North Carolina Department of Health and Human Services
Division of Health Service Regulation

Pat McCrory
Governor

Aldona Z. Wos, M.D.
Ambassador (Ret.)
Secretary DHHS

Drexdal Pratt
Division Director

December 10, 2014

Timothy Ludwig
Vice President, Ancillary Services
Carolina East Health System
Post Office Box 12157
New Bern, North Carolina 28561-2157

Exempt from Review - Replacement Equipment
Facility or Business: Carolina East Medical Center
Project Description: Replace Linear Accelerator
County: Craven
FID #: 923126

Dear Mr. Ludwig:

In response to your letter of November 20, 2014, the above referenced proposal is exempt from certificate of need review in accordance with N.C.G.S 131E-184(a)(f). Therefore, you may proceed to acquire, without a certificate of need, the Varian Clinac iX Linear Accelerator to replace the existing Varian Clinac 2011 EX Linear Accelerator located in Vault #2 of the Oncology Building. This determination is based on your representations that the existing unit will be removed from North Carolina and will not be used again in the State without first obtaining a certificate of need.

Moreover, you need to contact the Acute and Home Care Licensure and Certification Section, the Radiation Protection Section and the Construction Section of the Division of Health Service Regulation (DHSR) to determine if they have any requirements for development of the proposed project.

It should be noted that this Agency's position is based solely on the facts represented by you and that any change in facts as represented would require further consideration by this Agency and a

separate determination. If you have any questions concerning this matter, please feel free to contact this office.

Sincerely,

Jane Rhoe-Jones
Project Analyst

Martha Frisone, Interim Chief
Certificate of Need Section

cc: Acute and Home Care Licensure and Certification, DHSR
Radiation Protection, DHSR
Construction Section, DHSR
Medical Facilities Planning Branch, DSHR

CAROLINAEAST
HEALTH SYSTEM

CarolinaEast Medical Center

CarolinaEast Diagnostic Center

CarolinaEast Surgery Center

CarolinaEast Rehabilitation Hospital

CarolinaEast Heart Center

CarolinaEast Urology Center

CarolinaEast Internal Medicine

CarolinaEast Pediatrics

CarolinaEast Gastroenterology

CarolinaEast Cardiac, Thoracic & Vascular Surgery

CarolinaEast Ear, Nose & Throat

CarolinaEast Physical Medicine & Rehabilitation

CarolinaEast Home Care

Crossroads Mental Health

December 8, 2014

Attn: Jane Rhoe-Jones
CON Project Analyst

Dear Ms. Jones,

Let this letter serve as the attestation that the replacement linear accelerator, for which we recently filed a letter of no review, is located on the same CarolinaEast Medical Center campus as the administrative/fiscal control of the medical center.

Should you have any further questions or concerns please contact me. My information is below.

Sincerely,

Tim Ludwig
CarolinaEast Health Center
VP of Ancillary Services
(252)633-8999
tludwig@carolinaeasthealth.com

rhoe-jones, jane e

From: Timothy Ludwig <TLudwig@carolinaeasthealth.com>
Sent: Thursday, December 04, 2014 3:05 PM
To: rhoe-jones, jane e
Subject: FW: Linear Accelerator Replacement
Attachments: cemc-site2014.pdf; New LinnAcc-2014.pdf

Attached are two drawings that show the location of the proposed replacement linac. Please don't hesitate to let me know if there is anything else that I can provide.

Respectfully, Tim

From: Timothy Ludwig
Sent: Thursday, December 04, 2014 2:19 PM
To: 'rhoe-jones, jane e'
Subject: RE: Linear Accelerator Replacement

Good afternoon Jane, it is great to hear from you. I trust that you are doing well.

I will be providing you with a site map showing where the linac will be located in reference to our campus. It is located in our Oncology/Minor Emergency Building which is connected to our main facility on our main campus. The proposed replacement linac will be installed in vault #2 which was built in late 1999-2001.

I will forward the site map with the Oncology Building and vault #2 identified as soon as I receive it from our Facilities VP.

Respectfully, Tim

From: rhoe-jones, jane e [mailto:jane.rhoe-jones@dhhs.nc.gov]
Sent: Thursday, December 04, 2014 1:58 PM
To: Timothy Ludwig
Subject: FW: Linear Accelerator Replacement

Tim,

I failed to ask you to provide a site map showing that the equipment is on the main campus. Also please attest to the fact that the linac is on the same campus as is the fiscal/administrative control of the hospital.

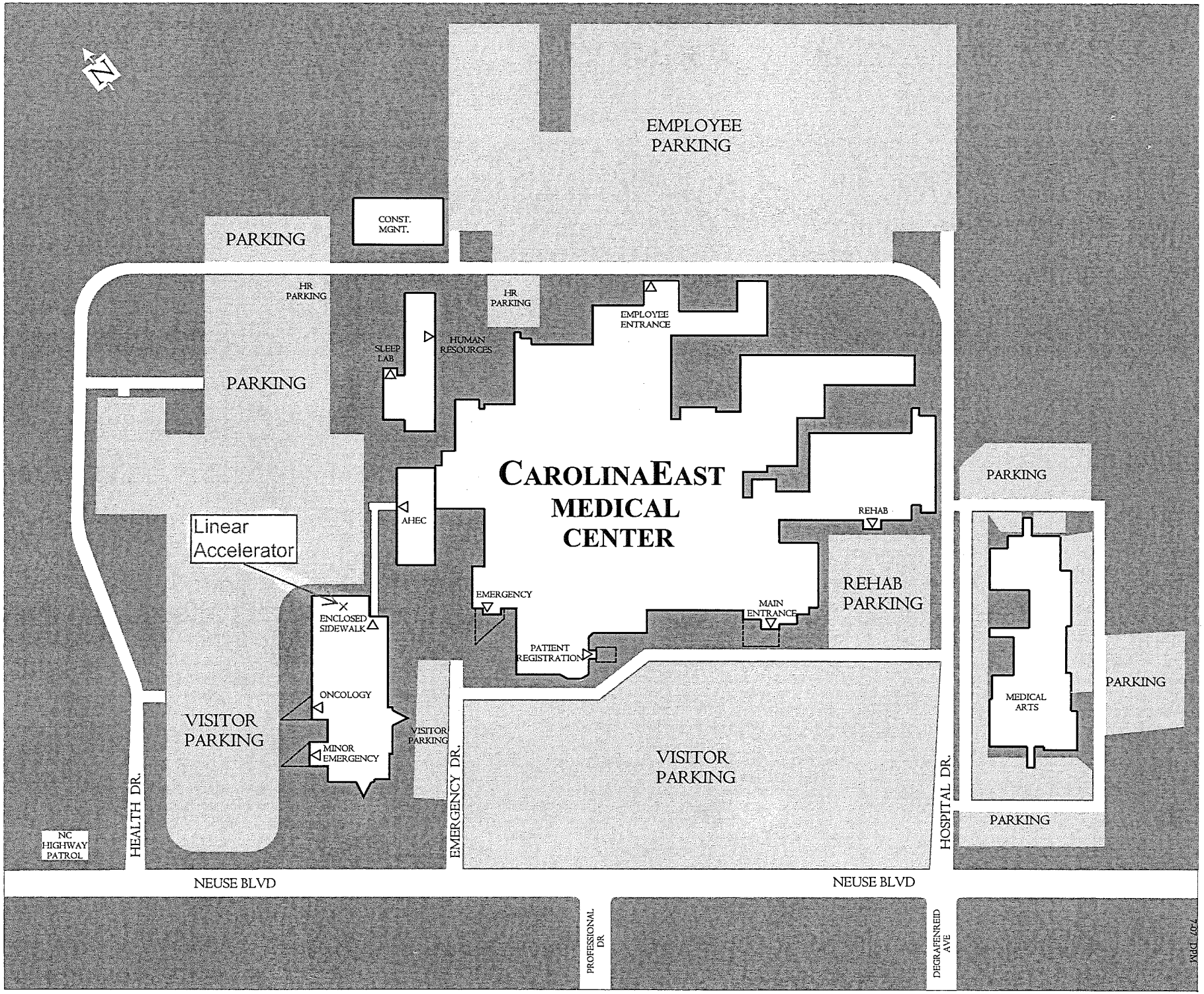
Thank you,
Jane

From: rhoe-jones, jane e
Sent: Thursday, December 04, 2014 1:13 PM
To: 'Timothy Ludwig'
Subject: Linear Accelerator Replacement

Good afternoon Tim,

I am reviewing your exemption request to replace one of your linear accelerators. In exactly what floor/room and/or vault is the equipment to be replaced housed?

