Saint Francis
HEALTHCARE

Equipment Replacement Application

Review for Replacement Equipment Previously Approved

Missouri Certificate of Need Program

Project Name:

Saint Francis Medical Center to Replace Existing Linear Accelerators

Project Number:

6191 HT

Certificate of Need Program

EQUIPMENT REPLACEMENT APPLICATION

Applicant's Completeness Checklist and Table of Contents

Project Name: Saint Francis Medical Center to Replace Existing Linear Accelerators Project No: 6191 HT

Project Description: Replacement of Elekta Synergy (CON 5474HS) and Elekta Infinity (CON 4365HS) with a Varian TrueBeam Base System 120 MLC and a Varian Edge Base System HD120 MLC

Done	Page	N/A	Description
			Divider I. Application Summary:
__	4	__	1. Applicant Identification and Certification (Form MO 580-1861)
__	5-7	__	2. Representative Registration (From MO 580-1869)
__	8-9	__	3. Proposed Project Budget (Form MO 580-1863) and detail sheet with documentation of costs.
			Divider II. Proposal Description:
__	11	__	1. Provide a complete detailed project description, CON project number of the existing equipment (if prev. CON approved), and include the type/brand of both the existing equipment and the replacement equipment.
__	11, 13-47	__	2. Provide a listing with itemized costs of the medical equipment to be acquired and bid quotes.
__	12	__	3. Provide a timeline of events for the project, from CON issuance through project completion.
			Divider III. Service Specific Criteria and Standards:
__	49	__	1. Describe the financial rationale for the proposed replacement equipment.
__	49	__	2. Document if the existing equipment has exceeded its useful life.
__	49	__	3. Describe the effect the replacement unit would have on quality of care.
__	49	__	4. Document if the existing equipment is in constant need of repair.
__	49	__	5. Document if the lease on the current unit has expired.
__	49-50	__	6. Describe the technological advances provided by the new unit.
__	50	__	7. Describe how patient satisfaction would be improved.
__	50	__	8. Describe how patient outcomes would be improved.
__	50	__	9. Describe what impact the new unit would have on utilization.
__	51	__	10. Describe any new capabilities that the new unit would provide.
__	51	__	11. By what percent will this replacement increase patient charges.

(If replacement equipment was not previously approved, also complete Divider IV below.)

			Divider IV. Financial Feasibility Review Criteria and Standards:
__	N/A	__	1. Document that sufficient financing is available by providing a letter from a financial institution or an auditor's statement indicating that sufficient funds are available.
__	N/A	__	2. Provide Service-Specific Revenues and Expenses (Form MO 580-1865) projected through three (3) **FULL** years beyond project completion.
__	N/A	__	3. Document how patient charges are derived.
__	N/A	__	4. Document responsiveness to the needs of the medically indigent.

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Divider I.

Application Summary:

1. Application Identification and Certification (Form MO 580-1861);

2. Representative Registration (Form MO 580-1869);

    a. See attached Representative Registration forms (Pgs. 5 – 7):

        i. Gordon Glaus, Staff Attorney/ Legal Representative
        ii. Lisa Newcomer, Vice President – Regional Operations
        iii. Elizabeth Glastetter, Director – Cancer Services

3. Proposed Project Budget (Form MO 580-1863) and detail sheet with documentation of costs.

Saint Francis HEALTHCARE

Certificate of Need Program

APPLICANT IDENTIFICATION AND CERTIFICATION

*The information provided must match the **Letter of Intent** for this project, without exception.*

1. Project Location *(Attach additional pages as necessary to identify multiple project sites.)*

Title of Proposed Project	Project Number
Saint Francis Medical Center to Replace Existing Linear Accelerators	6191 HT
Project Address *(Street/City/State/Zip Code)*	**County**
211 St. Francis Drive, Cape Girardeau, MO. 63703	Cape Girardeau

2. Applicant Identification *(Information must agree with previously submitted Letter of Intent.)*

List All Owner(s): *(List corporate entity.)*	Address (Street/City/State/Zip Code)	Telephone Number
Saint Francis Medical Center	211 St. Francis Drive, Cape Girardeau, MO. 63703	573-331-3000

List All Operator(s): *(List entity to be licensed or certified.)*	Address (Street/City/State/Zip Code)	Telephone Number
Saint Francis Medical Center	211 St. Francis Drive, Cape Girardeau, MO. 63703	573-331-3000

3. Ownership *(Check applicable category.)*

☑ Nonprofit Corporation ☐ Individual ☐ City ☐ District

☐ Partnership ☐ Corporation ☐ County ☐ Other_____

4. Certification

In submitting this project application, the applicant understands that:

(A) The review will be made as to the community need for the proposed beds or equipment in this application;
(B) In determining community need, the Missouri Health Facilities Review Committee (Committee) will consider all similar beds or equipment within the service area;
(C) The issuance of a Certificate of Need (CON) by the Committee depends on conformance with its Rules and CON statute;
(D) A CON shall be subject to forfeiture for failure to incur an expenditure on any approved project six (6) months after the date of issuance, unless obligated or extended by the Committee for an additional six (6) months:
(E) Notification will be provided to the CON Program staff if and when the project is abandoned; and
(F) A CON, if issued, may not be transferred, relocated, or modified except with the consent of the Committee.

We certify the information and date in this application as accurate to the best of our knowledge and belief by our representative's signature below:

5. Authorized Contact Person *(Attach a Contact Person Correction Form if different from the Letter of Intent.)*

Name of Contact Person		Title
Gordon L. Glaus		Staff Attorney
Telephone Number	**Fax Number**	**E-mail Address**
573-331-4529	573-331-3345	gglaus@sfmc.net
Signature of Contact Person		**Date of Signature**
Gordon Glaus		3-10-25

MO 580-1861 (03/13)

Saint Francis
HEALTHCARE

Certificate of Need Program

REPRESENTATIVE REGISTRATION

*(A registration form must be completed for **each** project presented.)*

Project Name	Number
Saint Francis Medical Center to Replace Existing Linear Accelerators	6191 HT

(Please type or print legibly.)

Name of Representative	Title
Gordon L. Glaus	Staff Attorney

Firm/Corporation/Association of Representative (may be different from below, e.g., law firm, consultant, other)	Telephone Number
Saint Francis Medical Center	573-331-3491

Address (Street/City/State/Zip Code)
211 St. Francis Drive, Cape Girardeau, MO 63703

Who's interests are being represented?
(If more than one, submit a separate Representative Registration Form for each.)

Name of Individual/Agency/Corporation/Organization being Represented	Telephone Number
Saint Francis Medical Center	573-331-3491

Address (Street/City/State/Zip Code)
211 St. Francis Drive, Cape Girardeau, MO 63703

Check one. Do you:
- ☑ Support
- ☐ Oppose
- ☐ Neutral

Relationship to Project:
- ☐ None
- ☐ Employee
- ☑ Legal Counsel
- ☐ Consultant
- ☐ Lobbyist
- ☐ Other (explain):

Other Information:

I attest that to the best of my belief and knowledge the testimony and information presented by me is truthful, represents factual information, and is in compliance with §197.326.1 RSMo which says: *Any person who is paid either as part of his normal employment or as a lobbyist to support or oppose any project before the health facilities review committee shall register as a lobbyist pursuant to chapter 105 RSMo, and shall also register with the staff of the health facilities review committee for every project in which such person has an interest and indicate whether such person supports or opposes the named project. The registration shall also include the names and addresses of any person, firm, corporation or association that the person registering represents in relation to the named project. Any person violating the provisions of this subsection shall be subject to the penalties specified in § 105.478, RSMo.*

Original Signature	Date
[signature]	3-12-25

MO 580-1869 (11/01)

Saint Francis
HEALTHCARE

Certificate of Need Program

REPRESENTATIVE REGISTRATION

*(A registration form must be completed for **each** project presented.)*

Project Name	Number
Saint Francis Medical Center to Replace Existing Linear Accelerators	6191 HT

(Please type or print legibly.)

