BULLETIN 2015-26 June 23, 2015

U.S. Department of Labor Employment and Training Administration Office of Apprenticeship (OA) Washington, D.C. 20210	Distribution: A-541 Headquarters A-544 All Field Tech A-547 SD+RD+SAA+; Lab.Com	Subject: Revision to an Existing Occupation: Field Service Engineer (Medical) Code: 200
Symbols: DSNIP/RCG	ApprenticeshipUSA	Action: Immediate

PURPOSE: To inform the staff of OA, State Apprenticeship Agencies (SAA), Registered Apprenticeship program sponsors and other Registered Apprenticeship partners of a revision to an existing apprenticeable occupation, Field Service Engineer (Medical).

Field Service Engineer (Medical)
O*NET-SOC Code: 49-2094.00
RAPIDS Code: 0916CB
Training Term: Competency-based
Type of Training: Competency-based

BACKGROUND: Michael Ferraro, Manager, Digital Imaging Technical Training at Hologic, Inc., submitted this revision for the occupation Field Service Engineer (Medical). It was approved by the OA Administrator on June 12, 2015. A Field Service Engineer (Medical) is a skilled technician who repairs, tests, adjusts, or installs electronic equipment.

ACTION: The OA staff should familiarize themselves with this bulletin.

If you have any questions, please contact Ricky C. Godbolt, Apprenticeship and Training Representative at (202) 693-3815.

NOTE: This bulletin is being sent via electronic mail.

Attachment

- Hologic Inc Work Process Schedule

WORK PROCESS SCHEDULE
FIELD SERVICE ENGINEER (Medical)
O*NET-SOC CODE : 49-2094.00 RAPIDS CODE : 0916CB

Field Service Engineering Technician Program

The Field Service Engineer (FSE) Training program provides technicians with the core fundamentals they need to perform and covers both business and technical subjects, giving apprentices an understanding of safety procedures, math, business communications, and software applications.

The FSE is responsible for installing and maintaining the systems for customers. The FSE will provide remote and onsite support and work closely with the sales and clinical team by providing troubleshooting services for the customer. The FSE shall maintain accurate documentation of all service activities and escalating issues as needed.

Major Accountabilities:

- Work closely with regional Senior Field Service Engineers to ensure local installed base is maintained to company standards and training received is sufficient
- Installation of equipment at customer's facility to ensure full functionality according to specifications
- Provide Technical Support remotely, on-site, and via escalation management for Systems
- Provides on-site technical assistance to help troubleshoot and repair equipment. Communicate and maintain service records of performance reporting and Field Service Reports
- Communicates customer complaints to the appropriate individuals within Alcon to ensure proper recording, as per FDA requirements and company procedures
- Management of spare part and trunk inventories to ensure accurate inventory of company assets that are in the field

Apprentices in this competency-based program receive training in the classroom, on the job, in locations where the equipment they service is in use and in the manufacturing facilities where the equipment they service is manufactured. In each of these areas, individual apprentices' evaluations and ratings are completed on a weekly basis.

At completion of the program, apprentices must be able to safely and effectively perform or demonstrate the following actions:

Communication

- Use professional and effective internal and external communication skills.
- Ability to diagnose issues as described over the phone by Field Service Engineers/customers

Use of Resources

Ability to read and understand Technical and Resource Manuals

Mechanical

- Safe use of hand tools
- Ability to make and complete mechanical adjustments

Electrical/Electronics

- Setup and use a Digital Multimeter (DMM)
- Setup and use an Oscilloscope
- Setup and use High Voltage (HV) test equipment
- Setup and use a dosimeter
- Setup and use a milliamp (mA) meter

Circuit Theory

Troubleshooting

Networking/Connectivity

- ***Knowledge/Skills: (Not required)***
    - Technical proficiency servicing instruments in the field, and a general knowledge of corporate related processes and disciplines
    - Ability to troubleshoot complex electrical, electronic, pneumatic, and mechanical systems

- Use strong interpersonal and customer satisfaction skills.
- Function in a similar/comparable customer based laboratory environment
- Use Effective Time Management Skills.