Thank you,
Jane Rhoe-Jones
CON Project Analyst
919.855.3873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HR PARKING
HR PARKING
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SLEEP LAB
PARKING
CAROLINAEAST MEDICAL CENTER
PARKING
AHEC
REHAB
Linear Accelerator
REHAB PARKING
EMERGENCY
MAIN ENTRANCE
ENCLOSED SIDEWALK
PATIENT REGISTRATION
PARKING
ONCOLOGY
MEDICAL ARTS
VISITOR PARKING
VISITOR PARKING
MINOR EMERGENCY
VISITOR PARKING
HEALTH DR.
EMERGENCY DR.
HOSPITAL DR.
NC HIGHWAY PATROL
PARKING
NEUSE BLVD
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PROFESSIONAL DR
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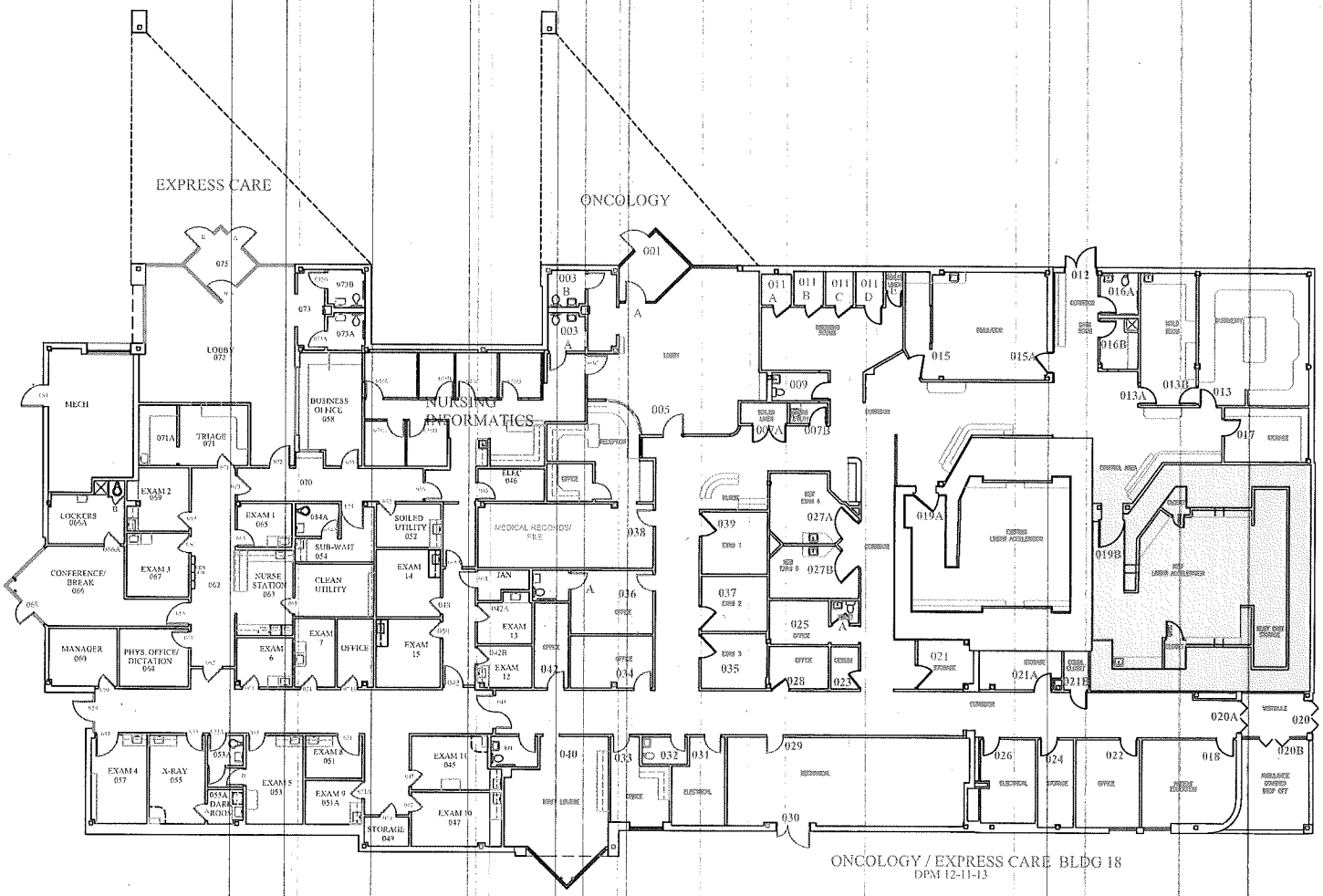
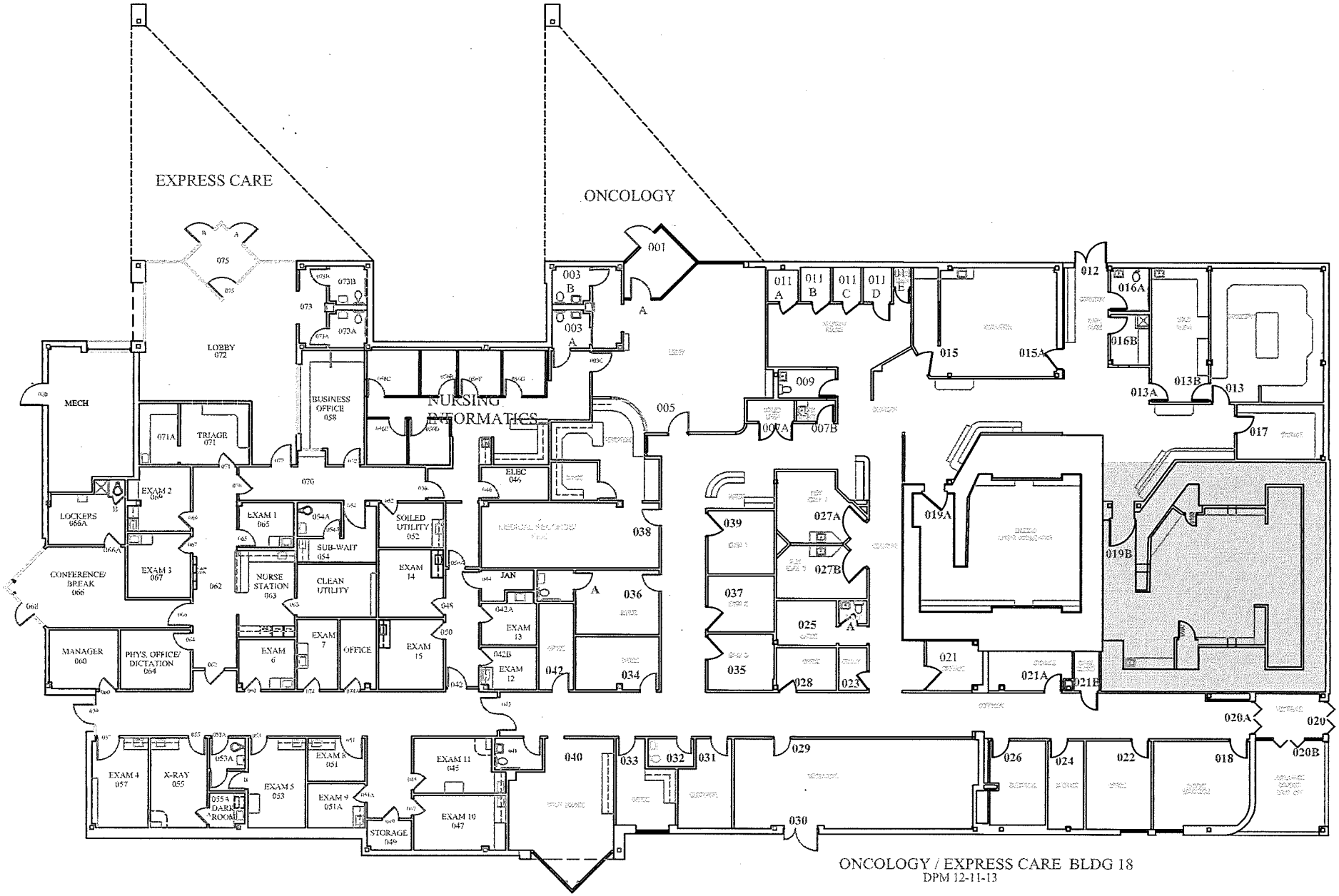


ONCOLOGY / EXPRESS CARE BLDG 18
DPM 12-11-13


EXPRESS CARE
ONCOLOGY
LOBBY 072
MECH
TRIAGE 071
BUSINESS OFFICE 058
NURSING INFORMATICS
ELEC 046
LOCKERS 066A
EXAM 2 066
EXAM 1 065
SOILED UTILITY 052
SUB-WAIT 054
CONFERENCE/ BREAK 066
EXAM 3 067
NURSE STATION 063
CLEAN UTILITY
EXAM 14
JAN
MANAGER 060
PHYS. OFFICE/ DICTATION 064
EXAM 6
EXAM 7
OFFICE
EXAM 15
EXAM 13
EXAM 12
EXAM 4 057
X-RAY 055
EXAM 5 053
EXAM 8 051
EXAM 9 051A
EXAM 11 045
EXAM 10 047
STORAGE 049
DARK ROOM
015
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019B
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ONCOLOGY / EXPRESS CARE BLDG 18
DPM 12-11-13

CAROLINAEAST
HEALTH SYSTEM

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CarolinaEast Ear, Nose & Throat
CarolinaEast Physical Medicine & Rehabilitation
CarolinaEast Home Care
Crossroads Mental Health

November 20, 2014

Ms. Martha Frisone, Interim Chief
Certificate of Need Section
Division of Health Service Regulation
2704 Mail Service Center
Raleigh, NC 27699-2704

RE: Equipment Replacement Project for CarolinaEast Health System Linear Accelerator Equipment

Dear Ms. Frisone:

Pursuant to N.C.G.S. 131E-184 (a)(7) -Exemptions from Review-of the Certificate of Need Statute, I am writing to inform you of CarolinaEast Health System's plans to replace one existing linear accelerator currently operating at CarolinaEast Medical Center in New Bern.

Pursuant to N.C.G.S. 131E-184 (a)(7), "the Department shall exempt from certificate of need review a new institutional health service if it receives prior written notice from the entity proposing the new institutional health service, which notice includes an explanation of why the new institutional health service is required, for any of the following: . . . (7) To provide replacement equipment."

N.C.G.S. 131E-176 (22a) states "'[r]eplacement equipment' means equipment that costs less than two million dollars ($2,000,000) and is purchased with the sole purpose of replacing comparable medical equipment currently in use which will be sold or otherwise disposed of when replaced."

Pursuant to N.C.G.S. 131E-184 (f), "the Department shall exempt from certificate of need review the purchase of any replacement equipment that exceeds the two million dollar ($2,000,000) threshold set forth in G.S. 131E-176 (22a) if all of the following conditions are met:

(1) The equipment being replaced is located on the main campus.

P.O. BOX 12157 2000 NEUSE BOULEVARD NEW BERN, NC 28561 252 / 633 8111 CAROLINAEASTHEALTH.COM

(2) The Department has previously issued a certificate of need for the equipment being replaced....
(3) The licensed health service facility proposing to purchase the replacement equipment shall provide prior written notice to the Department, along with supporting documentation to demonstrate that it meets the exemption criteria of this subsection"

The total capital cost of the project will be $2,672,331, which exceeds the $2,000,000 threshold set forth in N.C.G.S. 131E-176 (22). However, all conditions set forth in N.C.G.S. 131E-184 (f) are met. Specifically, the equipment being replaced is located on CarolinaEast Health System's main campus, the Department has previously issued a certificate of need for the equipment being replaced, and CarolinaEast Health System is providing prior written notice of its intent to purchase the replacement equipment herein. Please see Attachment 1 for a proposed capital cost table demonstrating the project costs. Please see Attachment 2 for equipment quote for the proposed equipment.