Name of Representative	Title
Lisa Newcomer	Vice President - Regional Operations

Firm/Corporation/Association of Representative (may be different from below, e.g., law firm, consultant, other)	Telephone Number
Saint Francis Medical Center	573-331-5131

Address (Street/City/State/Zip Code)
211 St. Francis Drive, Cape Girardeau, MO 63703

Who's interests are being represented?
(If more than one, submit a separate Representative Registration Form for each.)

Name of Individual/Agency/Corporation/Organization being Represented	Telephone Number
Saint Francis Medical Center	573-331-5131

Address (Street/City/State/Zip Code)
211 St. Francis Drive, Cape Girardeau, MO 63703

Check one. Do you:
- ☑ Support
- ☐ Oppose
- ☐ Neutral

Relationship to Project:
- ☐ None
- ☑ Employee
- ☐ Legal Counsel
- ☐ Consultant
- ☐ Lobbyist
- ☐ Other (explain):

Other Information:

I attest that to the best of my belief and knowledge the testimony and information presented by me is truthful, represents factual information, and is in compliance with §197.326.1 RSMo which says: *Any person who is paid either as part of his normal employment or as a lobbyist to support or oppose any project before the health facilities review committee shall register as a lobbyist pursuant to chapter 105 RSMo, and shall also register with the staff of the health facilities review committee for every project in which such person has an interest and indicate whether such person supports or opposes the named project. The registration shall also include the names and addresses of any person, firm, corporation or association that the person registering represents in relation to the named project. Any person violating the provisions of this subsection shall be subject to the penalties specified in § 105.478, RSMo.*

Original Signature	Date
Lisa Newcomer (on 03/10/25) for	3/10/25

MO 580-1869 (11/01)

Saint Francis HEALTHCARE

Certificate of Need Program

REPRESENTATIVE REGISTRATION

*(A registration form must be completed for **each** project presented.)*

Project Name	Number
Saint Francis Medical Center to Replace Existing Linear Accelerators	6191 HT

(Please type or print legibly.)

Name of Representative	Title
Elizabeth Glastetter	Director - Cancer Services

Firm/Corporation/Association of Representative (may be different from below, e.g., law firm, consultant, other)	Telephone Number
Saint Francis Medical Center	573-331-5154

Address (Street/City/State/Zip Code)

211 St. Francis Drive, Cape Girardeau, MO 63703

Who's interests are being represented?
(If more than one, submit a separate Representative Registration Form for each.)

Name of Individual/Agency/Corporation/Organization being Represented	Telephone Number
Saint Francis Medical Center	573-331-5154

Address (Street/City/State/Zip Code)

211 St. Francis Drive, Cape Girardeau, MO 63703

Check one. Do you:

- ☑ Support
- ☐ Oppose
- ☐ Neutral

Relationship to Project:

- ☐ None
- ☑ Employee
- ☐ Legal Counsel
- ☐ Consultant
- ☐ Lobbyist
- ☐ Other (explain):

Other Information:

I attest that to the best of my belief and knowledge the testimony and information presented by me is truthful, represents factual information, and is in compliance with §197.326.1 RSMo which says: *Any person who is paid either as part of his normal employment or as a lobbyist to support or oppose any project before the health facilities review committee shall register as a lobbyist pursuant to chapter 105 RSMo, and shall also register with the staff of the health facilities review committee for every project in which such person has an interest and indicate whether such person supports or opposes the named project. The registration shall also include the names and addresses of any person, firm, corporation or association that the person registering represents in relation to the named project. Any person violating the provisions of this subsection shall be subject to the penalties specified in §105.478, RSMo.*

Original Signature	Date
Elizabeth Glastetter	3/11/2025

MO 580-1869 (11/01)

Saint Francis HEALTHCARE

Certificate of Need Program

PROPOSED PROJECT BUDGET

Description	Dollars
COSTS:*	*(Fill in every line, even if the amount is "$0".)*
1. New Construction Costs ***	$0
2. Renovation Costs ***	$471,000
3. Subtotal Construction Costs (#1 plus #2)	$471,000
4. Architectural/Engineering Fees	$90,400
5. Other Equipment (not in construction contract)	$0
6. Major Medical Equipment	$7,562,011
7. Land Acquisition Costs ***	$0
8. Consultants' Fees/Legal Fees ***	$0
9. Interest During Construction (net of interest earned) ***	$0
10. Other Costs ***	$0
11. Subtotal Non-Construction Costs (sum of #4 through #10	$7,652,411
12. Total Project Development Costs (#3 plus #11)	$8,123,411 **
FINANCING:	
13. Unrestricted Funds	$0
14. Bonds	$0
15. Loans	$0
16. Other Methods (specify)	$0
17. Total Project Financing (sum of #13 through #16)	$0 **
18. New Construction Total Square Footage	0
19. New Construction Costs Per Square Foot *****	$0
20. Renovated Space Total Square Footage	1,272
21. Renovated Space Costs Per Square Foot ******	$370

* *Attach additional page(s) detailing how each line item was determined, including all methods and assumptions used. Provide documentation of all major costs.*

** *These amounts should be the same.*

*** *Capitalizable items to be recognized as capital expenditures after project completion.*

**** *Include as Other Costs the following: other costs of financing; the value of existing lands, buildings and equipment not previously used for health care services, such as a renovated house converted to residential care, determined by original cost, fair market value, or appraised value; or the fair market value of any leased equipment or building, or the cost of beds to be purchased.*

***** *Divide new construction costs by total new construction square footage.*

****** *Divide renovation costs by total renovation square footage.*

MO 580-1863 (02/13)

Saint Francis HEALTHCARE

Cost Detail Sheet

Costs of Project	
Renovations:	Amount:
Kiefner Bros. Inc. - from quote	$ 358,000.00
KT Power Systems - from quote	$ 113,000.00
	$ 471,000.00
Architectural/Engineering:	
Tchoukaleff Kelly Hartke - from quote	$ 90,400.00
	$ 90,400.00
Major Medical Equipment	
TrueBeam Base System 120 MLC and EDGE Base System HD120 MLC - from quote	$ 7,562,011.00
	$ 7,562,011.00
Project Total	**$ 8,123,411.00**

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Divider II.

Proposal Description:

1. Provide a complete detailed project description, CON project number of the existing equipment (if prev. CON approved), and include the type/brand of both the existing equipment and the replacement equipment.

2. Provide a listing with itemized costs of the medical equipment to be acquired and bid quotes.

3. Provide a timeline of events for the project, from CON issuance through project completion.

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1. **Provide a complete detailed project description, CON project number of the existing equipment (if prev. CON approved), and include the type/brand of both the existing equipment and the replacement equipment.**

Saint Francis Medical Center ("SFMC") is seeking to replace two (2) linear accelerators currently in use, which are located on the premises at 211 St. Francis Drive, Cape Girardeau, MO. 63703. The aforementioned linear accelerators are at or nearing end of guaranteed support and end of life.

The previously approved linear accelerators SFMC is seeking to replace are a (1) Elekta Synergy linear accelerator (CON 5474HS) ("Synergy"), and a (2) Elekta Infinity linear accelerator (CON 4365HS) ("Infinity"). End of guaranteed support ("EOGS") refers to the date when Elekta officially discontinues guaranteed technical support, software updates, hardware part replacement, and service assistance for the Elekta linear accelerators. EOGS for the Synergy is May 1, 2027. End of life for the Synergy is May 1, 2030. Guaranteed support for the Infinity ended May 1, 2024. End of life for the Infinity is May 27, 2026. By reaching and exceeding EOGS, and with each device approaching end of life, SFMC cannot ensure that the linear accelerators currently in use will be readily available to treat patients due to lack of guaranteed support, lack of available replacement parts, and outdated software.