- ***Computer/Software/Instrumentation:***
  - Proficient use of Microsoft products (Word, Excel, Outlook)
  - Working knowledge of various troubleshooting/analysis tools (Tiny Click, Macros, Data Acquisition, etc.)
  - Proficient use of diagnostic instrumentation and equipment such as Digital Volt Meters (DVMs), Oscilloscopes, and Micrometers

Table of Contents

References:

1. MAN - 00746 Calibration and Software Maintenance Manual
2. MAN - 00746 Installation and Hardware Maintenance Manual
3. MAN - 00743 User Manual for Selenia Software
4. MAN - 01476 Quality Control Manual
5. MAN - 00477 Technologists Workbook for Selenia and SecurView

P= (Performed) S= (Simulated) O= (Observed)

Tasks to be completed:

Installation

1. Perform Gantry Installation **Chapter 2 MAN-00745 Rev 3**

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

2. Perform Acquisition Work Station (AWS) Installation with Techmate **Chapter 3 MAN-00745 Rev 3**

Signature	Date	P S O
Signature	Date	P S O

3. Perform AWS Installation without Techmate **Chapter 4 MAN-00745 Rev 3**

Signature	Date	P S O
Signature	Date	P S O

Functional Tests Chapter 5 MAN-00745 Rev 3

1. Identify Acquisition Station Controls and Display

Signature	Date	P S O

2. Perform Initial Startup Procedures

Signature	Date	P S O

3. Perform Ground Impedance Check

Signature	Date	P S O

4. Perform Selenia Controls and Functional Tests

Signature	Date	P S O

Configurations Chapter 2 MAN-00746 Rev 3

1. Perform Initial Startup Procedures

Signature	Date	P S O

2. Enter the Site Connectivity information

Signature	Date	P S O

3. Edit the Direct Ray Operator Counsel (DROC) software configuration files

Signature	Date	P S O

4. Configure output devices

Signature	Date	P S O
Signature	Date	P S O

5. Set the gain calibration life span

Signature	Date	P S O

6. Configure the array auto-power control time

Signature	Date	P S O
Signature	Date	P S O

7. Configure the array temperature

Signature	Date	P S O
Signature	Date	P S O

Calibrations Chapter 3 MAN-00746 Rev 3

1. Place the AWS in NON-Imaging Mode

Signature	Date	P S O

2. Set exposure timing parameters

Signature	Date	P S O

3. Perform X-Ray tube Adjustments and Calibration

Signature	Date	P S O
Signature	Date	P S O

4. Perform X-Ray and light Field Compliance

Signature	Date	P S O
Signature	Date	P S O

5. Perform C-Arm Tests and Adjustments

Signature	Date	P S O
Signature	Date	P S O

6. Perform Compression System Calibration

Signature	Date	P S O
Signature	Date	P S O

7. Perform Image Receptor calibration procedures

Signature	Date	P S O
Signature	Date	P S O

8. Modify the Tissue Exposure Control (TEC) Mode

Signature	Date	P S O

9. Perform Automatic Exposure Control (AEC) Calibration

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

10. Perform Image Receptor Linearity

Signature	Date	P S O
Signature	Date	P S O

Final Site Information Chapter 4 MAN-00746 Rev 3

1. Perform System Checkout

Signature	Date	P S O

2. Perform Exposure Counter Reset

Signature	Date	P S O

3. Perform Collect site information

Signature	Date	P S O

4. Perform Backup files

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

AWS Maintenance Chapter 6 MAN-00745 Rev 3

1. Identify the components that comprise of the AWS

Signature	Date	P S O

2. Remove the covers from the AWS

Signature	Date	P S O

3. Perform AWS Preventive Maintenance

Signature	Date	P S O
Signature	Date	P S O

4. Replace (3) different AWS Components

Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O

Gantry Maintenance Chapter 7 MAN-00745 Rev 3

1. Identify the components that comprise the Gantry

Signature	Date	P S O

2. Remove the covers from the Gantry

Signature	Date	P S O

3. Perform (3) Preventive Maintenance events

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

4. Replace (3) different X-Ray and Imaging Components

Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O

5. Replace (3) different Circuit boards, Firmware and Circuit components

Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O

6. Replace (3) different Electrical Power Components and Assemblies

Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O

7. Replace (3) different Mechanical Components and Assemblies

Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O
Write in the replaced component		
Signature	Date	P S O