The replacement equipment will be purchased for the sole purpose of replacing comparable equipment currently in use. *"Comparable medical equipment"* is defined under 10A NCAC 14C .0303(c) as *"equipment which is functionally similar and which is used for the same diagnostic and treatment purposes."* Further, replacement equipment is considered comparable to the existing equipment under the following circumstances as outlined under 10A NCAC 14C .0303(d):

1. *it has the same technology as the equipment currently in use, although it may possess expanded capabilities due to technological improvements; and*
2. *it is functionally similar and is used for the same diagnostic or treatment purposes as the equipment currently in use and is not used to provide a new health service; and*
3. *the acquisition of the equipment does not result in more than a 10% increase in patient charges or per procedure operating expenses within the first twelve months after the replacement equipment is acquired.*

As discussed below, CarolinaEast Health System's proposed new replacement equipment is considered comparable pursuant to 10 NCAC 14C .0303 for the following reasons:

1. The proposed replacement equipment will be used specifically for the provision of performing radiation therapy treatments, as is the existing equipment. The replacement equipment will perform all

procedures currently performed on the existing equipment. Although the replacement equipment possesses some expanded capabilities due to technological improvements, the replacement equipment will perform the same general range of services. Essentially the replacement equipment will have the same functionality as the equipment currently in use.

2. The function of, and services provided by the replacement equipment, will essentially be identical to the existing equipment. CarolinaEast Health System intends to use the replacement equipment for the same procedures which are currently available on the existing equipment. No new health service will be provided as a result of the replacement. Please refer to Attachment 3 for an equipment comparison table demonstrating that the proposed replacement equipment is comparable to the equipment currently in use.
3. The acquisition and operation of the replacement equipment will not result in an increase of more than 10 percent in patient charges or the operational cost per patient of providing the service within the first twelve months after the replacement equipment is acquired.

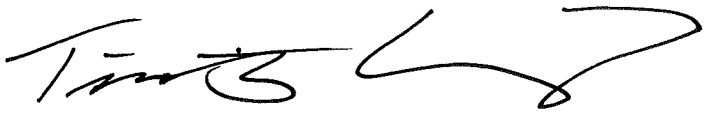
It is important to note that 10 NCAC 14C .0303 also defines equipment that is *"not comparable"* under subsection (e). Replacement equipment is not considered comparable if:

1. *the replacement equipment is new or reconditioned, the existing equipment was purchased second-hand, and the replacement equipment is purchased less than three years after the acquisition of the existing equipment; or*
2. *the replacement equipment is new, the existing equipment was reconditioned when purchased, and the replacement equipment is purchased less than three years after the acquisition of the existing equipment; or*
3. *the replacement equipment is capable of performing procedures that could result in the provision of a new health service or type of procedure that has not been provided with the existing equipment; or*
4. *the replacement equipment is purchased and the existing equipment is leased, unless the lease is a capital lease; or*
5. *the replacement equipment is a dedicated PET scanner and the existing equipment is:*
    A. *a gamma camera with coincidence capability; or*
    B. *nuclear medicine equipment that was designed, built, or modified to detect only the single photon emitted from nuclear events other than positron annihilation.*

The replacement equipment will be purchased in new condition as was the existing equipment being replaced. As noted above, although the replacement equipment possesses some expanded capabilities due to technological improvements, the replacement equipment will perform the same general range of services as the existing unit. CarolinaEast Health System owns the existing equipment and will own the replacement equipment. Therefore, the replacement equipment does not meet the definition of "*not comparable.*"

Upon replacement, the existing equipment will be removed and taken out of the state of North Carolina, as documented in the letter included in Attachment 4.

Sincerely,



Timothy Ludwig
Vice President, Ancillary Services
CarolinaEast Health System
Attachments

PROPOSED CAPITAL COSTS

Project Name: CarolinaEast Medical Center Linear Accelerator Replacement

Proponent: CarolinaEast Medical Center

A. **Site Costs**

(1)	Full purchase price of land		$_____
	Acres _____ Price per Acre		$_____
(2)	Closing costs		$_____
(3)	Site Inspection and Survey		$_____
(4)	Legal fees and subsoil investigation.		$_____
(5)	Site Preparation Costs		
	Soil Borings	$_____	
	Clearing-Earthwork	$_____	
	Fine Grade For Slab	$_____	
	Roads-Paving	$_____	
	Concrete Sidewalks	$_____	
	Water and Sewer	$_____	
	Footing Excavation	$_____	
	Footing Backfill	$_____	
	Termite Treatment	$_____	
	Other (Specify)	$_____	
	Sub-Total Site Preparation Costs		$_____
(6)	Other (Specify)		$_____
(7)	**Sub-Total Site Costs**		$_____

B. **Construction Contract**

(8)	Cost of Materials		
	General Requirements	$_____	
	Concrete/Masonry	$_____	
	Woods/Doors & Windows/Finishes	$_____	
	Thermal & Moisture Protection	$_____	
	Equipment/Specialty Items	$_____	
	Mechanical/Electrical	$_____	
	Other (Specify)	$_____	
	Sub-Total Cost of Materials		$_____
(9)	Cost of Labor		$_____
(10)	Other (Specify)		$_____
(11)	**Sub-Total Construction Contract**		$ 169,500

C. **Miscellaneous Project Costs**

(12)	Building Purchase	$_____
(13)	Fixed Equipment Purchase/Lease	$2,462,831
(14)	Movable Equipment Purchase/Lease	$_____
(15)	Furniture	$_____
(16)	Landscaping	$_____
(17)	Consultant Fees	

	Architect and Engineering Fees	$ _____		
	Legal Fees	$ _____		
	Market Analysis	$ _____		
	Other (Specify)DHSR fee	$ 1,500		
	Sub-Total Consultant Fees		$1,500	
(18)	Financing Costs (e.g. Bond, Loan, etc.)		$_____	
(19)	Interest During Construction		$_____	
(20)	Other (Specify)Contingency		$38,500	
(21)	**Sub-Total Miscellaneous**			$ 2,502,831
(22)	**Total Capital Cost of Project** (Sum A-C above)			$2,672,331

I certify that, to the best of my knowledge, the costs of the proposed project named above are complete and correct.

_____ Date Certified: 11.6.14
(Signature of Licensed Architect or Engineer)

I assure that, to the best of my knowledge, the above costs for the proposed project are complete and correct and that it is my intent to carry out the proposed project as described.

_____ VP Ancillary Services Date Signed: 11-6-14
(Proponent - Signature of Officer) (Title of Officer)

VARIAN
medical systems

Quotation

AXM20140501-001C

Quotation For:

Scott Conley
CAROLINAEAST HEALTH SYSTEM
Dept. of Radiation Oncology
2000 Neuse Blvd.
New Bern, NC 28560
(252) 633 - 8730 FAX: (252) 633 - 8736

Please address inquiries and replies to:

Jamie Bellush
Varian Medical Systems
2250 Newmarket Parkway
Ste 120
Marietta, GA 30067
(205) 577 - 7839 FAX: (678) 255 - 3850
jamie.bellush@varian.com

Attachr

Your Reference:	*Quotation Firm Until:* **September 19, 2014**
FOB Point: **US2 FOB: Destination**	*Shipping Allocation:* **180 DAYS ARO**
Payment Terms: **See Terms and Conditions**	**Varian Terms and Conditions of Sale 1652U Attached**

CarolinaEast Health Systems

CONFIDENTIAL

Pricing Valid until September 19, 2014

Contingent on board approval by January 15th 2015 and North Carolina replacement CON approval.

CAROLINAEAST HEALTH SYSTEM

Quotation Total of: USD $2,462,831 Accepted by:

Signature: [signature]

Name: Tim Ludwig

Title: VP Ancillary Services

Date: Sept. 18, 2014

For this purchase, we designate ** NONE ** as our Institution's Primary Group Purchasing Organization affiliation. Any change will be Indicated below:

☐ AmeriNet ☐ Aptium ☐ BJC ☐ Broadlane
☐ CHW ☐ Consorta/HPG ☐ KP Select ☐ Magnet
☐ Matrix ☐ MedAssets ☐ Novation ☐ Premier
☐ ROI ☐ USO ☐ VA Gov ☐ None

Varian Medical Systems

Submitted by:

[signature]
(Signature)

Name: Jamie Bellush

Title: District Manager

Date: September 3, 2014

Item	Qty	Product Description

Section 1 Clinac IX with RapidArc and fine isocenter

1.01 1 **iX Package**

1.02 1 **High Energy Clinac iX**

Streamlined, high performance and reliable platform for a broad range of imaging and treatment options.

Standard Features include:
Fine beam matching per RAD 9510
Extended collimator head rotation
Dual independent collimators
Dynamic arc photon treatment
Electron beam shaping kit per RAD 2045
Ergonomic command center
Digital gantry display
Standard spare parts
Product manuals
One (1) year full warranty
Installation

1.03 1 **INCL ED: CL100 Clinac Basic Operations**

- Includes Tuition and Materials for ONE person.
- Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.
- Training is non-refundable and non-transferable.
- Offer is valid for 18 months after installation of product.

EDUCATION:

Clinac Operations is a course designed for those personnel responsible for the routine operation and/or supervision of the daily clinical use of the Clinac. It is directed primarily towards Radiation Therapists and Radiation Oncologists. It is recommended that students attend the Clinac Operations course shortly before clinical use and patient's treatments commence.

Course provides a general overview of the machine concepts, familiarity with controls and features and an understanding of the interlock matrix. The emphasis throughout the course is to present the subject matter from a clinical use perspective; however the primary emphasis is not on the day-to-day console programming, but rather an overall understanding of the Clinac function and operation. Extensive hands-on laboratory exercises are included.

Prerequisites: None

For detailed course information and on-line registration, visit the Varian website at http://www.varian.com/dyna/otrn/onln_crslist.html

Item	Qty	Product Description
1.04	1	**STD TRNG: Clinac iX Ops** Training is included with the purchase of Varian accelerator. Training plan details will be provided by the training management team as part of your product implementation process. - Offer is valid for 18 months after installation of product. Training is not transferable with other products and services
1.05	1	**INCL ED: HEC100 High-Energy Clinac Support** - Includes Tuition and Materials for ONE person. - Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated. - Training is non-refundable and non-transferable. - Offer is valid for 18 months after installation of product. Clinac Support is a course designed for those personnel responsible for the equipment maintenance. It is directed primarily towards Physicists and Biomedical Engineers, however it may be appropriate for Dosimetrists and/or Radiation Therapists who have a background in electronics. Course acquaints and familiarizes the student with the general accelerator function, operation and routine support. Provides a basic understanding of the machine concepts and day-to-day maintenance while also providing a working vocabulary for communication with service personnel. Prerequisites: None For detailed course information and on-line registration, visit the Varian website at http://www.varian.com/otrn/index.html
1.06	1	**Display of Photon Energy: BJR17**
1.07	1	**Photon Dose Rate: 600 MU/Min** Photon dose rate (6-25MV): 100, 200, 300, 400, 500 and 600MU/min
1.08	1	**5 Electrons Grp 1: 6,9,12,15,18 MeV**
1.09	1	**Size of Electron Applicators: 6cm x 6cm** Size of electron applicators (cm): 6x6, 10x10, 15x15, 20x20, 25x25
1.10	1	**Upper Wedges: 20cm x 40cm** 15, 30, and 45 degree wedges with a maximum field size of 20 cm x 40 cm, 60 degree wedge with a maximum field size of 15 cm x 40 cm.
1.11	1	**Energy of Spec Electron Procedures: 6MeV** High dose rate electron beam for high dose total skin electron (HDTSE) mode and total body electron (TBE) mode.