SFMC is seeking to replace the Synergy and Infinity with two new linear accelerators from Varian, a Siemens Healthineers Company. SFMC is seeking a Certificate of Need ("CON") in order to purchase a Varian TrueBeam Base System 120 MLC ("TrueBeam") and a Varian Edge Base System HD120 MLC ("Edge"). The TrueBeam and Edge will allow SFMC to continue to provide patients with radiation therapy treatments, including Stereotactic Body Radiotherapy ("SBRT"). SFMC will also have the capability to provide Stereotactic Radiosurgery ("SRS") treatment with the TrueBeam and Edge. The proposed project cost of $8,123,411 includes the cost to purchase the TrueBeam and the Edge, along with the engineering and reconstruction of two (2) linear accelerator vaults.

2. **Provide a listing with itemized costs of the medical equipment to be acquired and bid quotes.**

According to the most recent quotation total from Varian, which is attached hereto as "CON Exhibit A" the purchase price for the TrueBeam and Edge is $7,562,011. The construction costs for renovating SFMC's existing linear accelerator vaults, including architectural and engineering costs, are $561,400. Quotes for the construction costs and architectural and engineering costs are attached hereto as "CON Exhibit B", "CON Exhibit C", and "CON Exhibit D", respectively.

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3. Provide a timeline of events for the project, from CON issuance through project completion.

- April 24, 2025: Certificate of Need approval;
- June/July 2025: Renovation and construction on 1st linear accelerator vault begins;
- October, 2025: Delivery of Edge;
- December, 2025: Edge go-live;
- January, 2026: Renovation and construction on 2nd vault linear accelerator vault begins;
- March, 2026: Delivery of TrueBeam;
- May, 2026: TrueBeam go-live.

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"CON Exhibit A"

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Custom System Proposal

Quotation Number - 2025-509756

TrueBeam_Edge_HyperSight

All pricing and configurations contained within quotations supplied to Saint Francis Medical Center by Varian Medical Systems are confidential and only intended for Saint Francis Medical Center. Disclosure or release to others outside of the Saint Francis Medical Center network, either manually or electronically, without the prior written consent of Varian Medical Systems is strictly prohibited.

*** Confidential - Proposal is intended for Recipient and Recipient's Site Representatives Only ***

Saint Francis HEALTHCARE

"CON Exhibit A"

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SAINT FRANCIS MEDICAL CENTER ("Customer")	For and on behalf of Varian Medical Systems
211 SAINT FRANCIS DR CAPE GIRARDEAU Missouri 63703-5049 United States Tel : +1 573 -33 1-5154 Fax : (573) 651 - 6499 Email : eglastetter@sfmc.net	Jill Skocelas District Sales Manager 25th Avenue Schiller Park , IL 60176-2147 United States of America Tel : 5134393083 Email : jill.skocelas@varian.com

*** Confidential - Proposal is intended for Recipient and Recipient's Site Representatives Only ***

Quote Information	
Quotation Number : 2025-509756	Quotation Valid Until : May 23, 2025
Customer Requested Delivery Date : September 17, 2027	
Customer Procurement Contact Name : Needed	
Billing Plan	See Quote billing plan Summary on the following pages which is incorporated by reference

Sales	
Incoterms : DPU Site Insured	Payment Terms : 30 days net
Sales PO Required : No	

Quotation Total
Quotation Total : US $7,562,011.00

Terms and Conditions

Products and Services: Customer's access to and use of the Products, Support Services and Services (except Software-as-a-Service or Subscription Services) as indicated in this Quotation are subject to and governed by: (a) the Varian Terms and Conditions of Sale (Form RAD 1652) at: https://varian.com/RAD1652V_US_EN_OCT_2024 and (b) any Schedules, Exhibits and/or additional terms (including third party terms) contained, attached, referenced or otherwise indicated in this Quotation. All terms and conditions provided in the website link listed in item (a) above are incorporated by reference and form part of the contract between Varian and Customer.
If there is a separate written agreement (e.g. master agreement) in effect between the parties that expressly provides for and governs the purchase and sale of the specific Products, Support Services, Services, Software-as-a-Service and/or Subscription Service set forth in this Quotation, such written agreement shall govern. Hard copies of the referenced terms and conditions and any additional terms indicated will be provided to Customer upon request.

For and on behalf of Customer	For and on behalf of Varian Medical Systems
Authorized Representative :	Authorized Representative :
Title :	Title :
Date :	Date :

Saint Francis HEALTHCARE

Billing Summary

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Sales Summary	
Value	Billing
0.00%	On Down Payment
80.00%	On Shipment
20.00%	On Acceptance
For orders equal or less than $100k, 100% upon shipment, net 30.	

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Item	Description	
1.0	TrueBeam	

1.1	**TrueBeam Base System 120 MLC**
	
	Treatment delivery system includes 120 leaf MLC with dual independent jaws, enhanced dynamic wedge, 6 MV X-ray treatment energy, 43 cm x 43 cm MV imager for radiographic, cine, and integrated imaging, Motion View CCTV camera system, treatment console with integrated audio and video systems, back pointer lasers, front pointer set, upper port film graticule to support basic quality assurance, and drum phantom for Machine Performance Check (MPC).
	Features:
	• Basic X-Ray treatment delivery technique package, including Static Photon, Photon Arc, and Dynamic Conformal Arc treatment delivery techniques
	• Intensity Modulated Radiotherapy (IMRT) treatment technique, including large field IMRT
	• Total Body Treatment technique package
	• 2D MV Radiographic and Cine Image Acquisition, 2D/2D Radiographic Image Review and match, Cine image review
	• Relative Portal Dosimetry Image and Integrated Image Acquisition
	• Matching of 2D radiographs to 3D reference images
	• Online addition of kV and MV imaging protocols to treatment fields, with automated generation of reference images
	• Online Physician Approval of Images at Treatment Console (compatible with ARIA only)
	• Automated Machine Performance Check Testing, Online Machine Performance Check Review
	• Offline Machine Performance Check Review
	• Image only sessions
	• Unplanned Treatment Mode up to 5 fractions
	• Fraction number displayed on in-room monitor
	• Match environment layout for 2D/2D and 2D/3D layouts default to the 2-panel
	• Custom DRR templates that are created in Eclipse will be available on the TrueBeam Platform
	• Online access to a marketing kit that contains a broad range of advertising, educational, promotional, and public relations materials targeted to referring physicians, patients, and the media
	• Electronic Dynamic Wedges (EDW)
	• Large field IMRT
	Prerequisites:
	• ARIA oncology information system for radiation oncology v15.1 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system
	• Eclipse treatment planning system v15.1 or higher, or compatible third-party treatment planning system
	• If third-party OIS:
	  • Authentication Server for third-party OIS (Hardware and Software) or
	  • Authentication Server for third-party OIS (Software only)
	Customer Responsibilities:
	• Verify compatibility with third-party oncology information systems if applicable
	• Verify compatibility with third-party treatment planning systems if applicable
	• If using a scale other than IEC 60601 or IEC 61217 in the rest of the department, it may be necessary to change scales on all other machines. This may require additional purchases.
	Notes:
	• Multiple patient name in Japan market is applicable for Kanji, Kana and Romaji characters to identify the patient
		1

1.2	**New Universal Baseframe 52" Fixed Floor**	1
1.3	**18/23 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
1.4	**10/10 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
1.5	**6/6 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
1.6	**18 MeV, 0-1000 MU/Min**	1