Software Maintenance Chapter 5 MAN-00746 Rev 3

1. Perform

   a. Getting log files

Signature	Date	P S O

   b. Set the AWS IP Address

Signature	Date	P S O

   c. Updating the default router

Signature	Date	P S O

   d. Host name and aliases

Signature	Date	P S O

e. Setting time, date, and time zone

Signature	Date	P S O

f. Changing Brick and Array IP Address

Signature	Date	P S O

g. Backup files

Signature	Date	P S O

h. Burning Anonymous CD

Signature	Date	P S O

i. Bad Pixel Mapping

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

j. Repeat Management

Signature	Date	P S O

k. Reducing print contrast of the Laser Cameras

Signature	Date	P S O

l. Reducing the display contrast on For Presentation Images

Signature	Date	P S O
Signature	Date	P S O

m. R2 Service Utility

Signature	Date	P S O
Signature	Date	P S O

n. Reinstalling the AWS Software

Signature	Date	P S O

o. Downloading/Initializing the Selenia Calibration Data

Signature	Date	P S O

p. Configure the Totoku display for Digital Imaging and Communication in Medicine (DICOM) Standard

Signature	Date	P S O

q. European Reference (EUREF) Test Pattern Grayscale settings

Signature	Date	P S O

Quality Control Chapter 2 and 3 MAN-01476 Rev 1

1. Perform the following procedures as a Medical Physicist

a. Mammographic Unit Assembly Evaluation

Signature	Date	P S O

b. Collimation Assessment

Signature	Date	P S O

c. Artifact Evaluation

Signature	Date	P S O

d. Kilovolt Peak (kVp) Accuracy and Reproducibility

Signature	Date	P S O

e. Beam Quality Assessment

Signature	Date	P S O

f. Evaluation of System Resolution

Signature	Date	P S O

g. AEC Function Performance

Signature	Date	P S O

h. Breast Entrance Exposure, Automatic Exposure Control (AEC) Reproducibility, and Average Glandular Dose (AGD)