Item	Qty	Product Description
1.12	1	**Scale Convention: Varian IEC 60601-2-1** Scale convention per IEC Publication 601-2-1, 1981
1.13	1	**Counterweight**
1.14	1	**Four Piece Breakdown** Four Piece Breakdown is an expanded breakdown to provide separation of drive stand and gantry reducing dimensions necessary for access to site. (Per RAD 2310)
1.15	1	**New Universal Baseframe 52" Fixed Floor**
1.16	1	**Exact Couch with IGRT Couch Top** The Exact IGRT Couch Top is designed specifically to facilitate state-of-the-art image-guided radiation therapy (IGRT) treatments. Manufactured from robust carbon fiber, the Exact IGRT Couch top is free of metal or other obstructions that can obscure the imaging process, thereby reducing artifacts in advanced IGRT imaging techniques such as Cone-Beam CT. FEATURES: - Supporting patients up to 500 lbs (227 kg). - Fully compatible with existing Indexed Immobilization® accessories for accurate patient positioning. - Head-end hook for attaching accessories such as SRS head frames. - Emergency off buttons on both sides of couch. - Grab handles for easy manual motion. NOTES - For use with all current Clinac, Trilogy, and Acuity systems. - Identical couch for simulation and treatment aids in duplicating patient setup. - Available as an easy upgrade for the Exact couch (replace couch top only). - Automated repositioning without re-entering the vault. - Side panel controls to adjust all couch motions. - Switches for wall and back-pointer lasers, as well as room, field and range-finder lights.
1.17	1	**20" LCD Monitor (4:3)**
1.18	1	**20" LCD Monitor (4:3)**
1.19	1	**Millennium MLC, 120 Leaf** 120 Leaf Millennium Multileaf Collimator System includes: -Controller MLC 3rd party RV interface (note: The 3rd party RV vendor is responsible for the installation and configuration of the interface) -Multileaf Collimator Accessory System (Provided in lieu of non-MLC Accessory System) including -Accessory Mount (65.4cm Source to Tray Distance Only) -Compensator Mount, ONE (1) Upper compensator tray -Mechanical front pointer (holder and 4 rods)

Item	Qty	Product Description
		-Electron applicators, one of each: 6x6 or 6x10, 10x10, 15x15, 20x20, 25x25 -Electron beam shaping kit -TEN (10) Lower Compensator trays -Upper Bi-directional Wedge Sets (20 cm or 30cm) OTHER: MLC Standard Spare Parts Kit Product Manuals Installation ONE (1) year full warranty
1.20	1	**Large Field IMRT** Large Field IMRT allows multiple-carriage- fields to be easily delivered to the patient more efficiently, to reduce treatment times. LFIMRT delivers large IMRT fields, consisting of two to three total carriage moves, with a single press of the beam on, at a single gantry angle. If the Clinac is equipped with a PortalVision MV imager, whenever the radiation field fits entirely within the MV imaging panel, LFIMRT makes it possible to acquire an open field image of the anatomic area surrounding the entire CIAO, subject to the limitations of the full area of the MV imager. Includes Maximum Programmable MU option, which increases the maximum number of MU which can be associated and delivered for a single field (or subfield) of a non-RapidArc Plan, up to 1999 MU. Maximum Programmable MU for non-RapidArc plans increases the continuously deliverable beam doses for LRIMRT, IMRT, and FixedX fields. Prerequisites: - C-Series software release 7.9 (minimum) - EXACT couch required. This upgrade cannot be performed on ETR couch - HD-MLC or Millennium MLC (80 or 120 leaf) with: - Millennium MLC software release V7.1 for HD-MLC (minimum) OR Millennium MLC Software release V7.2 for Millennium MLC (Minimum) AND Advanced Dynamic MLC (DMLC) option - Auto Field Sequencing (AFS) - 4DITC software release 8.1 (minimum) or 8.6 (minimum, if Advanced Imaging or RapidARC are present) - Information system software: -ARIA information system software release 8.1 (minimum) OR - 3rd party patient information management system supporting Clinac jaw & MLC positions for each control point, when it manages the plan data and communicates with 3rd party Treatment Planning System and 4D ITC via DICOM RT. - Treatment planning software: -Eclipse treatment planning software release 8.1 (minimum) OR - 3rd party treatment planning system supporting Clinac jaw & MLC positions for each control point in IMRT planning and data transfer to the patient information management system.

Item	Qty	Product Description
1.21	1	**PortalVision: aS1000**

PortalVision aS1000 uses state of the art amorphous silicon imaging technology to offer ultra performance, high resolution and high contrast images with the MV treatment beam using less dose to the patient. This aids in immediate and confident setup verification for both simple and complex treatments including IMRT. High-resolution images with better definition of small structures allow the treatment field edges and included anatomy and surrogate targets to be more easily viewed. Systematic errors may be calculated and later eliminated or reduced, which in turn helps to speed the delivery and improve the accuracy of conformal and IMRT treatment delivery. PortalVision may also be used for pre-treatment QA of IMRT plans using optional software. The aS1000 imaging system, when used for IMRT integrated imaging, can be used at higher dose rates with greater resistance to saturation than the aS500 imaging system.

PortalVision Adv Imaging for 4DITC
PortalVision™ Advanced Imaging combines imaging systems with sophisticated software tools to enable patient repositioning using megavoltage (MV) images. PortalVision Advanced Imaging employs amorphous silicon imager mounted on 3 axis control robotic arm, along with optional remote arm motions and remote couch motions of Clinac® accelerators. PortalVision Advanced Imaging brings sophisticated IGRT capabilities to the MV imaging environment.

PortalVision Advanced Imaging enables patient position verification before treatment delivery and verification of treatment field size and shape, via image registration and match verification software tools to acquire and quantitatively analyze MV images. A second monitor is added to the 4D Treatment Console - where MV images of patient anatomy are acquired and matched with their corresponding Digitally Reconstructed Radiographs (DRRs) to assess the accuracy of patient setup quantitatively. Auto match and manual match capabilities are available, as are match verification tools such as spyglass window, split window, and color blending. Corrections can be made to the patient position by going into the treatment room. After treatment, images are automatically saved for offline review by the physicians.

If used with the optional MV Repositioning remote keyboard and software, couch corrections may be electronically transferred and shifted without entering the treatment room. The MV Repositioning option also adds a 2D/3D Marker Match capability for target fiducial matching.

Description:
+ Acquire MV images before, during or after treatment. Acquired MV images are matched to the corresponding reference image to assess the accuracy of patient setup. On-line image review with automatic and manual match capabilities. Verify patient position, field size and shape using match verification tools.
+ Compatible with Varian network and database
+ Compatible with other (or 3rd party) oncology information systems
License:
+ PortalVision acquisition and review capability

Prerequisites:
- Trilogy Image-Guided accelerator or Clinac accelerator
- If connected to VARiS Vision or ARIA, a networked environment is required.

Item	Qty	Product Description

- For compatibility please refer to the PVAdvanced Imaging Specifications (RAD10087A). Depending on the chosen options the compatibility may vary.
- If networked in a 3rd party environment the customer needs to verify the proper 3rd party version needed
- PortalVision aS1000 requires presence of MLC and dMLC
- 4D Integrated Treatment Console v 8.6 or higher

Hardware included:
+ IAS3 High performance Image Acquisition H/W
+ Image detector unit:
+ 1024 x 768 Amorphous Silicon detector
+ 400 x 300 mm active imaging area
+ Amplifier, switching and console electronics
+ Retractable robotic arm with motorized vertical, longitudinal, and lateral movements to hold and position detector; IR hand pendant

1.22 1 Portal Vision for 4DITC

- Acquire MV images before, during or after treatment. Acquired MV images are matched to the corresponding reference image to assess the accuracy of patient setup. On-line image review with automatic and manual match capabilities. Verify patient position, field size and shape using match verification tools.
Compatible with Varian network and database
- Compatible with other (or 3rd party) oncology information systems

License(s):
- PortalVision acquisition and review capability
- ARIA Offline Review license for ONE (1) concurrent user, if customer has ARIA OIS.

Prerequisites:
- If connected to ARIA, a networked environment is required. - If networked in a 3rd party environment the customer needs to verify the proper 3rd party version needed.
- PortalVision aS500-II requires presence of MLC
- 4D Integrated Treatment Console v 8.6 or higher

1.23 1 On-Board Imager

Provides high-quality kV images in the treatment room for target localization, patient positioning and motion management.

The following image acquisition modes are included:
1. Radiographic 2D images
2. Fluoroscopic images
3. Gated radiographic images

The following clinical software capabilities are included:
1. Online setup correction based on a single kV or MV radiograph, two kV radiographs, a kV
and a MV radiograph or two gated kV or MV radiographs
2 Automated and manual alignment of a single radiograph or a pair of radiographs to their
reference images

Item	Qty	Product Description

3. Online setup correction based on radio-opaque markers
4. Pre-treatment verification of gated treatment portals using kV fluoroscopy

The following hardware is included:

1. Two motorized Exact robotic arms to hold and position the kV source and kV imager,
   controlled by infrared hand pendant
2. X-Ray source

a. Varian G242

b. Cooling - Anode: 162,000 HU/min (2000 W) @ 100% anode heat storage; 81,000 HU/min
   (1000 W) @ 80% anode heat storage

c. ~40 Pelvic scans per hour; ~Unlimited standard dose head scans per hour

3. Image Detector

a. Amorphous silicon device with 400 x 300mm active imaging area

4. On-Board Imager workstation and dedicated keyboard

Prerequisites:

A. PortalVision with Exact Arm

B. Varian Information system or compatible 3rd-party Information System

C. RPM Respiratory Gating System is a pre-requisite only if gated image acquisition is desired

D. To enable Marker Match and CBCT functionality when using Varis Vision as the information
   system, either...

i. Eclipse Treatment Planning is required, or

ii. DICOM Translator for 3rd party TPS is required when the customer uses 3rd party TPS.