Saint Francis HEALTHCARE

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Item	Description	
	25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	
1.7	**16 MeV, 0-1000 MU/Min**	1
	25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	
1.8	**12 MeV, 0-1000 MU/Min**	1
	25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	
1.9	**9 MeV, 0-1000 MU/Min**	1
	25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	
1.10	**6 MeV, 0-1000 MU/Min**	1
	25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	
1.11	**IGRT Couch Top**	1
	Image Guided RadioTherapy (IGRT) carbon fiber treatment couch top, free of metal or other radiation-opaque materials. **Features:** • Indexed Immobilization® for compatible accessories • Couch top interface for mounting patient immobilization and quality assurance devices at the head of the couch • Lock bar for indexed positioning of equipment or immobilization devices on the couch top • Handrail for couch positioning, with hooks for temporary pendant placement during patient set up	
1.12	**PerfectPitch 6DoF Couch**	1
	The PerfectPitchTM 6-Degrees of Freedom couch system **Features:** • Image-based 6DoF patient positioning **Prerequisites:** • TrueBeam® v2.5 MR2 or higher • ARIA® oncology information system v11.1 MR1 (11.0.55) and ARIA radiation therapy management v11 MR3 (11.0.47) or higher or compatible third-party oncology information system **Customer Responsibilities:** • Verify compatibly of third-party oncology information system	
1.13	**10X High Intensity Mode**	1
	40 cm x 40 cm maximum field size, dose rate range 400-2400 MU/min in 400 MU/min steps.	
1.14	**6X High Intensity Mode**	1
	40 cm x 40 cm maximum field size, dose rate range 400-1400 MU/Min in 200 MU/min steps.	
1.15	**Low-X Imaging Energy**	1
	Low-X imaging energy configuration, providing high soft tissue contrast when imaging in-line with the treatment beam.	
1.16	**RapidArc Treatment Delivery**	1
	RapidArc® Treatment Delivery is a volumetric modulated arc treatment delivery technique. **Features:** • Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry angle and rotation speed during beam delivery • Supports dynamic jaw tracking and collimator rotation with supporting treatment planning system **Prerequisites:** • 120 Multi Leaf Collimator or HD120™ Multi Leaf Collimator	

Item	Description	
	• Eclipse™ treatment planning system v11.0 or higher • RapidArc treatment planning license • Compatible server hardware and operating system. For detailed specifications, visit: www.varian.com/hardwarespecs	
1.17	**kV Imaging System** kV Imaging system, providing 2D radiographic and fluoroscopic and 3D CBCT imaging capability **Features:** • kV CBCT image acquisition, review, and match to 3D reference image • Radiographic image acquisition, with 2D/2D and 2D/3D image matching to reference image • Fluoroscopic image acquisition, with structure overlay on fluoroscopic images. • kV CBCT image acquisition with a long field of view, provided by merging multiple indexed CBCT images online. **Prerequisites:** • ARIA oncology information system for radiation oncology v15.1 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system • TrueBeam Platform v3.0 or higher **Customer Responsibilities:** • Verify compatibility with third-party oncology information systems if applicable	1

1.18	**VCD Option, couch mounted**
	
	Couch-mounted display system provides visual feedback to the patient for respiration stabilization or breath hold position during respiratory gated image acquisition or treatment delivery.
	
	Features:
	
	• 2 rechargeable batteries and charging system
	• Video interface for optional use of customer-provided video goggles
	• Wireless display system with adjustable count mount
	
	Prerequisites:
	
	• TrueBeam® v2.7 or higher
	• One of the following:
	  • Advanced Respiratory Motion Management System
	  • Basic Respiratory Motion Management System
	  • Respiratory Motion Management System
	  • Optical Imager
		1

1.19	**VCD w/Couch Mount - IGRT**	1
1.20	**Filtrine Water Chiller** A closed loop water cooling system, providing clean water at a constant flow, pressure, and temperature for cooling a high energy medical linear accelerator. Ideal for sites where a dependable source of clean water for cooling is not available.	1
1.21	**Additional MotionView CCTV Camera System** Additional set of two Motion View CCTV cameras and displays. Camera placement is at customer discretion. **Features:** • Two pan, tilt, zoom CCTV cameras • Two desktopLCD displays with built in camera controls • Adjustable viewing angle for patient privacy	1

Item	Description	
	• Push button pan, tilt, zoom, and home position control **Prerequisites:** • Motion View camera system, provided with linac system.	
1.22	**Main Circuit Breaker Panel** Main circuit breaker panel, interfacing to a single power input feed from the facility Mains. Circuit breakers provide independent over-current protection for equipment at the console and in the treatment room. UL and IEC/CE certified.	1
1.23	**Power Cond., 3phase 50KVA** Transtector 50KVA, 3-phase power conditioning unit, providing transient protection, line power regulation, and Input and Output circuit breakers for over-current protection. UL and IEC/CE certified. **Notes:** • Supports voltage configurations from 208 to 600 VAC and in 50 or 60 Hz for US and ROW applications.	1
1.24	**Supp. Phantom Kit** Supplemental imaging phantom kit for measuring resolution and contrast of kV and MV imaging systems. **Features:** • Leeds TOR 18FG phantom for measuring spatial resolution and contrast of kV imaging system • MV contrast phantom for measuring contrast performance of MV imaging system • Geometric phantom, mounted on IGRT couch top-compatible lock bar. Can be used for quality assurance of image guidance workflow. **Prerequisites:** • MV imaging system	1
1.25	**Motion Management Interface** Motion management interface is an integrated interface for validated external devices that provide patient positioning, patient and target motion monitoring, and/or respiratory gating. The Motion management interface supports connection of up to four external devices, two of which may be used for respiratory motion management or high speed beam hold. **Features:** • 4-DoF or 6-DoF patient positioning capability for compatible validated devices and couch configurations • Integrated external device beam hold and image-based patient repositioning workflow • Patient-specific external device activation and patient plan verification	1
1.26	**NLS: English**	1
1.27	**STD TRNG: TB Platform On-Site** The on-site review of the TrueBeam/Edge/VitalBeam components includes imaging and use cases for support of patient treatment for therapists. This support is to ensure that personnel who attended the classroom training are able to operate the TrueBeam Platform machine in a safe and effective manner in the clinical environment. **Features:** • Includes support for TrueBeam/Edge/VitalBeam • Offer is valid for 18 months after installation of product **Prerequisites:** • TrueBeam Platform classroom trainings **Notes:**	1

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Item	Description	
	• Training is non-refundable and non-transferable	
1.28	**STD TRNG: Two Day Follow Up** Two Day Follow Up Training. This follow up training is conducted after the initial training has been completed to ensure safe and efficient use of the product. **Features:** • Training plan details will be provided by the training management team as part of your product implementation process • Duration and Location: 2 days onsite **Prerequisites:** • Initial product training completed **Notes:** • Offer is valid for up to 18 months after installation of product • Non-transferable to other products and services and non-refundable	1
1.29	**INCL ED: TB201 TB Platform Physicists** TrueBeam Physics and Administration: TrueBeam Physics and Administration course is designed for personnel (primarily Medical Physicists) responsible for the acceptance, commissioning, and QA program development of the TrueBeam in the clinical environment. It is recommended that the student attend the TrueBeam Physics and Administration course shortly before the installation of the TrueBeam. The course provides instruction of the basic delivery components, basic imaging components, and a general overview of the motion management system components. Machine commissioning, calibration, and QA of the machine are included. The course subject matter is presented from a clinical use perspective. Primary emphasis is on the overall commissioning, calibration, and QA of the TrueBeam and its components. Extensive hands-on laboratory exercises are included. **Features:** • Includes support for TrueBeam/Edge/VitalBeam • Includes Tuition and Materials for ONE person • Length: 4.5 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	1
1.30	**INCL ED: TB101 TB Platform Operations** TrueBeam Operations is a course designed for personnel (primarily Radiation Therapists) responsible for the routine operation and clinical use of the TrueBeam. It is recommended that students attend the TrueBeam Operations course shortly before clinical use and the commencement of patient treatments. The course provides instruction of the basic delivery components, basic imaging components, and a general overview of the motion management system components. The course subject matter is presented from a clinical use perspective. Primary emphasis is on the overall understanding of the TrueBeam function and operation to include imaging and respiratory gating. Extensive hands-on laboratory exercises are included. The attendees of this class will be provided tools to allow them to instruct other clinical staff upon their return. **Features:** • Includes support for TrueBeam/Edge/VitalBeam • Includes Tuition and Materials for ONE person • Length: 4 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	1