Signature	Date	P S O

i. Radiation Output Rate

Signature	Date	P S O

j. Phantom Image Quality Evaluation

Signature	Date	P S O

k. Signal to Noise and Contrast to Noise Measurements

Signature	Date	P S O

l. Diagnostic Review Workstation QC

Signature	Date	P S O

m. Detector Ghosting

Signature	Date	P S O
Signature	Date	P S O

2. Perform the following procedures as a Radiologic Technologist

a. DICOM Printer Quality Control

Signature	Date	P S O

b. Detector Flat Field Calibration

Signature	Date	P S O

c. Artifact Evaluation

Signature	Date	P S O

d. Signal to Noise and Contrast to Noise Measurements

Signature	Date	P S O

e. Phantom Image

Signature	Date	P S O

f. Compression Thickness Indicator

Signature	Date	P S O

g. Diagnostic Review Workstation QC

Signature	Date	P S O

h. View boxes and Viewing Conditions

Signature	Date	P S O

i. Visual Checklist

Signature	Date	P S O

j. Repeat/Reject Analysis

Signature	Date	P S O

k. Compression

Signature	Date	P S O

Operating the Application

1. Perform Login, Logout and Shutdown **Chapter 2 MAN-00743 Rev 3**

Signature	Date	P S O

2. Using the Patient and Patient View Screens, Perform **Chapter 3 MAN-00743 Rev 3**

   a. Query a patient from Modality Work List (MWL) provider

Signature	Date	P S O

b. Search a patient in local database

Signature	Date	P S O

c. Create a new patient

Signature	Date	P S O

d. Select an output to send images

Signature	Date	P S O

e. Take an exposure in Manual mode

Signature	Date	P S O

f. Take an exposure in AEC mode

Signature	Date	P S O

g. Accept an image

Signature	Date	P S O

h. Add a procedure to patient study

Signature	Date	P S O

i. Non-Imaging Mode

Signature	Date	P S O

j. Simulate Capture

Signature	Date	P S O

3. Working with Images, Perform **Chapter 4 MAN-00743 Rev 3**

   a. Preview Image

Signature	Date	P S O

   b. Tools on the Preview Screen

Signature	Date	P S O

   c. Accept or reject image

Signature	Date	P S O

   d. Send image to output device

Signature	Date	P S O

   e. Review

Signature	Date	P S O

   f. Close a procedure

Signature	Date	P S O

4. Using the Menus, Perform **Chapter 5 MAN-00743 Rev 3**

   a. Main Menu functions

Signature	Date	P S O

   b. Edit Menu

Signature	Date	P S O

c. Admin Menu

Signature	Date	P S O

5. Working with Databases, Perform **Chapter 6 MAN-00743 Rev 3**

a. Patient Demographic Information

Signature	Date	P S O

b. Adding patients to local database

Signature	Date	P S O

c. Searching patient data on local database

Signature	Date	P S O

d. Edit patient data

Signature	Date	P S O

e. Add a New Procedure to an existing patient

Signature	Date	P S O

f. Add a new procedure to an open patient

Signature	Date	P S O

g. Changing patient information after accepting an image

Signature	Date	P S O

6. Clinical Procedures, Perform **Chapter 7 MAN-00743 Rev 3**

Note: Does not require an actual patient. Breast phantom or other phantom may and should be used.

a. Screening Procedure

Signature	Date	P S O

b. Working with specimens

Signature	Date	P S O

c. Accepting and storing the image

Signature	Date	P S O

d. Performing a localization procedure

Signature	Date	P S O

e. Optional Workflow Operations

Signature	Date	P S O

f. End of the day

Signature	Date	P S O

7. Review and discuss with an Application Specialist the Technologist Workbook for Selenia and SecurView.

Signature block to be signed by Application Specialist

Signature	Date

Basic Computer Usage

1. Using Terminal Window on the AWS, reboot the AWS

Signature	Date	P S O

2. Using Terminal Window on the AWS, turn off the brick

Signature	Date	P S O

3. Using Terminal Window on the AWS, review the taillog

Signature	Date	P S O

4. Using Terminal Window on the AWS, review the drapi.log

Signature	Date	P S O

5. Create a peer to peer network between the AWS and service laptop

Signature	Date	P S O

6. Transfer file from AWS to laptop

Signature	Date	P S O

7. Open the brick webpage

Signature	Date	P S O

8. Open the Selenia Service Tools web page

Signature	Date	P S O

9. Use WinFlash Array or Selenia Tools to program/ upgrade the detector

Signature	Date	P S O

Selenia Upgrade

1. Perform (3) Selenia Upgrades. Write in the Selenia Upgrade performed

   a. _____

Signature	Date	P S O

   b. _____

Signature	Date	P S O

   c. _____

Signature	Date	P S O

Additional Tasks

1. _____

Signature	Date	P S O

2. _____

Signature	Date	P S O

3. _____

Signature	Date	P S O

4. _____

Signature	Date	P S O

5. _____

Signature	Date	P S O

6. _____

Signature	Date	P S O

7. _____

Signature	Date	P S O

8. _____

Signature	Date	P S O

9. _____

Signature	Date	P S O

10. _____

Signature	Date	P S O

Service Calls

1. Document the tasks performed during the Service Call. Include the Service Request Number.

_____

_____

_____

_____

2. Document the tasks performed during the Service Call. Include the Service Request Number.

_____

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3. Document the tasks performed during the Service Call. Include the Service Request Number.

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4. Document the tasks performed during the Service Call. Include the Service Request Number.