Eclipse Treatment Planning or DICOM Translator for 3rd TPS are NOT pre-requisites if the
customer has ARIA or compatible 3rd party information system.

E. Remote Couch Motion

Optional image acquisition modes:

1. Cone beam CT 3D images

1.24 1 INCL ED: CL201 OBI Imagng for Physicists

- Includes Tuition and Materials for ONE person.
- Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.
- Training is non-refundable and non-transferable.
- Offer is valid for 18 months after installation of product.

The course provides the initial training for the individual responsible for the implementation and departmental training of the OBI system. Course provides an overview of OBI system Clinac communication and verification system and basic OBI maintenance procedures -- specifically designed for Physicists.

Course provides hands-on training on how to prepare for treatment utilizing the OBI system, acquisition of kV and mV images, performing marker match using Eclipse 3D image sets, and using the RPM system with OBI and CBCT.

Item	Qty	Product Description
		Prerequisites: - Experienced users of the Varian Clinac - VARiS Vision, version 6.5+ - PortalVision - RPM Respiratory Gating course - for RPM users - Working knowledge of Eclipse for OBI Marker Match Course details and registration are available at http://www.varian.com/index.html.
1.25	1	**INCL ED: CL101 OBI Imagng for Therapists** - Includes Tuition and Materials for ONE person. - Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated. - Training is non-refundable and non-transferable. - Offer is valid for 18 months after installation of product. The course provides the initial training for the individual responsible for the implementation and departmental training of the OBI system. Course provides an overview of OBI system Clinac communication and verification system -- specifically designed for Therapists. Course provides hands-on training on how to prepare for treatment utilizing the OBI system, acquisition of kV and mV images, performing marker match using Eclipse 3D image sets, and using the RPM system with OBI and CBCT. Prerequisites: - Experienced users of the Varian Clinac - VARiS Vision, version 6.5+ - PortalVision - RPM Respiratory Gating course - for RPM users - Working knowledge of Eclipse for OBI Marker Match Course details and registration are available at http://www.varian.com/index.html.
1.26	1	**STD TRNG: OBI** Training is included with the purchase of On-Board Imager. Training plan details will be provided by the training management team as part of your product implementation process. - Offer is valid for 18 months after installation of product. Training is not transferable with other products and services
1.27	1	**Cone Beam CT for On-Board Imager** Cone-beam CT acquires a volumetric CT dataset, while the patient is on the treatment couch, and allows the patient to be repositioned - by comparing the locations of soft-tissue and bony anatomy visible in the cone-beam CT images with the locations of the same anatomy in the planning (reference) CT images. Included: Hardware and software to acquire and reconstruct 3D volumetric datasets and match these with reference 3D CT images.

Item	Qty	Product Description

Prerequisite(s):
On-Board Imager hardware, with software version 1.0.15 or later.

1.28 1 Remote Couch Motion

Control of couch motion at the treatment console for:
Corrective motions: small couch translations (in x,y,and z) and small rotations of the couch to fine tune patient set-up.
Planned motions: large rotations of the couch to sequence between non-coplanar fields and arcs

Prerequisites:
Universal baseframe with a 52 inch turntable for full functionality
Baseframe with a 36 inch turntable supported for translational motion ONLY (x, y, z - no couch rotation).

1.29 1 Isocal

IsoCal is a geometry calibration method that uses a phantom of known geometry in combination with an insert for the MV collimator to calibrate the MV and kV imaging systems. The general calibration process is to acquire a variety of MV images to determine the location of the treatment (radiation) isocenter. Then kV images are acquired and used to estimate the corrections needed to map all acquired kV images to the treatment isocenter. [If only MV imaging is installed on the accelerator, then only the first step of the process is performed.] One set of MV images necessary for the IsoCal calibration requires rotating the MV collimator by 270 degrees to identify the central axis of collimator rotation. This means that the Extended Head Rotation capability of the Clinac is a pre-requisite for IsoCal to function. The principle of operation of IsoCal is the following: By knowing the nominal location of the source, the nominal location of the x-ray detector, and the location and shape of the BB phantom, it is possible to predict where the projection of the BBs will appear in the acquired images. Any deviation between the predicted and the measured BB locations can be accounted by motion of the x-ray source, the x-ray detector or both, using IsoCal.

Includes IsoCal phantom, MV insert, supporting software, installation, and calibration for one linear accelerator.

Supports the On-Board Imager® kV imaging system.
OBI Pre-Requisites:
OBI 1.5
Exact Arm
Clinac Pre-Requisitie:
Extended Head Rotation

OR

Supports PortalVision™ aS1000 and aS500II MV imagers.
PortalVision Pre-Requisites:
Exact Arm
MV Repositioning or
PV Advanced Imaging for 4DITC

Item	Qty	Product Description
		Clinac Pre-Requisitie: Extended Head Rotation
1.30	1	**NLS: English**
1.31	1	**RapidArc Delivery Capability** RapidArc® Delivery for a single linear accelerator provides the Varian accelerator with the capability to simultaneously modulate aperture shape, dose rate, and gantry speed continuously through 360 degrees of gantry rotation, during an arc beam delivery. When coupled with RapidArc® Planning and a RapidArc-compatible information system, the Varian accelerator has the capability to generate IMRT-quality dose distributions in a single, optimized arc around the patient. FEATURES: - Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry rotation speed during beam delivery - Clinac beam is continuously and smoothly modulated for dose rate - Provides IMRT-quality dose distributions in a single arc delivery in less than 2 minutes. Includes RapidArc® Extended Programmable MU option: - Standard beams: Up to 7200MU (20MU/deg for full arc) - 6X-SRS: Up to 9999MU PREREQUISITES: - PortalVision Advanced Imaging with MV Repositioning and E-arm or PortalVision aS500-II or aS1000 with PV Advanced Imaging level and E-arm (in this configuration for UNIQUE systems only) -PVI aS1000 if Portal Dosimetry is desired (a separate Portal Dosimetry license purchase required) -PVI as500 if Portal Dosimetry is not desired NOTE: Portal Dosimetry does not support High Intensity Mode - Millennium 120 MLC or High Definition MLC (HDMLC) with dynamic MLC option - ARIA Oncology Information System v8.5 or later, or RapidArc-compatible - 4DITC-compatible 3rd party information system - Eclipse Treatment Planning with RapidArc treatment planning software license. - C-Series v7.11 or higher TRAINING: Upgrades to installed Eclipse and ARIA information systems are an integral part of the upgrade to RapidArc®. The pricing reflected in this RapidArc® quotation is contingent upon these upgrades. If you currently have a Software Support Agreement, or other agreement with Varian that includes the upgrade as a benefit, this agreement must be currently valid at the time you place your RapidArc® order. If you do not currently have such an agreement in place, you will need to purchase a Software Support Agreement, or otherwise purchase an upgrade to your software systems, as a prerequisite to the installation of RapidArc®. ARO: The current best estimate for installation lead time is 150 days. RapidArc® is the trademark that represents the combination of two Varian

Item	Qty	Product Description
		products: Varian's volumetric modulated arc radiation delivery hardware and Varian's volumetric modulated arc treatment planning software. Customer has purchased both the volumetric modulated arc radiation delivery hardware and licensed the volumetric modulated arc treatment planning software from Varian. Accordingly, Varian grants to Customer a non-exclusive, fully paid license to: (i) use the RapidArc® trademark solely in conjunction with its use of Varian's volumetric modulated arc treatment planning software with Varian's volumetric modulated arc radiation delivery hardware; and (ii) represent to third parties that Customer is offering RapidArc® technology in conjunction with treatments planned using Varian's volumetric modulated arc treatment planning software, in either event pursuant to Varian's trademark usage guidelines (available from Varian upon request). Customer may not use the RapidArc® trademark in connection with any plan generated with any treatment planning software other than Eclipse™ or delivered using any non-Varian treatment device, and may not use the RapidArc® trademark to designate the volumetric modulated arc therapy technique ("VMAT") itself.
1.32	1	**Enhanced Dynamic Wedge** Delivers wedged dose distributions by varying the independent collimators during the photon treatment. Seven wedge angles (10, 15, 20, 25, 30, 45, and 60 degrees), asymmetric field sizes, and up to 30 cm field width are provided.
1.33	1	**Auto Field Sequencing** Automates set up of all mechanical axes and beam parameters for each treatment field when used with a compatible record-and-verify system, such as VARiS Varian. Requires Extended Clinac Interface (EXCI)
1.34	1	**Advanced Dynamic MLC** Includes Arc Dynamic MLC, Dose Dynamic MLC per RAD 5610
1.35	1	**EXCI Interface to R&V System**
1.36	1	**4D Integrated Treatment Console** Varian's 4D Integrated Treatment Console provides a streamlined front end to the treatment delivery process. The 4D Console integrates the user controls of the linear accelerator, multi-leaf collimator (MLC), and electronic portal imager into one application on a single workstation and provides the imaging control to manage advanced treatment processes such as 3D CRT, IMRT, and Dynamic Targeting™ IGRT. The 4D Console gX is provided for PortalVision Imaging and On Board Imaging. If no imaging system included on Clinac, then 4D Console non-gX is provided FEATURES: 1. Treatment delivery functionality including setup, verification and recording of the treatment history record to the OIS or a file 2. Multi-leaf Collimator (MLC) and portal image acquisition support from a single application 3. IMRT treatment techniques including sliding window, step-and-shoot and

Item	Qty	Product Description

dynamic arc
4. Supports auto field sequencing for uninterrupted treatment delivery
5. Provides 4-slot accessories for complex treatment techniques
6. Supports image only sessions while keeping treatment sessions in synch with fractionation pattern
7. Allows for imaging of treated fields, before, during, or after the treatment beam for treatment verification needs
8. Provides Unplanned Treatment Mode (UTM) allowing the creation of of unplanned treatments for emergency and boost treatments (Version 11 only)
9. Photos, activity, setup and patient notes displayed on treatment queue
10. Supports the use of the patient accessory verification system (PAVS) (purchasable option)
11. Interface hardware and software for C-Series Clinac (if not already installed)
12. Treatment delivery of high intensity, flattening filter free (FFF) modes (purchasable C-Series option)

HARDWARE INCLUDED:
1. ONE (1) dedicated 4D Integrated Treatment Console gX or non-gX workstation;
2. ONE (1) 20"LCD Monitor for Treatment workstation; and
3. ONE (1) Verification Interface computer and cables.

