Siemens Polydoros 50SX/80SX X-ray Controls Maintenance Course

Course length: 1 Week
CEU's Awarded: 4

COURSE INTRODUCTION

The Siemens Polydoros course is designed to teach the experienced service professional those skills necessary to fully service this x-ray control. This includes complete calibration procedures, functional checks, troubleshooting and Siemens documentation interpretation. The course consists of integrated lecture, labs and documentation which complement each other ensuring the maximum learning environment.

DAY 1

I. Introduction
   - A. High frequency concepts
   - B. Falling load concepts
   - C. Basic operation
   - D. System specifications
   - E. Option packages

II. Siemens documentation
   - A. Terminology/symbology
   - B. Equipment layout
   - C. Control panel
   - D. Service board
   - E. Functional diagrams
   - F. Schematics

III. Console operation
   - A. Knobology
   - B. Anatomical programming
   - C. Zero point techniques

IV. System block diagram
V. Intermediate circuit
VI. Power supplies
VII. Power up sequence

LAB ACTIVITIES

I. System operation
II. Physical layout
   - A. Control console
   - B. Power cabinet

III. Component location
IV. Power supply checks/adjustments
V. APR Programming
VI. Troubleshooting

COURSE OBJECTIVES

At the conclusion of this course, attendees will be able to:

- Troubleshoot to the component or board level.
- Calibrate all circuitry to the manufacturer's specification.
- Perform all related CDRH compliance testing.
- Verify the system performance.

DAY 2

I. KV logic diagram
   - A. KV selection circuits
   - B. KV inverter drive circuits
   - C. KV feedback
   - D. Min/Max monitoring
   - E. Inverter short detection/ protection circuits
   - F. Load compensation circuits
   - G. Fluoro KV control

LAB ACTIVITIES

I. KV circuits component location
II. KV circuits waveform analysis
III. KV waveform analysis
IV. Troubleshooting

DAY 3

I. Filament control logic diagram
   - A. mA selection circuits
   - B. Filament inverter drive circuits
   - C. Filament feedback circuits
   - D. Actual value detection circuits
   - E. Filament safety circuits

II. Rotor control logic diagram
   - A. Rotor inverter drive circuits
   - B. Start to run circuits
   - C. Current sensing circuits
   - D. Brake circuits

LAB ACTIVITIES

I. Filament control component location
II. Filament control calibration

PREREQUISITES FOR ADMISSION

Attendees must possess the knowledge acquired through attendance at our Advanced Concepts of Radiographic Imaging Maintenance-Level II course or the equivalent electronics and service experience. A strong microprocessor background is recommended.

   - A. Preheating
   - B. Learning filament correction
   - C. Push values

III. Filament control waveform analysis
IV. Rotor control programming
V. Anode speed verification
VI. Rotor control waveform analysis
VII. Troubleshooting

DAY 4

I. Iontomat P logic diagram
   - A. Ion chamber
   - B. KV correction
   - C. Density Correction

II. KK interface logic diagram
   - A. Unit selection
   - B. Fluoro / tomo
   - C. Spotfilmer
   - D. Imaging

III. Control logic
   - A. MPS bus communication
   - B. SMP bus communication
   - C. Prep/expose logic

LAB ACTIVITIES

I. AEC component locations
II. AEC waveform analysis
III. KV correction calibration
IV. Density correction calibration
V. Troubleshooting

DAY 5

I. Final exam
II. Exam review
III. Course critique
IV. Parts sourcing