_____

_____

_____

_____

Selenia Full Field Digital Mammography Unit:

1. Perform Installation on Selenia Full Field Mammography Unit.

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

2. Perform Upgrade on Selenia Full Field Mammography Unit.

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

3. Perform Calibration on Selenia Full Field Mammography Unit.

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

4. Perform Preventative Maintenance (PM) on Selenia Full Field Mammography Unit.

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

Check List of Additional Selenia items to cover:

_ Operating the Application
_ AEC Calibration
_ Compression Calibration
_ Backup System Files
_ Restore System Files
_ Set the IP address
_ Reinstall Application Software
_ Site Connectivity including Configuration of Outputs
_ Working with Images: copying from Dimension and uploading to Network File Transfer Protocol (NWKFTP) Server
_ Artifact Evaluation
_ Pixel Mapping
_ Evaluation of System Resolution
_ Signal to Noise and Contrast to Noise
_ Repeat Reject Analysis
_ Collimator
_ Grid or Array replacement
_ X-Ray tube Adjustments and Calibration
_ _____
_ _____
_ _____

Service Notes:

_____
_____
_____

Dimensions – 2D and 3D Hologic Mammography Medical Device

1. Perform Installation on Dimension Unit

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

2. Perform Upgrade on Dimension Unit

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

3. Perform Calibration on Dimension Unit

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

4. Preventive Maintenance (PM) on Dimension Unit

Signature	Date	P S O
Signature	Date	P S O
Signature	Date	P S O

Check List of Additional Dimension items to cover:

_ Operating the Application

_ AEC Calibration

_ Compression Calibration

_ Backup System Files

_ Restore System Files

_ Set the IP address

_ Reinstall Application Software

_ Site Connectivity including Configuration of Outputs

_ Working with Images: copying from Dimension and uploading to NWKFTP Server

_ Artifact Evaluation

_ Pixel Mapping

_ Evaluation of System Resolution

_ Signal to Noise and Contrast to Noise

_ Repeat Reject Analysis

_ Collimator

_ Grid or Array replacement

_ X-Ray tube Adjustments and Calibration

_ _____

_ _____

_ _____

Service Notes:

_____
_____
_____
_____
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Quantitative Digital Radiography (QDR) System Certification Requirements

Certification must be completed on an "A" model Discovery, Delphi, or QDR 4500. At the discretion of the facilitator, the certification process can be done individually or as part of a group. Certification should be successfully completed within 7 to 8 hours.

During the certification, you can use any materials (printed or electronic) provided to you by Hologic. You can also ask the facilitator about the system history or for technical help. The facilitator may play both the role of a customer or technical support depending upon the situation. Your interactions should be appropriate.

You will be evaluated on mechanical and electrical skills, computer and product knowledge, use of appropriate references (such as technical manuals), and interpersonal skills including customer relations. The time to complete certification, level of success, and any technical assistance you require will be considered in your evaluation.

Prior to certification, system setup by the facilitator is required. Resource requirements include laptop computer with DICOM viewer, network crossover cable, standard FE tool kit, X-ray survey meter, QDR special service tools, QDR Service Tools CD, and QDR software CD.

Certification Procedure

Please read the entire procedure before starting. Troubleshoot and resolve all problems as each problem is observed. If you need help or have a question, contact the facilitator.

1. Startup system and login.

Signature	Date	P S O

2. Run daily Quality Control (QC) procedure.

Signature	Date	P S O

3. Create a new patient and perform an Anterior-Posterior (AP) spine scan.

Signature	Date	P S O

4. Verify proper image quality and correct Bone Mineral Density (BMD), Body Mass Composition (BMC), and Area.

Signature	Date	P S O

5. Create a report and send as a DICOM report to the local host.

Signature	Date	P S O

6. View the image on the local host using Physician's Viewer, then creates a Direct Exchange (DX) Report and prints the report.

Signature	Date	P S O

7. Archive all scans, perform a system backup, and create an XP System Restore Point.

Signature	Date	P S O

8. Complete and print a Field Service Report for the corrective actions performed during the certification practical as if it were an actual customer visit, using "Hologic Bedford Service Training" as the customer name.