LICENSE: 4D Integrated Treatment Console gX or non-gX license for ONE (1) C-Series Clinac.

PREREQUISITES:
1. Clinac C-Series Software version 6.1, or later;
2. Extended Clinac Interface (EXCI);
3. In-room monitor;
4. Millennium MLC 6.8 software, or later;
5. Mark Series MLC 5.0 software, or later;
6. Mark Series MLC Controller must be minimum Pentium architecture;
7. Computer replacement must be purchased through Varian Medical Systems.

NOTE (S):
1. Includes First Year Software Support Agreement covering software and hardware purchased from Varian;
2. No third party software may be installed on the 4D Console gX or non-gX by the user;
3. Anti-Virus software SHOULD NOT be installed on VI, AVI, or EVI computers; and
4. Anti-Virus software can be installed on the 4D Console gX or non-gX but cannot be set to run in real-time mode.

Item	Qty	Product Description
1.37	1	**4DITC gX for Varian Image Mgmt Network**
1.38	1	**In-Room 20" Monitor with Mounting Kit** In Room 20" LCD Monitor, Wall Mount, and Cable Kit HARDWARE INCLUDED: 1. 20" LCD Display Monitor for Treatment Room 2. Wall Mount; and 3. In-Room Monitor Cable Kit including 100 foot (30.48 meter video cable and video switch.) NOTE: 1. One required for each Treatment module and Linac.
1.39	1	**Electron Arc Therapy: TBI, TBE and HDTSE** A portfolio of special treatment procedures, including Total Skin Electron Treatment, Total Body Electron Irradiation, Total Body Photon Irradiation, and Electron Arc Treatment. Electron beam for high dose total skin electron (HDTSE) mode and total body electron (TBE) mode as selected in Energy for Special Electron Procedures.
1.40	1	**Beam Isocenter Accuracy: Fine** Provides enhanced mechanical and radiation isocenter accuracy
1.41	1	**Console Package, Deluxe Roll In Console** Compact pre-packaging and cable management of Varian-provided workstations, control modules, and other ancillary devices for most rapid and easiest site preparation, and space management of console area. Prerequisites: Clinac must have MLC
1.42	1	**Remote Access Smart Connect Ready**
1.43	1	**Factory Data Set** Factory-provided representative physical wedge profiles, machine mechanical parameters, and representative beam scans from Clinac iX systems.
1.44	1	**Enhanced Beam Conformance Specification** The Enhanced Beam Conformance Specifications provide tight tolerances for key X-ray and electron beam energy performance specifications. It guarantees point to point conformance of field intensity profiles to Varian-provided Representative Beam Data (formerly known as "gold beam data"), as available, and guarantees point to point conformance of field intensity profiles to within a specified tolerance in the case where Representative Beam Data is not available.

Item	Qty	Product Description
1.45	1	**Dual Photon Energy: 6/16 MV**
1.46	1	**Electron Dose Rate: 400 MU/Min Maximum** Electron Dose Rate (4-22MeV): 100, 200, 300 and 400MU/min

Section 2 Stand Alone Accessories

2.01	1	**CCTV Camera Qty 2; 19" Monitor Qty 1** Dual Pan/Tilt/Zoom color CCTV camera kit with one (1) 19 inch quad input LCD display Includes two (2) color pan/tilt/zoom CCTV dome cameras, camera mounting hardware, camera controller, quad color video processor, and one (1) 19 inch LCD monitor. Installation included.
2.02	1	**4 LAP Apollo Green Lasers** LAP Apollo Green Lasers Includes: 3 Apollo Green Remote Controlled Crosshair Lasers 1 Apollo Green Remote Controlled Sagittal Line Laser Warranty for 1 year from ship date.
2.03	1	**Transtector Power Cond., Dual HE & OBI** Transtector Power Conditioner, Trilogy, HE w/OBI, internal TVSS and input/output breakers Input: 208V, 480V or 600V or Input: 380V, 400V or 415V Outputs: 208/120V, 480/277V Outputs: 400/230V (2) This Transtector power conditioner (PC) is designed specifically for any Varian Dual Energy Clinac shipped with OBI . This single (PC) allows the customer to have a single input voltage of either 208V, 480V or 600V, then deliver output voltage of both 208/120V and 480/277V. In the case of 50 Hz units, two outputs are provided for the Clinac and OBI. Available in all voltage configurations from 208V to 600V and in 50Hz or 60Hz models for US and ROW applications.

Item	Qty	Product Description

Section 3 Additional Eclipse Licenses

3.01 1 Planning for Varian Clinac

Description:
This includes a site LMC license for a Varian Clinac

FEATURE(S):
1. Leaf motion calculation software for multiple-static-segment delivery on a Varian Clinac.

LICENSE(S):
1. LMC for Varian Clinac

PRE-REQUISTE(S):
1. Latest software version must be installed on each Eclipse in the network
2. Interactive IMRT Plannng and/or Electronic Surface Compensation

3.02 2 Eclipse IMX SFW - Additional

Description:
An additional software package for an Eclipse Integrated Treatment Planning optimized for IMRT planning.

FEATURE(S):
1. Base treatment planning software which includes multi-modality image support including PET contouring, image registration and blending, clinical protocols, advanced segmentation, virtual simulation, beam placement, plan evaluation, electronic plan approval, electronic chart and configurable printing of plan documentation.
2. 2D and 3D dose calculation on a distributed calculation framework including beam configuration, IRREG, 3D conformal and field in field planning using Anisotropic Analytical Algorithm (AAA) or pencil beam convolution, and electron calculation using Generalized Gaussian Pencil Beam
3. 2D BrachyVision for film based brachytherapy planning
4. IMRT Planning package including beam angle optimization, Interactive IMRT optimization, electronic surface compensation and planar compensation. Support either split carriages or large-field IMRT. Planning for frameless IMRS.
5. Virtual Simulation Laser Interface
6. IMRT Planning support available with a Varian HET includes leaf motion calculation algorithm integrated to the Eclipse Distributed Calculation Framework (DCF) to support both the sliding window (leaves move while radiation is ON) and multiple static segments (leaves move while radiation is paused and are static while radiation is ON). (This is available in v10.0 or higher and with a Varian HET).

LICENSE(S):
One (1) set of license of the above features

PRE-REQUISITE(S):
1. An Eclipse Calculation Workstation must be on order with this package (this workstation must be purchased from Varian Medical Systems).

Item	Qty	Product Description

OTHER(S):

1. User and Configuration Manuals on CD (1 set)
2. One-year initial software support per RAD2750A

3.03 1 Eclipse RapidArc Planning License 1st

DESCRIPTION: This includes one (1) additional Eclipse Dose Dynamic Arc module for RapidArc planning license

FEATURE(S):

1. Eclipse Dose Dynamic Arc option for RapidArc planning supports dynamic arc treatments produced through volumetric dose optimization.
2. This option uses Dynamic MLC, variable dose rate, and variable gantry speed to generate intensity modulated dose distributions in optimized arcs.
3. Supports coplanar and non-coplanar arcs.
4. Supports full arcs, partial arcs and avoidance sectors.
5. Automated optimization of multiple isocenter plans. (This is available in v10.0 or higher.)
6. Simple collision detection rules. (This is available for v10.0 or higher.)
7. Automatic Normal Tissue Objective. (This is available for v10.0 or higher.)
8. Mean dose objective. (This is available for v10.0 or higher.)

LICENSE(S):

1. Eclipse Dose Dynamic Arc software option and license
2. Conformal Arc for dMLC

PRE-REQUISITE(S):

1. Eclipse version 10.0 or higher must be installed on all Eclipse workstations in the network
2. Interactive IMRT Planning on Eclipse workstations
3. Varian Linear Accelerator with RapidArc Delivery
4. Minimum hardware requirements as per http://www.varian.com/us/oncology/services_and_support/hardware_specifications/

ARO:

The current best estimate for installation lead time is 150 days.

3.04 1 INCL ED: EC112 Eclipse Inv Plng RA

- Includes Tuition and materials for ONE person.
- Attendees will be responsible for their own, airfare, hotel, rental car, meals and other travel incidentals.
- Training is non-refundable and non-transferable.
- Offer is valid for 18 months after installation of product.

The Rapid Arc course provides instruction on Rapid Arc planning.

The target audience for the class is anyone involved with treatment planning, specifically Dosimetrists.

The course will provide instruction in the treatment planning principles and knowledge to support planning in Rapid Arc. The lab portion will provide hands-on Rapid Arc planning experience under the guidance of a Varian instructor.

Item	Qty	Product Description

Prerequisites:
- Must observe prerecorded Rapid Arc Operations Live Meeting prior to class attendance
- Experience with and knowledge of Eclipse IMRT treatment planning
- Basic knowledge of computers and the Windows Operating system

Length & Location:
1 1/2 days
Varian Education Center, Las Vegas, NV

3.05 1 Eclipse RapidArc Planning License Addl

DESCRIPTION: This includes one (1) additional Eclipse Dose Dynamic Arc module for RapidArc planning license

FEATURE(S):
1. Eclipse Dose Dynamic Arc option for RapidArc planning supports dynamic arc treatments produced through volumetric dose optimization.
2. This option uses Dynamic MLC, variable dose rate, and variable gantry speed to generate intensity modulated dose distributions in optimized arcs.
3. Supports coplanar and non-coplanar arcs.
4. Supports full arcs, partial arcs and avoidance sectors.
5. Automated optimization of multiple isocenter plans. (This is available in v10.0 or higher.)
6. Simple collision detection rules. (This is available for v10.0 or higher.)
7. Automatic Normal Tissue Objective. (This is available for v10.0 or higher.)
8. Mean dose objective. (This is available for v10.0 or higher.)

LICENSE(S):
1. Eclipse Dose Dynamic Arc software option and license
2. Conformal Arc for dMLC

PRE-REQUISITE(S):
1. Eclipse version 10.0 or higher must be installed on all Eclipse workstations in the network
2. Interactive IMRT Planning on Eclipse workstations
3. Varian Linear Accelerator with RapidArc Delivery
4. Minimum hardware requirements as per http://www.varian.com/us/oncology/services_and_support/hardware_specifications/

ARO:
The current best estimate for installation lead time is 150 days.