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Item	Description	
1.31	**INCL ED: CL222 Respiratory Gating** The Respiratory Gating course provides training for physicists and therapists, to obtain knowledge of principles and practices of respiratory gating in radiation oncology for clinical implementation. **Features:** • Includes support for TrueBeam Platform • Includes Tuition and Materials for ONE person • Length: 2 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	1
1.32	**15/16 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
1.33	**15 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.34	**Advanced Resp Motion Management System** Advanced Respiratory Motion Management System is a stereoscopic optical system for managing patient respiration motion during treatment delivery and imaging. **Features:** • Stereoscopic optical imager, including marker block for tracking patient respiration motion • Respiratory gated treatment delivery • Respiratory gated MV image acquisition and online review, respiration synchronized cine image acquisition and online review • Respiratory gated kV image acquisition and online review, respiration synchronized fluoroscopic image acquisition and online review **Prerequisites:** • TrueBeam®, VitalBeam, or Edge v2.7 and higher • kV Imaging System	1

1.35	**Gated CBCT**
	
	Gated Cone-Beam Computed Tomography (CBCT) provides the ability to acquire CBCT images synchronized with patient respiration (free-breathing or breath hold).
	Features:
	• Gated CBCT Imaging License
	• Short Arc CBCT Imaging License: CBCT image acquisition using a 120-150-degree arc, image review, and image match to respiratory gated reference image. Short arc CBCT can be used for single breath hold CBCT data acquisition.
	Prerequisites:
	• TrueBeam®, VitalBeam, or Edge v2.7 or higher
	• One of the following:
	  • Advanced Respiratory Motion Management System
	  • Basic Respiratory Motion Management System
	• kV Imaging System
		1

1.36	**4/4 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-250 MU/Min.	1
1.37	**22 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1

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Item	Description	
1.38	**20 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.39	**Filtrine Quick Connect Panel** See Filtrine Specification sheet for details	1
1.40	**TrueBeam v4.1**	1
1.41	**Accelerated 4D CBCT Reconstruction** License and hardware package for 4D CBCT accelerated reconstruction **Features:** • 4D kV CBCT License • 4D CBCT Reconstruction on GPU License Package • 4D kV CBCT Image Match Review License **Prerequisites:** • TrueBeam Platform v3.0 or higher • kV Imaging System • Basic Respiratory Motion Management or Advanced Respiratory Motion Management System	1
1.42	**Quick Ref Guide - English**	1

1.43	**HyperSight Imaging Solution**
	
	HyperSight™ for TrueBeam® Platform
	Features:
	• Gantry speed up to 1.5 RPM for Imaging and motions between treatment fields.
	• CBCT Metal Artifact Reduction
	• HU Accuracy and Uniformity
	• Extended Field of View reconstruction
	• Quart phantom for HU calibration
	• 27" Console Monitors
	Prerequisites:
	• TrueBeam or Edge™ v4.1 or higher
	• ARIA® oncology information system (OIS) v15.1 - v18.0 or higher, or compatible third-party
	• Eclipse™ treatment planning system v15.1 or higher, or compatible third-party
	• If third-party OIS:
	  • Authentication Server for third-party OIS (Hardware and Software) or
	  • Authentication Server for third-party OIS (Software only)
		1

1.44	**Vertical LAP Apollo Green Room Laser Kit** LAP Apollo Green Room Laser Kit for patient alignment with Vertical Remote-Controlled Sagittal Line Laser. **Features:** • 1 Apollo Green Remote-controlled Ceiling Crosshair Laser • 2 Apollo Green Remote-controlled Lateral Crosshair Lasers • 1 Apollo Green Vertical Remote-Controlled Sagittal Line Laser	1
2.0	EDGE	
2.1	**EDGE Base System HD120 MLC** The Edge™ Radiosurgery System provides capabilities for delivering radiosurgery treatments where radiation is indicated. Treatment delivery system supports optional Electron treatment delivery. Includes HD120 leaf MLC with dual independent jaws, enhanced dynamic wedge, 6 MV X-ray treatment energy, 43 cm x 43 cm MV imager for radiographic, cine, and integrated imaging, Motion View CCTV camera system, treatment console with integrated audio and video systems, back pointer lasers, front pointer set, upper port film graticule to support basic quality assurance, and drum phantom for Machine Performance Check (MPC). **Features:** • HD120™ High Definition Multileaf Collimator	1

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Item	Description	

	• 6MV X-ray treatment energy
	• Basic X-Ray treatment delivery technique package, including Static Photon, Photon Arc, and Dynamic Conformal Arc treatment delivery techniques
	• Intensity Modulated Radiotherapy (IMRT) treatment technique, including large field IMRT
	• Total Body Treatment technique package
	• 2D MV Radiographic and Cine Imager Acquisition, 2D/2D Radiographic Image Review and match, Cine image review
	• Relative Portal Dosimetry Image and Integrated Image Acquisition
	• Matching of 2D radiographs to 3D reference images
	• Online addition of kV and MV imaging protocols to treatment fields, with automated generation of reference images
	• Online Physician Approval of Images at Treatment Console (compatible with ARIA only)
	• Automated Machine Performance Check Testing, online Machine Performance Check Review
	• Offline Machine Performance Check Review
	• Image only sessions
	• Unplanned Treatment Mode up to 5 fractions
	• Fraction number displayed on in-room monitor
	• Match environment layout for 2D/2D and 2D/3D layouts default to the 2-panel
	• Custom DRR templates that are created in Eclipse will be available on the TrueBeam Platform
	• Online access to a marketing kit that contains a broad range of advertising, educational, promotional, and public relations materials targeted to referring physicians, patients, and the media
	• Electronic Dynamic Wedges (EDW)
	• Large field IMRT
	Prerequisites:
	• ARIA oncology information system for radiation oncology v15.1 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system
	• Eclipse treatment planning system v15.1 or higher, or compatible third-party treatment planning system
	• If third-party OIS:
	  • Authentication Server for third-party OIS (Hardware and Software) or
	  • Authentication Server for third-party OIS (Software only)
	Customer Responsibilities:
	• Verify compatibility with third-party oncology information systems if applicable
	• Verify compatibility with third-party treatment planning systems if applicable
	• If using a scale other than IEC 60601 or IEC 61217 in the rest of the department, it may be necessary to change scales on all other machines. This may require additional purchases.
	Notes:
	• Multiple patient name in Japan market is applicable for Kanji, Kana and Romaji characters to identify the patient	

2.2	**New Universal Baseframe 52" Fixed Floor**	1
2.3	**18/23 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
2.4	**15/16 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
2.5	**10/10 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
2.6	**6/6 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
2.7	**18 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.8	**16 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1