Signature	Date	P S O

Fluoroscan System Requirements

Certification must be completed on each of two systems: an InSight and a Premier. At the discretion of the facilitator, the certification process can be done individually or as part of a group. Certification on both systems should be successfully completed within 5 to 6 hours.

During the certification, you can use any materials (printed or electronic) provided to you by Hologic. You can also ask the facilitator about the system history or for technical help. The facilitator may play both the role of a customer or technical support depending upon the situation. Your interactions should be appropriate.

You will be evaluated on mechanical and electrical skills, computer and product knowledge, use of appropriate references (such as technical manuals), and interpersonal skills including customer relations. The time to complete certification, level of success, and any technical assistance you require will be considered in your evaluation.

Prior to certification, system setup by the facilitator is required. Resource requirements include laptop computer with DICOM viewer, network crossover cable, standard FE tool kit, X-ray dosimeter, Fluoroscan special service tools, Fluoroscan Service Tools CD, InSight software CD, DICOM Send option software key, and system backup media for InSight.

Certification Procedure

Please read the entire procedure before starting. Troubleshoot and resolve all problems as each problem is observed. If you need help or have a question, contact the facilitator.

1. Start up one system and login.

Signature	Date	P S O
Signature	Date	P S O

2. Create a new patient and take an image.

Signature	Date	P S O
Signature	Date	P S O

3. Verify proper image quality.

Signature	Date	P S O
Signature	Date	P S O

4. On the InSight system only, send and view the image on a remote computer (your laptop) using a DICOM viewer (such as Physician's Viewer).

Signature	Date	P S O
Signature	Date	P S O

5. Verify that system Millirad (mR) output does not exceed maximum specification at full power.

Signature	Date	P S O
Signature	Date	P S O

6. Complete and print a Field Service Report for the corrective actions performed during the certification practical as if it were an actual customer visit, using "Hologic Bedford Service Training" as the customer name.

Signature	Date	P S O
Signature	Date	P S O

7. Repeat the above steps on the second system.

Signature	Date	P S O
Signature	Date	P S O

Training Events

Signature in the signature block indicates the apprentice discussed, performed, simulated, or observed the requirements of the entire Training Event successfully.

1. Orientation

Signature	Date

2. Manufacturing training Delaware

Signature	Date

3. Manufacturing training Connecticut

Signature	Date

4. Multicare Platinum training

Signature	Date

5. Selenia Service training

Signature	Date

6. Advanced Selenia Training

Signature	Date

7. DICOM training

Signature	Date

8. Image Checker training

Signature	Date

9. Technical Phone Support

Signature	Date

10. On-the-Job Learning

Signature	Date

RELATED INSTRUCTION OUTLINE
FIELD SERVICE ENGINEER (Medical)
O*NET-SOC CODE : 49-2094.00 RAPIDS CODE : 0916CB

Orientation…… 24 hours

1. Hologic Organization and Culture
2. HR Benefits
3. Technical Support Overview
4. Field Service Overview
5. Travel Policy
6. IT Setup
7. OLM Training (Online Learning Management)
8. Radiation Safety
9. Expense Reports
10. eTime
11. Responsibilities of Apprentice
12. Hologic Apprentice Feedback Report

DICOM Networks for Service Engineers…… 54 hours

1. Hologic networking and connectivity products overview
2. DICOM and network communications theory
3. The DICOM Standard and DICOM Conformance Statements
4. Hologic and Windows software components
5. Windows power user techniques
6. Installation and setup of Hologic network components
7. Practical DICOM and network troubleshooting
8. Common problems description and resolution
9. Centralized archives
10. Workable configurations
11. Workflow considerations

Image Analytics and Image Distribution Service Training…….. 28 hours

1. System description
2. Configuration
3. Features
4. Processing
5. Workflow of all Image Analytics (ImageChecker CAD, Quantra, DigitalNow HD, BACS), Scanning Platforms (DMax, LS/LX, DM), and SecurXchange (Archive, Router) products