3.06 2 4D Planning - Additional

Description:
This includes ONE (1) additional 4D Planning.

FEATURE(S):
1. Import, export and management of 4D CT and PET image sets
2. Automatically register phase- or amplitude-binned image series together with any corresponding derived image series such as MIP, Min-IP, Average-IP or Free Breathing images.

Item	Qty	Product Description

3. View and assess the motion by displaying the 4D image series as movie loops and as blended (or "blinking") images for contouring, field setup and plan review
4. Display 4D image sets in 2D, 3D and digitally reconstructed radiograph (DRR) views.
5. Automatically create ITV's (Internal Target Volumes)

LICENSE(S):
1. 4D Planning License

PRE-REQUISITE(S):
1. Software version 8.5 or higher must be installed on all Eclipse in the network.

Section 4 IsoCal Upgrade for CL-IX #0852

4.01 1 **IsoCal Upgrade**

IsoCal is a geometry calibration method that uses a phantom of known geometry in combination with an insert for the MV collimator to calibrate the MV and kV imaging systems. The general calibration process is to acquire a variety of MV images to determine the location of the treatment (radiation) isocenter. Then kV images are acquired and used to estimate the corrections needed to map all acquired kV images to the treatment isocenter. [If only MV imaging is installed on the accelerator, then only the first step of the process is performed.] One set of MV images necessary for the IsoCal calibration requires rotating the MV collimator by 270 degrees to identify the central axis of collimator rotation. This means that the Extended Head Rotation capability of the Clinac is a pre-requisite for IsoCal to function. The principle of operation of IsoCal is the following: By knowing the nominal location of the source, the nominal location of the x-ray detector, and the location and shape of the BB phantom, it is possible to predict where the projection of the BBs will appear in the acquired images. Any deviation between the predicted and the measured BB locations can be accounted by motion of the x-ray source, the x-ray detector or both, using IsoCal.

Includes IsoCal phantom, MV insert, supporting software, installation, and calibration for one linear accelerator.

Supports the On-Board Imager® kV imaging system.
OBI Pre-Requisites:
OBI 1.5
Exact Arm
Clinac Pre-Requisitie:
Extended Head Rotation

OR

Supports PortalVision™ aS1000 and aS500II MV imagers.
PortalVision Pre-Requisites:
Exact Arm
MV Repositioning or

Item	Qty	Product Description

PV Advanced Imaging for 4DITC on qualified HE Clinac
Note limitation for system types below:
- Clinac iX/2300 system serial # 5100 and above,
or Silhouette configurations serial #940 and above.

Clinac Pre-Requisitie:
Extended Head Rotation

Section 5 Large Field IMRT for CL-IX #0852

5.01 1 **Large Field IMRT**

Large Field IMRT allows multiple-carriage- fields to be easily delivered to the patient more efficiently, to reduce treatment times. LFIMRT delivers large IMRT fields, consisting of two to three total carriage moves, with a single press of the beam on, at a single gantry angle. If the Clinac is equipped with a PortalVision MV imager, whenever the radiation field fits entirely within the MV imaging panel, LFIMRT makes it possible to acquire an open field image of the anatomic area surrounding the entire CIAO, subject to the limitations of the full area of the MV imager.

Includes Maximum Programmable MU option, which increases the maximum number of MU which can be associated and delivered for a single field (or subfield) of a non-RapidArc Plan, up to 1999 MU. Maximum Programmable MU for non-RapidArc plans increases the continuously deliverable beam doses for LRIMRT, IMRT, and FixedX fields.

Prerequisites:
- C-Series software release 7.9 (minimum)
- EXACT couch required. This upgrade cannot be performed on ETR couch
- HD-MLC or Millennium MLC (80 or 120 leaf) with:
- Millennium MLC software release V7.1 for HD-MLC (minimum) OR
Millennium MLC Software release V7.2 for Millennium MLC (Minimum) AND
Advanced Dynamic MLC (DMLC) option
- Auto Field Sequencing (AFS)
- 4DITC software release 8.1 (minimum) or 8.6 (minimum, if Advanced Imaging or RapidARC are present)
- Information system software:
-ARIA information system software release 8.1 (minimum) OR
- 3rd party patient information management system supporting Clinac jaw & MLC positions for each control point, when it manages the plan data and communicates with 3rd party Treatment Planning System and 4D ITC via DICOM RT.
- Treatment planning software:
-Eclipse treatment planning software release 8.1 (minimum) OR
- 3rd party treatment planning system supporting Clinac jaw & MLC positions for each control point in IMRT planning and data transfer to the patient information management system.

Item	Qty	Product Description

5.02 1 **Millennium MLC SW Upg to Latest Version**

Upgrade to existing Millennium MLC to latest release

Features Include:
- Connection for the 4D Console
- Updated Tools

5.03 1 **Clinac Console software upgrade from 7/8.x**

Upgrade installed 7/8.x console software to the current version shipping from the factory.

Pre-requisites:
- 4DITC at v11 or higher
- Clinac console software 7.X or 8.X
- C-series 2100C/D/EX s/n 1050+, Silhouette configurations
- C-series 2300C/D/EX s/n 171+, Silhouette configurations
- Exact Couch

5.04 1 **4DITC Software Upg for Existing 4DITC**

Upgrade includes the treatment software required for the 4D Integrated Treatment Console for ONE (1) C-Series Clinac.

LICENSE:
1. Treatment software for ONE (1) C-Series Clinac.

FEATURES:
- Treatment delivery, MLC setup and portal image acquisition from single application.
- Supports 4-slot accessories for complex treatment tecniques.
- Image only sessions keeping treatment sessions in synch with fractionation pattern.
- Photos, activity and patient note display on treatment queue.

TREATMENT PRE-REQUISITES:
1. Existing 4DITC
2. Clinac C-Series Software version 6.1 or later
3. Extended Clinac Interface (EXCI)
4. Millennium MLC 6.8, 7.2 software, or later
5. Mark Series MLC 5.1 Controller software
6. Mark Series MLC Controller must be minimum Pentium architecture. Computer replacement must be purchased through Varian Medical Systems.
7. No third party software may be installed on the 4DITC workstation by user.

Section 6 RapidArc Delivery Capability for CL-IX #0852

Item	Qty	Product Description

6.01 1 **RapidArc Delivery Capability Upgrade**

RapidArc® Delivery for a single linear accelerator provides the Varian accelerator with the capability to simultaneously modulate aperture shape, dose rate, and gantry speed continuously through 360 degrees of gantry rotation, during an arc beam delivery. When coupled with RapidArc Planning and a RapidArc-compatible information system, the Varian accelerator has the capability to generate IMRT-quality dose distributions in a single, optimized arc around the patient.

Upgrades to installed Eclipse and ARIA information systems are an integral part of the upgrade to RapidArc®. The pricing reflected in this RapidArc® quotation is contingent upon these upgrades. Upgrades are also required to your Clinac. If you currently have a Software Support Agreement, Service Contract or other agreement with Varian that includes the upgrade as a benefit, this agreement must be currently valid at the time you place your RapidArc® order. If you do not currently have such an agreement in place, you will need to purchase such an agreement, or otherwise purchase an upgrade to your software systems and Clinac, as a prerequisite to the installation of RapidArc®.

RapidArc® is the trademark that represents the combination of two Varian products: Varian's volumetric modulated arc radiation delivery hardware and Varian's volumetric modulated arc treatment planning software. Customer has purchased both the volumetric modulated arc radiation delivery hardware and licensed the volumetric modulated arc treatment planning software from Varian. Accordingly, Varian grants to Customer a non-exclusive, fully paid license to: (i) use the RapidArc® trademark solely in conjunction with its use of Varian's volumetric modulated arc treatment planning software with Varian's volumetric modulated arc radiation delivery hardware; and (ii) represent to third parties that Customer is offering RapidArc® technology in conjunction with treatments planned using Varian's volumetric modulated arc treatment planning software, in either event pursuant to Varian's trademark usage guidelines (available from Varian upon request). Customer may not use the RapidArc® trademark in connection with any plan generated with any treatment planning software other than Eclipse™ or delivered using any non-Varian treatment device, and may not use the RapidArc® trademark to designate the volumetric modulated arc therapy technique ("VMAT") itself.

FEATURES:
- Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry rotation speed during beam delivery
- Clinac beam is continuously and smoothly modulated for dose rate
- Provides IMRT-quality dose distributions in a single arc delivery in less than 2 minutes.

PREREQUISITES:
- PortalVision Advanced Imaging with MV Repositioning and E-arm or PortalVision aS500-II or aS1000 with PV Advanced Imaging level and E-arm (in this configuration for UNIQUE systems only)
- PVI aS1000 if Portal Dosimetry is desired (a separate Portal Dosimetry license purchase required)
- PVI as500 if Portal Dosimetry is not desired
  NOTE: Portal Dosimetry does not support High Intensity Mode

Item	Qty	Product Description
		- Millennium 120 MLC or High Definition MLC (HDMLC) with dynamic MLC option - ARIA Oncology Information System v8.5 or later, or RapidArc-compatible - 4DITC-compatible 3rd party information system - Eclipse Treatment Planning with RapidArc treatment planning software license. - C-Series v7.11 or higher
6.02	1	**RapidArc Online Marketing Program** Access to the RapidArc® Online Marketing Program which provides a broad range of advertising, educational, promotional, and public relations materials targeted to referring physicians, patients, and the media. RapidArc® is the trademark that represents the combination of two Varian products: Varian's volumetric modulated arc radiation delivery hardware and Varian's volumetric modulated arc treatment planning software. Customer has purchased both the volumetric modulated arc radiation delivery hardware and licensed the volumetric modulated arc treatment planning software from Varian. Accordingly, Varian grants to Customer a non-exclusive, fully paid license to: (i) use the RapidArc® trademark solely in conjunction with its use of Varian's volumetric modulated arc treatment planning software with Varian's volumetric modulated arc radiation delivery hardware; and (ii) represent to third parties that Customer is offering RapidArc® technology in conjunction with treatments planned using Varian's volumetric modulated arc treatment planning software, in either event pursuant to Varian's trademark usage guidelines (available from Varian upon request). Customer may not use the RapidArc® trademark in connection with any plan generated with any treatment planning software other than Eclipse™ or delivered using any non-Varian treatment device, and may not use the RapidArc® trademark to designate the volumetric modulated arc therapy technique ("VMAT") itself.
6.03	1	**Upgrade Freight & Insurance**

Section 7 Additional Las Vegas Training

7.01	15	**Varian Flex-Credit** Varian FlexCredits are to be used for the purchase of Education courses provided by Varian Medical Systems at one of our Education Centers and/or onsite Applications Training. Entitlement training is not transferable for other courses, products or services and cannot be applied towards flex credits. FlexCredits cannot be applied towards the purchase other Varian products or services. Varian FlexCredits expire 24 months after purchase. Flex credits are for the intended use of the training as listed below. The training is interchangeable for other Varian Education Courses and ApplicationsTraining, provided that the changes are equivalent to the total quantity of flex credits purchased.

