a facility layout indicating where the measurements were taken.)	mRem 0°	mRem 90°	mRem 180°	mRem 270°	mRem per week
Console / Control Area					
Primary Barrier (90° Gantry Angle)					
Primary Barrier (270° Gantry Angle)					
Roof					
Door					
Secondary Barrier					
Secondary Barrier					
Secondary Barrier					
Secondary Barrier					
HVAC Ductwork					
Accessible Conduits					

DOSIMETRY SYSTEM AT FACILITY		
Manufacturer of cylindrical chamber	Model of cylindrical chamber	Date of ADCL calibration (month, day, year)
Manufacturer of parallel plate chamber	Model of parallel plate chamber	Date of N gas derivation (month, day, year)
Manufacturer of electrometer	Model of electrometer	Date of ADCL calibration (month, day, year)
Date of aneroid barometer intercomparison (month, day, year)		Date of initial calibration (month, day, year)
Calibration protocol		

QUALITY MANAGEMENT PROGRAM	
Submit the following departmental quality assurance documents: - Treatment planning computer and dose calculated algorithm QA procedures - Weekly output constancy check policy and procedure - Patient chart review policy and procedures - Monthly output spot check procedure	

* The qualified radiation oncology physicist shall specify tolerance values based upon accelerator manufacture specifications and the most recent published standards. Corrective action is required for measured data that exceeds the stated tolerance.

** Energy (bending magnet current), flatness, symmetry, temperature and compensation, et cetera.

*** Target slide or scattering foil, dose chamber slide, dose rate, et cetera.

FACILITY REQUIREMENTS

	Satisfactory	Unsatisfactory	Not Applicable
Warning Light at Entrance to Accelerator Room Operational	☐	☐	

ACCELERATOR REQUIREMENTS

	Satisfactory	Unsatisfactory	Not Applicable
Absorbed Dose due to Leakage Radiation in the Patient Plane	☐	☐	
Transmission Through Collimators	☐	☐	
Removable Wedges Clearly Identified	☐	☐	
X-ray Contamination of Electrons Beams	☐	☐	☐
Absorbed Dose at the Surface	☐	☐	
Dose Monitoring System:			
Incorporated into two independent dose monitoring systems	☐	☐	
Monitor units displayed in the event of a power failure	☐	☐	
A symmetry of beam monitored and interlocked	☐	☐	
Secondary dose monitoring system able to terminate irradiation	☐	☐	
Timer terminates irradiation if dose monitoring systems fail	☐	☐	
Selection of Radiation Mode	☐	☐	☐
Selection of Energy	☐	☐	☐
Selection of Fixed or Rotational Mode	☐	☐	☐

MECHANICAL PARAMETERS

	Satisfactory	Unsatisfactory	Tolerance *
Gantry Rotation Isocenter	☐	☐	
Collimator Rotation Isocenter	☐	☐	
Table (Couch) Rotation Isocenter	☐	☐	
Field Size Readouts	☐	☐	
Gantry Angle Readouts	☐	☐	
Collimator Angle Indicator	☐	☐	
Optical Distance Indicator (ODI) Accuracy and Linearity	☐	☐	
Light / Radiation Field Congruency	☐	☐	
Laser Alignment System Accuracy	☐	☐	
Emergency Off Switches	Operational? ☐ Yes ☐ No		
Door Interlock	Operational? ☐ Yes ☐ No		
Dosimetry Interlocks **	Operational? ☐ Yes ☐ No		
Safety Interlocks ***	Operational? ☐ Yes ☐ No		
Audio Communications System	Operational? ☐ Yes ☐ No		
Visual Monitor System	Operational? ☐ Yes ☐ No		

PHOTON BEAM PARAMETERS

				Tolerance *
Nominal Energy (MV)				
Ionization Ratio				
Flatness	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Symmetry	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Field Size Factors	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
PDD / TPR Values	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output / MU Reproducibility	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Monitor Chamber Linearity	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Wedge / Compensator Transmission Factors	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Tray / Custom Block Transmission Factors	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Open Field Isodose Lines (central axis)	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Wedge Isodose Lines (central axis)	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed
Constancy Check Device Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed

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ELECTRON BEAM PARAMETERS				
				Tolerance *
Nominal Energy (MeV)				
Mean Incident Energy				
Flatness (Cone Size _____)	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Symmetry	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output / MU Reproducibility	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed
Constancy Check Device Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed

ELECTRON BEAM PARAMETERS				
				Tolerance *
Nominal Energy (MeV)				
Mean Incident Energy				
Flatness (Cone Size _____)	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Symmetry	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output / MU Reproducibility	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed
Constancy Check Device Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed

ELECTRON BEAM PARAMETERS				
				Tolerance *
Nominal Energy (MeV)				
Mean Incident Energy				
Flatness (Cone Size _____)	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Symmetry	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output / MU Reproducibility	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	☐ Satisfactory ☐ Unsatisfactory	
Output Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed
Constancy Check Device Calibration	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	Performed

Signature of physicist	Date (month, day, year)
Printed name of physicist	Physicist number