

# RapidArc Commissioning Services

Offered by RapidArc commissioning consultants,  
Robert Gregory, M.S., and Earl Dietrich, M.S., INphysics, LLC



If you have invested in RapidArc™ radiotherapy technology from Varian Medical Systems or are thinking about it, then now is a good time to find out more about commissioning services that can help you get your system up and running smoothly. The commissioning protocol includes system calibration and verification in order to ensure proper clinical performance. Please refer to the detailed summary below for a complete listing of the performance tests that will be completed as part of the standard RapidArc commissioning protocol.

## What's covered...

### General Machine Performance

#### Gantry Angle Calibration

- The accuracy of the gantry angle read-out will be verified.

#### Isocenter Calibration

- The radiation isocenter will be verified

#### Arc Dosimetry

- Consistency and stability of beam output for arc beams will be verified.

#### DMLC Dosimetry

- Consistency and stability of dose delivery in DMLC mode will be verified at different gantry angles.

### RapidArc Performance Using EPID

#### Picket Fence Test vs. Gantry Angle

- DMLC performance will be verified and compared at different gantry angles.

#### Picket Fence Test during RapidArc Delivery

- DMLC performance will be verified in RapidArc mode.
- A test with known errors will be performed to demonstrate sensitivity of the Picket Fence Test in RapidArc mode.

#### Control of Variable Dose Rate and Gantry Speed during RapidArc Delivery

- Consistency of dose output with for different combinations of gantry rotation speed and dose rate will be verified.

#### Control of Variable Leaf Speed during RapidArc Delivery

- Consistency of dose output with different combinations of MLC speed and dose rate will be verified.

### Quality Assurance

#### Patient-Specific QA

- Accuracy of dose calculation for RapidArc will be demonstrated for typical plans by comparison with measurements.
- Calculations will be performed with customer configuration.
- Measurements will be performed on customer machine.

Commissioning your system can take as little as two days with RapidArc commissioning consultants.

For more information about RapidArc commissioning services, please contact Earl Dietrich at [earl@inphysics.net](mailto:earl@inphysics.net) or (317) 614-5306.

## RapidArc commissioning consultants available to assist you...



**Robert C. Gregory**  
INphysics LLC

Robert Gregory, M.S., is a medical physicist and part owner of INphysics, a medical physics services and consultation company located in Indiana. Gregory has close to 20 years of experience and is certified by the American Board of Radiology in therapeutic radiologic physics.

Prior to INphysics, Gregory was a medical physicist at St. Francis Hospital in Indianapolis, IN. He has also served as radiation safety officer on an NRC license and held chief medical physicist positions in other hospital centers. Gregory received his master of science degree in radiological medical physics from the University of Kentucky in Lexington, KY, and his bachelor's degree in physics/math from Morehead State University in Morehead, KY. Gregory is an approved therapy physicist and approved diagnostic & X-ray tube inspector in the state of Indiana.

Gregory's extensive experience includes intensity-modulated radiation therapy (IMRT), stereotactic radiosurgery (SRS), image-guided radiation therapy (IGRT), shielding calculations, HDR, LDR, CT simulation, and intravascular brachytherapy. He has also accepted and commissioned linear accelerators, treatment planning systems, CT simulators, and HDR units.



**Earl S. Dietrich, M.S.**  
INphysics LLC

Part owner of INphysics, Earl Dietrich, M.S., is a medical physicist who trained at Mercy Medical Center in Cedar Rapids, IA. He has over 15 years of clinical experience and is certified by the American Board of Radiology in therapeutic radiologic physics.

Prior to INphysics, Dietrich was director of medical physics at Radiation Oncology Associates in Fort Wayne, IN, and a radiation therapy physicist at several medical centers. Dietrich received his master of science in nuclear engineering from the University of Missouri in Columbia, MO, and his bachelor's degree in engineering physics from North Dakota State University in Fargo, ND. Dietrich is an approved therapy physicist in the state of Indiana, a non-departmental inspector in the state of Illinois, and served as radiation safety officer on an NRC license.

Dietrich has extensive experience with advanced treatment techniques, such as IMRT, IGRT, HDR, LDR, CT simulation, and intravascular brachytherapy, and has accepted and commissioned of linear accelerators, treatment planning systems, CT simulators, and HDR units.