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Item	Description	
2.9	**15 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.10	**12 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.11	**9 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.12	**6 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.13	**IGRT Couch Top** Image Guided RadioTherapy (IGRT) carbon fiber treatment couch top, free of metal or other radiation-opaque materials. **Features:** • Indexed Immobilization® for compatible accessories • Couch top interface for mounting patient immobilization and quality assurance devices at the head of the couch • Lock bar for indexed positioning of equipment or immobilization devices on the couch top • Handrail for couch positioning, with hooks for temporary pendant placement during patient set up	1
2.14	**PerfectPitch 6DoF Couch** The PerfectPitchTM 6-Degrees of Freedom couch system **Features:** • Image-based 6DoF patient positioning **Prerequisites:** • TrueBeam® v2.5 MR2 or higher • ARIA® oncology information system v11.1 MR1 (11.0.55) and ARIA radiation therapy management v11 MR3 (11.0.47) or higher or compatible third-party oncology information system **Customer Responsibilities:** • Verify compatibly of third-party oncology information system	1
2.15	**10X High Intensity Mode** 40 cm x 40 cm maximum field size, dose rate range 400-2400 MU/min in 400 MU/min steps.	1
2.16	**6X High Intensity Mode** 40 cm x 40 cm maximum field size, dose rate range 400-1400 MU/Min in 200 MU/min steps.	1
2.17	**Low-X Imaging Energy** Low-X imaging energy configuration, providing high soft tissue contrast when imaging in-line with the treatment beam.	1
2.18	**HyperArc Treatment Delivery Capability** Frameless, MLC-based technique for multiple intracranial SRS targets. Automated non-coplanar treatment delivery with integral intrafraction imaging at specified couch angles. **Features:** • HyperArc™ Delivery License **Prerequisites:** • TrueBeam™ or Edge® system v2.7 or higher • RapidArc® delivery license or Varian Volumetric Modulated Arc Therapy delivery license • PerfectPitch™ 6-Degrees of Freedom (6DoF) couch • Varian IGRT couch top or QFix KVue™ or kVue Calypso® couch top	1

Item	Description	
	• Qfix™ Encompass™ SRS immobilization system for Qfix kVue™ or Qfix™ Encompass™ SRS immobilization system for kVue Calypso® or Qfix™ Encompass™ SRS immobilization system for IGRT couch top • Eclipse™ treatment planning system v15.5 or higher • HyperArc treatment planning license • Eclipse RapidArc® planning license • ARIA® oncology information system for radiation oncology v15.1 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system **Customer Responsibilities:** • TrueBeam/Edge system needs to pass isocenter test that is performed by Varian installation/local service team. • Use of external devices connected to Motion Management or ADI interfaces with HyperArc are not validated or supported by Varian. • Verify compatibility with third-party oncology information systems if applicable **Notes:** • It is recommended that the patient CT scan used for treatment planning be acquired at a slice thickness of 1.25 mm or better	
2.19	**RapidArc Treatment Delivery** RapidArc® Treatment Delivery is a volumetric modulated arc treatment delivery technique. **Features:** • Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry angle and rotation speed during beam delivery • Supports dynamic jaw tracking and collimator rotation with supporting treatment planning system **Prerequisites:** • 120 Multi Leaf Collimator or HD120™ Multi Leaf Collimator • Eclipse™ treatment planning system v11.0 or higher • RapidArc treatment planning license • Compatible server hardware and operating system. For detailed specifications, visit: www.varian.com/hardwarespecs	1
2.20	**kV Imaging System** kV Imaging system, providing 2D radiographic and fluoroscopic and 3D CBCT imaging capability **Features:** • kV CBCT image acquisition, review, and match to 3D reference image • Radiographic image acquisition, with 2D/2D and 2D/3D image matching to reference image • Fluoroscopic image acquisition, with structure overlay on fluoroscopic images. • kV CBCT image acquisition with a long field of view, provided by merging multiple indexed CBCT images online. **Prerequisites:** • ARIA oncology information system for radiation oncology v15.1 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system • TrueBeam Platform v3.0 or higher **Customer Responsibilities:** • Verify compatibility with third-party oncology information systems if applicable	1
2.21	**Advanced Resp Motion Management System** Advanced Respiratory Motion Management System is a stereoscopic optical system for managing patient respiration motion during treatment delivery and imaging. **Features:** • Stereoscopic optical imager, including marker block for tracking patient respiration motion • Respiratory gated treatment delivery • Respiratory gated MV image acquisition and online review, respiration synchronized cine image acquisition and online review • Respiratory gated kV image acquisition and online review, respiration synchronized fluoroscopic image acquisition and online review **Prerequisites:** • TrueBeam®, VitalBeam, or Edge v2.7 and higher • kV Imaging System	1
2.22	**VCD Option, couch mounted** Couch-mounted display system provides visual feedback to the patient for respiration stabilization or breath hold position during respiratory gated image acquisition or treatment delivery.	1

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Item	Description	

	Features:
	• 2 rechargeable batteries and charging system
	• Video interface for optional use of customer-provided video goggles
	• Wireless display system with adjustable count mount
	Prerequisites:
	• TrueBeam® v2.7 or higher
	• One of the following:
	  • Advanced Respiratory Motion Management System
	  • Basic Respiratory Motion Management System
	  • Respiratory Motion Management System
	  • Optical Imager	

2.23	**VCD w/Couch Mount - IGRT**	1

2.24	**Gated CBCT**
	Gated Cone-Beam Computed Tomography (CBCT) provides the ability to acquire CBCT images synchronized with patient respiration (free-breathing or breath hold).
	Features:
	• Gated CBCT Imaging License
	• Short Arc CBCT Imaging License: CBCT image acquisition using a 120-150-degree arc, image review, and image match to respiratory gated reference image. Short arc CBCT can be used for single breath hold CBCT data acquisition.
	Prerequisites:
	• TrueBeam®, VitalBeam, or Edge v2.7 or higher
	• One of the following:
	  • Advanced Respiratory Motion Management System
	  • Basic Respiratory Motion Management System
	• kV Imaging System
		1

2.25	**Vertical LAP Apollo Green Room Laser Kit** LAP Apollo Green Room Laser Kit for patient alignment with Vertical Remote-Controlled Sagittal Line Laser. **Features:** • 1 Apollo Green Remote-controlled Ceiling Crosshair Laser • 2 Apollo Green Remote-controlled Lateral Crosshair Lasers • 1 Apollo Green Vertical Remote-Controlled Sagittal Line Laser	1
2.26	**Filtrine Water Chiller** A closed loop water cooling system, providing clean water at a constant flow, pressure, and temperature for cooling a high energy medical linear accelerator. Ideal for sites where a dependable source of clean water for cooling is not available.	1
2.27	**Additional MotionView CCTV Camera System** Additional set of two Motion View CCTV cameras and displays. Camera placement is at customer discretion. **Features:** • Two pan, tilt, zoom CCTV cameras • Two desktopLCD displays with built in camera controls • Adjustable viewing angle for patient privacy • Push button pan, tilt, zoom, and home position control **Prerequisites:**	1

Item	Description	
	• Motion View camera system, provided with linac system.	
2.28	**Main Circuit Breaker Panel** Main circuit breaker panel, interfacing to a single power input feed from the facility Mains. Circuit breakers provide independent over-current protection for equipment at the console and in the treatment room. UL and IEC/CE certified.	1
2.29	**Power Cond., 3phase 50KVA** Transtector 50KVA, 3-phase power conditioning unit, providing transient protection, line power regulation, and Input and Output circuit breakers for over-current protection. UL and IEC/CE certified. **Notes:** • Supports voltage configurations from 208 to 600 VAC and in 50 or 60 Hz for US and ROW applications.	1
2.30	**Supp. Phantom Kit** Supplemental imaging phantom kit for measuring resolution and contrast of kV and MV imaging systems. **Features:** • Leeds TOR 18FG phantom for measuring spatial resolution and contrast of kV imaging system • MV contrast phantom for measuring contrast performance of MV imaging system • Geometric phantom, mounted on IGRT couch top-compatible lock bar. Can be used for quality assurance of image guidance workflow. **Prerequisites:** • MV imaging system	1
2.31	**SRS Encompass IMB IGRT Couchtop** The SRS Encompass™ Immobilization package from Qfix™ is a dedicated SRS immobilization package specifically tailored for use with the IGRT couch top. **Features:** • Encompass Intracranial Standalone Device (quantity: 2) • Encompass mask system (quantity: 10) • Direct Indexing™ Adapter for Varian IGRT couch top (quantity: 1) • Locating bar (quantity: 1) **Prerequisites:** • IGRT couch top • TrueBeam® v2.0 and higher • VitalBeam® v2.5 (China only) and higher **Notes:** • Training will be provided by Qfix	1
2.32	**ICVI for TrueBeam (MPC)** The Integrated Collimator Verification and Interlock (ICVI) system provides electronically-verified conical collimators for use in radiosurgical treatment delivery. **Features:** • Conical collimator mounting system with integrated mount verification • Set of 7 conical collimators with integrated verification • Conical collimator set (in mm diameter): 4, 5, 7.5, 10, 12.5, 15, and 17.5	1