Item	Qty	Product Description

Training Descriptions and Credits Required:

ED: EC201 Eclps Comsn I - Admin & Algo - (Qty: 1, 5 credits each)

Includes Tuition and Materials for ONE Person

The Eclipse Commissioning I Administration and Algorithms course provides training for the individual responsible for commissioning and administration of the Eclipse Treatment Planning System in a clinical, external beam radiation therapy department. The course focuses on the configuration of Eclipse dose calculation algorithms (PBC, AAA, AcurosXB, GGPB and eMC), including demonstration of model configuration and discussion of beam data collection requirements. Essential administrative tasks including OSP settings (user login, user rights for system), Radiation oncology settings (external beam machine definition, CT scanner definition, imaging templates, tolerance tables, isodose templates, dosimetrically equivalent machines) are also included in this course. Essential planning skills are practiced throughout. PLEASE NOTE: This course does not cover the optimization algorithms, interface or QA for IMRT, VMAT or RapidArc (see EC202).

Designed for Medical Physicists
Pre-Requisites: Masters degree in Medical Physics, or equivalent
Software Version: V11 – for other versions please contact your training coordinator

Duration and Location
4.5 days
Varian Education Center
Las Vegas, Nevada, USA

FlexCredits Eligible

Customer is resonsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.

ED: EC202 Eclps Comsn II - IMRT VMAT & R - (Qty: 1, 5 credits each)

Includes Tuition and Materials for ONE Person

Description: This continuation of EC201 provides training for the individual responsible for commissioning and administration of the inverse planning modules within Eclipse. It covers the implementation of Intensity Modulated Radiation Therapy (IMRT) and Volumetric Modulated Radiation Therapy (VMAT - RapidArc) treatment techniques in Eclipse, and focuses on the Eclipse optimization algorithms (DVO, BAO, PRO). In addition, the basics of Varian Multileaf Collimators (MLCs) are discussed with an overview of essential QA procedures. The course includes overview of plan delivery as well as practical QA and commissioning examples (DLG measurement demonstrated and VMAT commissioning tests).

Item	Qty	Product Description

Designed for Medical Physicists
Pre-Requisites: Completion of course EC201 Eclipse Commissioning I, or be able to demonstrate equivalent Eclipse knowledge
Software Version: V11- for other versions please contact your training coordinator

PLEASE NOTE: This course does not cover basic machine configuration, general system administration or the commissioning of essential dose calculation algorithms such as PBC, AAA or AcurosXB (see EC201).

Duration and Location
4.5 days
Varian Education Center
Las Vegas, Nevada, USA

FlexCredits Eligible

Customer is resonsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.

ED: EC112 Eclpse Inv Plan - RapidA Only - (Qty: 1, 2 credits each)

Includes Tuition and Materials for ONE Person

The Eclipse Inverse Planning - RapidArc course replicates the last day of EC102 and has been designed specifically for experienced Eclipse IMRT users who are new to RapidArc. It is also suitable for experienced RapidArc users changing from version 8.9 or earlier. It covers the detailed use of Progressive Resolution Optimizer within Eclipse for the creation of RapidArc plans only. The course consists of lectures, instructor-led demonstrations, and individual hands-on exercises.

PLEASE NOTE: This course does not include instruction on basic Eclipse Operations (see EC101), IMRT planning (see EC102). It does not cover system and MLC Configuration, IMRT/RapidArc QA, or the physics and commissioning of any algorithms (see EC201 and EC202).

Designed for Medical Dosimetrists experienced in Eclipse and IMRT
Pre-Requisites: Completion of EC101 Eclipse Basic Operations, or be able to demonstrate equivalent knowledge.
Software Version: V11 – for other versions please contact your training coordinator

Duration and Location
2.0 days
Varian Education Center
Las Vegas, Nevada, USA

FlexCredits Eligible

Customer is resonsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.

Item	Qty	Product Description

ED: EC222 Eclipse Cone Planning - (Qty: 1, 3 credits each)

Includes Tuition and Materials for ONE Person

Description: The Eclipse Cone Planning training program covers stereotactic radiosurgery and/or stereotactic radiotherapy for treatment of intracranial tumors and/or lesions, SRS components and workflow, Eclipse SRS localization, QA and Eclipse Cone Dose Calculation algorithm and Beam data requirements.

Designed For Medical Physicist, Radiation Oncologist and Dosimetrist
Software Version: Software Version V11 - for other versions please contact your training coordinator.

Duration an Location
3.0 days
Varian Education Center
Las Vegas, NV

FlexCredits Eligible

Customer is resonsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.

Section 8 Travel and Lodging Allowance for 6 Courses in Las Vegas

8.01 1 **Travel and Lodging**

Allowance is applied only to the travel and lodging expenses, including airfare, hotel accommodations and rental car.

The customer is responsible for any expenses outside of the allowance. Travel and lodging charges will be direct billed and are not reimbursable if travel is booked outside of Balboa Travel. The hotel must be Varian preferred. Any remaining balance is non-refundable.

Please contact Balboa Travel Agency at 877-593-7220 in order to make the necessary travel arrangements once you complete the online registration at www.variantraining.com and receive an email confirmation for the course. Be sure to provide Balboa your Varian sales order number.

The Travel and Lodging allowance expires 18 months from the acceptance date of your equipment. Any unused portion will not be available, cannot be traded for other products or services and will not be returned.

Item	Qty	Product Description

There may be radiological regulatory requirements applicable to possessing and/or operating radiation generating machines. Varian takes no responsibility regarding local radiation safety requirements. These requirements are the customer's responsibility.

End of Support: Varian may terminate the Agreement at the end of support of the Product that is the object of the Support Services by giving **twenty-four (24) months** written notice to the Customer. However, Varian may shorten this notice period in its sole discretion if termination is required due to key component obsolescence issues or material product quality concerns.

Terms & Conditions of Sale

This offer is subject to credit approval and is exclusive of any applicable sales taxes or duties.

If Customer chooses to pay by credit card, a four percent (4%) service fee will be added.

This quotation is subject to Varian Medical Systems Standard Terms and Conditions of Sale, document RAD 1652, current version.

Any upgrade product being installed on Varian Product(s) and serviced in any way by a 3rd party vendor is subject to a system performance audit by Varian prior to installation of upgrade. If system audit results in specifications below applicable Product specifications, Varian may delay installation. Parts and labor required to bring system back to applicable Product specifications to meet Product installation pre-requisites will be at an additional cost to the current Product owner.

- Freight and Insurance for upgrade products included
- Installation included in upgrade price
- Hardware not included unless specified in product description
- Price excludes any applicable sales tax

VARIAN payment terms are as follows:

0% with purchase order
95% upon shipment to hospital
5% upon installation

NOTE: For orders totaling $75,000 or less payment terms are 100% with purchase order.

NOTE FOR LINEAR ACCELERATOR PROPOSALS: Unless otherwise specified in this proposal, ONLY standard ground floor rigging is included with installation. Any required use of cranes, shoring of floors, removal of any walls/doors, etc. that may be necessary for rigging the machine to its final location is the responsibility of the customer.

UNLESS otherwise specified, TRAVEL and LODGING for customer training is NOT included in this proposal and is the responsibility of the customer.

UNLESS otherwise specified, computer hardware is NOT included in this proposal.

THE PRICING IN THIS PROPOSAL IS HIGHLY CONFIDENTIAL AND NOT TO BE SHARED WITH THIRD PARTIES.

FINANCING AVAILABLE: For lease and finance plans, call Tony Susen, Director - Varian Customer Finance, at (508) 668-4609.

Item	Qty	Product Description

EQUIPMENT COMPARISON

	EXISTING EQUIPMENT	*REPLACEMENT EQUIPMENT*
Type of Equipment (List Each Component)	Linear Accelerator	Linear Accelerator
Manufacturer of Equipment	Varian	Varian
Tesla Rating for MRIs	NA	NA
Model Number	Clinac 2100 EX	Clinac iX
Serial Number	271539	TBD
Provider's Method of Identifying Equipment	Serial and Asset Number	Serial and Asset Number
Specify if Mobile or Fixed	Fixed	Fixed
Mobile Trailer Serial Number/VIN #	NA	NA
Mobile Tractor Serial Number/VIN #	NA	NA
Date of Acquisition of Each Component	July 2000	TBD
Does Provider Hold Title to Equipment or Have a Capital Lease?	Holds Title	Will Hold Title
Specify if Equipment Was/Is New or Used When Acquired	New	new
Total Capital Cost of Project (Including Construction, etc.)	$3,738,000	$2,672,331
Total Cost of Equipment	$1,662,306	$2,462,831
Fair Market Value of Equipment	$50,000	
Net Purchase Price of Equipment		
Locations Where Operated	CarolinaEast Medical Center	CarolinaEast Medical Center
Number Days In Use/To be Used in N.C. Per Year	365	365
Percent of Change in Patient Charges (by Procedure)	NA	0%
Percent of Change in Per Procedure Operating Expenses (by Procedure)	NA	<10%
Type of Procedures Currently Performed on Existing Equipment	Radiation Therapy Treatments	Radiation Therapy Treatments
Type of Procedures New Equipment is Capable of Performing	NA	Radiation Therapy Treatments

Attachm

VARIAN medical systems | A partner for life

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Tuesday, 21 October 2014

Rick Fisher
Director Imaging Services
CarolinaEast Health System / P.O. Box 12157
New Bern, NC 28561

Dear Rick

Pursuant to your request, Varian Quotation Number AXM20140501-001C pricing is valid and 95% of payment is due upon shipment to CarolinaEast in New Bern, NC with the remaining 5% due upon acceptance. The shipment of the machine is TBD based upon construction timing.

The Varian EX linear accelerator to be removed at no cost to CarolinaEast and the machine will be taken out of the state of North Carolina.

Thank You

Jamie Bellush

Varian Medical Systems, Inc.
2250 Newmarket Parkway
Marietta, GA 30067

Cell 205 577 7839

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