SV-DX and SecurXchange Router/Archive and MultiView MM……..36 hours

1. Online Dell Hardware Server Training
2. Diagnostics and trouble shooting
3. Basic connectivity as it applies to the SV-DX product line.
4. SV-DX application training.
5. Field concerns and gotchas.
6. Break fix.
7. MultiView MM components and configuration
8. Confirmation that all MultiView MM functions work in order to ensure the Apps Specialists can provide training.
9. QAWeb reinstallation and calibration settings.
10. SecurView RAID 5 configurations and disk rebuilds

Selenia Service Training…… 60 hours

1. Describe the MQSA/ FDA/ HIPPA/ Seismic Requirements
2. Operate and configure the Selenia Dimensions system
3. Perform necessary quality control functions of the system
4. Gain internal access to the system and identify all system components
5. Gain internal access to and identify all components of the Dimensions digital detector
6. Perform appropriate system backups
7. Perform system upgrades accurate to the timing of the class
8. Perform necessary system calibrations for all aspects of operation
9. Perform AEC calibration
10. Understand image quality as it pertains to the Dimensions system
11. Configure basic DICOM connectivity of the Dimensions system
12. Install and calibrate the Affirms Breast Biopsy Guidance System
13. Access log files and troubleshoot issues
14. Perform pixel mapping for 2D and Tomo images

MultiCare Platinum…… 56 hours

1. Describe MultiCare Platinum
2. Stereo Loc II (Analog)
3. Digital Stereo Loc II (differences only as digital is taught separately in Bedford)
4. Film Digitizer.
5. Clinical Application
6. Operation
7. Preventive Maintenance Inspections (PMIs)
8. Troubleshooting and Servicing

Dimensions Service Training…… 60 hours

1. Describe the MQSA/ FDA/ HIPPA/ Seismic Requirements
2. Operate and configure the Selenia Dimensions system
3. Perform necessary quality control functions of the system
4. Gain internal access to the system and identify all system components
5. Perform appropriate system backups
6. Perform necessary system calibrations
7. Perform AEC calibration
8. Configure basic DICOM connectivity of the Dimensions system
9. Configure and operate the AWM workflow manager
10. Perform appropriate system backups
11. Install and calibrate the Affirm Breast Biopsy Guidance System
12. Operate and configure SecurView DX workstation
13. Access log files and troubleshoot issues

Advanced Selenia for Service Training…… 36 hours

1. Have an in depth knowledge of how the Selenia operates.
2. Locate and understand various log files to improve/increase troubleshooting skills as it pertains to the Selenia.
3. Install Solaris 10 and apply fresh install of Selenia application on Ultra 45s.
4. Retrieve P.O.S.T. of both array and brick for diagnostic comparisons.
5. Configure MWL.
6. Configure MIMS Plus or PACS.
7. Set DICOM flags and use basic DICOM understanding to read logs and troubleshoot errors.
8. Have a better understanding of Getlogs and gain knowledge to retrieve missing or corrupt files.
9. Apply trouble-shooting methodology learned in class to reduce downtime.

Fluoroscan Systems Service Training…… 40 hours

1. Fluoroscan system overview and maintenance philosophy
2. Function and location of system components
3. System controller components
4. C-arm components
5. System enclosure components
6. System operation
7. Operator controls and indicators
8. System theory of operation
9. System block diagram
10. System wiring diagram
11. Description of test points, board layout, basic function

12. Remove and replace system components
13. System controller
14. X-Ray controller PCB
15. Image processor PCB
16. Power supplies
17. X-ray source/high voltage power supply assembly
18. Control panel controller (or KV/filament driver assembly)
19. Collimator assembly
20. RIU or flat panel detector
21. System adjustments and calibration
22. System troubleshooting and test procedures
23. Preventative maintenance procedure
24. Spare parts lists
25. How to contact technical support

QDR Service Training…….. 40 hours

1. Describe the QDR system maintenance philosophy
2. Locate and identify the function of major system components
3. Locate and describe the system operator controls
4. Operate the system software
5. Remove and replace field replaceable components
6. Perform system adjustments and calibration
7. Perform the preventative maintenance procedure
8. Describe the differences between the QDR 4500, Delphi, Discovery, and Explorer
9. Describe how to get help

Total 434 hours