Item	Description	
	• ICVI QA Toolkit **Prerequisites:** • ARIA® oncology information system for radiation oncology v11.0 through v17.0, or ARIA OIS v18.0 or higher, or compatible third-party oncology information system • Eclipse™ Cone Planning v11.0 or higher or compatible third-party treatment planning system **Customer Responsibilities:** • Verify compatibility with third-party treatment planning systems if applicable • Verify compatibility with third-party oncology information systems if applicable **Notes:** • Includes MPC ICVI isocenter license and MPC ICVI conical collimator alignment license.	
2.33	**Motion Management Interface** Motion management interface is an integrated interface for validated external devices that provide patient positioning, patient and target motion monitoring, and/or respiratory gating. The Motion management interface supports connection of up to four external devices, two of which may be used for respiratory motion management or high speed beam hold. **Features:** • 4-DoF or 6-DoF patient positioning capability for compatible validated devices and couch configurations • Integrated external device beam hold and image-based patient repositioning workflow • Patient-specific external device activation and patient plan verification	1
2.34	**NLS: English**	1

2.35	**INCL ED: UAB TrueBeam SRS/SBRT Clinical**
	
	The SRS &SBRT Delivery with Eclipse™ and TrueBeam® clinical school is taught by a multi-disciplinary team from the University of Alabama at Birmingham, including subspecialty surgeons, radiation oncologists and medical physicists. This team installed the first clinical TrueBeam STx in the world and has extensive experience with RapidArc® and High Intensity Mode beams. The course content can be individually focused on specific sites (e.g. neuro or thoracic) depending upon the interests of those enrolled. This course is designed for radiation physicists, radiation oncologists, surgeons, and dosimetrists.
	Features:
	• Topics covered include:
	  ▪ Commissioning and QA4D simulation
	  ▪ Respiratory motion management
	  ▪ Triggered imaging
	  ▪ RapidArc Radiosurgery
	  ▪ High Intensity Mode (flattening filter free @2400 MU/min)
	  ▪ Clinical implementation of advanced procedures in CNS, H/N, lung, liver, spine, and prostate
	  ▪ Navigation bronchoscopy for fiducial placement
	• Hands-on laboratory experiences that mimic the clinical process including mock tumor board, contouring,
	• and treatment planning
	• Duration and Location: 3 day course at the Hazelrig-Salter Radiation Oncology Center, The University of Alabama at Birmingham, Birmingham, AL
	Customer Responsibilities:
	• All travel expenses (airfare, hotel, rental car, meals and travel incidentals)
	Notes:
	• Offer is valid for up to 18 months after installation of product
	• Non-transferable to other products and services and non-refundable
	• Includes tuition and materials for ONE person
	• It is recommended that the entire multi-disciplinary team of 3 individuals from the same site attend the class together; each must have their own tuition.
	• If the clinical school is not available, Varian will make all reasonable efforts to find a suitable replacement
	• Eclipse™ is utilized extensively during the lab portion of the course so this clinical school is not ideal for institutions not planning to utilize Eclipse for treatment planning
	• This course is offered and exclusively controlled by University of Alabama Birmingham; Varian is not responsible for and has not reviewed the course topic, content or materials. The student will be required to sign an agreement that disclaims all liability for Varian with respect to the content and training
	• AMA, CAMPEP and MDCB Accreditation
		3

2.36	**STD TRNG: TB Platform On-Site**	1

Item	Description	
	The on-site review of the TrueBeam/Edge/VitalBeam components includes imaging and use cases for support of patient treatment for therapists. This support is to ensure that personnel who attended the classroom training are able to operate the TrueBeam Platform machine in a safe and effective manner in the clinical environment. **Features:** • Includes support for TrueBeam/Edge/VitalBeam • Offer is valid for 18 months after installation of product **Prerequisites:** • TrueBeam Platform classroom trainings **Notes:** • Training is non-refundable and non-transferable	
2.37	**STD TRNG: Two Day Follow Up** Two Day Follow Up Training. This follow up training is conducted after the initial training has been completed to ensure safe and efficient use of the product. **Features:** • Training plan details will be provided by the training management team as part of your product implementation process • Duration and Location: 2 days onsite **Prerequisites:** • Initial product training completed **Notes:** • Offer is valid for up to 18 months after installation of product • Non-transferable to other products and services and non-refundable	1
2.38	**INCL ED: TB201 TB Platform Physicists** TrueBeam Physics and Administration: TrueBeam Physics and Administration course is designed for personnel (primarily Medical Physicists) responsible for the acceptance, commissioning, and QA program development of the TrueBeam in the clinical environment. It is recommended that the student attend the TrueBeam Physics and Administration course shortly before the installation of the TrueBeam. The course provides instruction of the basic delivery components, basic imaging components, and a general overview of the motion management system components. Machine commissioning, calibration, and QA of the machine are included. The course subject matter is presented from a clinical use perspective. Primary emphasis is on the overall commissioning, calibration, and QA of the TrueBeam and its components. Extensive hands-on laboratory exercises are included. **Features:** • Includes support for TrueBeam/Edge/VitalBeam • Includes Tuition and Materials for ONE person • Length: 4.5 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	1
2.39	**INCL ED: TB101 TB Platform Operations** TrueBeam Operations is a course designed for personnel (primarily Radiation Therapists) responsible for the routine operation and clinical use of the TrueBeam. It is recommended that students attend the TrueBeam Operations course shortly before clinical use and the commencement of patient treatments. The course provides instruction of the basic delivery components, basic imaging components, and a general overview of the motion management system components. The course subject matter is presented from a clinical use perspective. Primary emphasis is on the overall understanding of the TrueBeam function and operation to include imaging and respiratory gating. Extensive hands-on laboratory exercises are included. The attendees of this class will be provided tools to allow them to instruct other clinical staff upon their return.	1

Item	Description	
	Features: • Includes support for TrueBeam/Edge/VitalBeam • Includes Tuition and Materials for ONE person • Length: 4 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	
2.40	**INCL ED: CL222 Respiratory Gating** The Respiratory Gating course provides training for physicists and therapists, to obtain knowledge of principles and practices of respiratory gating in radiation oncology for clinical implementation. **Features:** • Includes support for TrueBeam Platform • Includes Tuition and Materials for ONE person • Length: 2 days • Offer is valid for 18 months after installation of product **Customer Responsibilities:** • Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals) **Notes:** • Training is non-refundable and non-transferable	1
2.41	**4/4 MV (BJR 11/17)** 40 cm x 40 cm maximum field size, dose rate range 0-250 MU/Min.	1
2.42	**22 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.43	**20 MeV, 0-1000 MU/Min** 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
2.44	**Filtrine Quick Connect Panel** See Filtrine Specification sheet for details	1
2.45	**EDGE v4.1**	1
2.46	**Enhanced Triggered Imaging** Automated intrafraction 2D kV radiographic imaging, with images triggered by respiration phase or amplitude, gantry angle, time period, or MU. Automated image-based beam hold on fiducial markers, based on user-defined marker motion thresholds. **Features:** • Arbitrarily shaped fiducial detection for Auto Beam Hold (ABH) **Prerequisites:** • TrueBeam® or Edge™ v4.0 or higher • Advanced Respiration Motion Management System or Basic Respiration Motion Management System	1
2.47	**Accelerated 4D CBCT Reconstruction** License and hardware package for 4D CBCT accelerated reconstruction	1

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Item	Description	
	Features: • 4D kV CBCT License • 4D CBCT Reconstruction on GPU License Package • 4D kV CBCT Image Match Review License **Prerequisites:** • TrueBeam Platform v3.0 or higher • kV Imaging System • Basic Respiratory Motion Management or Advanced Respiratory Motion Management System	
2.48	**Quick Ref Guide - English**	1

2.49	**HyperSight Imaging Solution**
	
	HyperSight™ for TrueBeam® Platform
	Features:
	• Gantry speed up to 1.5 RPM for Imaging and motions between treatment fields.
	• CBCT Metal Artifact Reduction
	• HU Accuracy and Uniformity
	• Extended Field of View reconstruction
	• Quart phantom for HU calibration
	• 27" Console Monitors
	Prerequisites:
	• TrueBeam or Edge™ v4.1 or higher
	• ARIA® oncology information system (OIS) v15.1 - v18.0 or higher, or compatible third-party
	• Eclipse™ treatment planning system v15.1 or higher, or compatible third-party
	• If third-party OIS:
	  • Authentication Server for third-party OIS (Hardware and Software) or
	  • Authentication Server for third-party OIS (Software only)
		1

3.0	RGSC	
3.1	**RGSC -- Couch Mount Camera** Respiratory Gating for Scanners (RGSC) is for respiration synchronized image acquisition on CT and PET-CT scanners. The RGSC system correlates tumor motion with the patient's breathing cycle. **Features:** • Monitors patient position during image acquisition in 3 motion axes • Provides session recording • The predictive filter monitors and predicts the patient's breathing pattern • Coaching of patient during breathing using audio and optional visual support • Includes five (5) marker blocks • Couch mount camera configuration with quick-lock mechanism **Prerequisites:** • If using ARIA® with RGSC in database mode, confirm ARIA compatibility in the latest RGSC Customer Release Note at MyVarian **Customer Responsibilities:** • Validate CT/PET scanners compatibility • Validate couch top compatibility	1
3.2	**RGSC version 2.0**	1
3.3	**Connect with Siemens** RGSC system configured for validated Siemens Scanners. **Features:** • Connectivity to Siemens CT scanners **Prerequisites:** • RGSC v2.0 or higher **Customer Responsibilities:** • Validate CT/PET scanners compatibility	1

Item	Description	
3.4	**VCD Option, Couch Mounted** Visual Coaching Device (VCD), couch mounted **Features:** • Visual Coaching Device (VCD) monitor to assist patient to achieve a steady and predictable breathing pattern • VCD connects to the Respiratory Gating for Scanners (RGSC) system wirelessly and supports all image acquisition modes, including breath-hold **Prerequisites:** • RGSC system v1.1 or higher **Customer Responsibilities:** • Customer must ensure that the compatible couchtop or overlay is installed.	1
3.5	**VCD Couch Mount for Siemens RTP** Visual Coaching Device (VCD) couch mount hardware for Siemens RTP® couchtop **Prerequisites:** • Respiratory Gating for Scanners (RGSC) v1.1 system or higher • Visual Coaching Device (VCD) **Customer Responsibilities:** • Siemens RTP couchtop • Customer must ensure that the compatible couchtop or overlay is installed.	1
3.6	**STD TRNG: RGSC** This onsite training is included with the purchase of Respiratory Gating for Scanners (RGSC). This training covers RGSC Overview, System Components, User Rights, Start up and Shut down, Reference Session Procedure, Visual Coaching Device (if applicable), Quality Assurance, and References. Training plan details will be provided by the training management team as part of your product implementation process. **Features:** • On-site training for using the RGSC system on a CT Scanner • Length: 1 day • Offer is valid for 18 months after installation of product **Prerequisites:** • RGSC system **Customer Responsibilities:** • Customer must ensure all trainees are available for the entire duration of scheduled training. **Notes:** • Training is non-refundable and non-transferable	1
4.0	TrueBeam Full Machine Commissioning	
4.1	**AOS Commissioning Custom Scope of Work** Advanced Oncology Solutions (AOS) will design a customized scope of work and pricing for comprehensive commissioning. **Features:** • Scope of Work (SOW) is attached	1
5.0	Edge Full Machine Commissioning with SRS/ICVI Cones	
5.1	**AOS Commissioning Custom Scope of Work** Advanced Oncology Solutions (AOS) will design a customized scope of work and pricing for comprehensive commissioning. **Features:** • Scope of Work (SOW) is attached	1

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Item	Description	
6.0	**Additional Advantage Credits (Training/Education)**	
6.1	**Advantage Contract Credits** Advantage Credits can be utilized for Varian's Professional Services, such as on-site applications training, education, consulting (in applicable regions), and third-party services including clinical schools that are purchased through Varian. For further details, please reference the attached Terms and Conditions. **Notes:** • Offer is valid for 24 months after purchase	
6.2	**Additional Advantage credits** (Qty : 300, Credit per Qty : 1.0) Undefined Advantage credits	300.0
7.0	**Additional TrueBeam/Edge 101 Education Courses**	
7.1	**Advantage Contract Credits** Advantage Credits can be utilized for Varian's Professional Services, such as on-site applications training, education, consulting (in applicable regions), and third-party services including clinical schools that are purchased through Varian. For further details, please reference the attached Terms and Conditions. **Notes:** • Offer is valid for 24 months after purchase	
7.2	**Travel and Lodging** Travel and Lodging that is purchased through Varian can only be used for attendance of education courses at a Varian Education Center and Varian clinical schools. Travel and Lodging cannot be used to attend tradeshows, or any event not related to Varian education and training courses. Allowance is applied only to the Travel and Lodging expenses, including airfare, hotel accommodations at a Varian preferred hotel, and a rental car. The customer is responsible for any expenses outside of the allowance. Travel and Lodging charges, including any booking fees, will be direct billed and are not reimbursable if travel is booked outside of the travel agents used by Varian Medical Systems only. Once the customer's course registration is confirmed, the customer will contact Varian's designated travel agency to make the necessary travel arrangements and must provide their Varian sales order number. The Travel and Lodging allowance expires 24 months from the acceptance date of the equipment. Any remaining balance is non-refundable and cannot be traded for other products or services.	
7.3	**ED: TB101 TrueBeam Platform Operations** (Qty : 4, Credit per Qty : 16.0) Includes Tuition and Materials for ONE Person This course provides training for Radiation Therapists responsible for the operation of the TrueBeam, providing an overview of the TrueBeam system, hands-on training to include: system components, shutdown procedure, startup with basic morning QA procedures, startup after an emergency shutdown and power failure, basic administrative information and treatment and imaging scenarios to include: basic 2D and 2D-2D imaging, treatment with automation, LaserGuard II and Machine Protection, imaging and treatment with custom blocks, Cone-Beam CT , gated imaging and treatment with intra-fraction motion review, auto-beam hold and emergency treatment. Designed for Radiation Therapists who will treat patients on a daily basis and will be able to teach TrueBeam others users in the department	64.0

Item	Description	
	Pre-Requisites: Clinical training in Radiation Therapy. Clinical experience if treating patients on Varian machines. Clinical experience of IGRT, OBI and Cone-Beam CT. Application has been made for MPCEC credits **Duration and Location:** 4.0 days Varian Education Center Las Vegas, Nevada, USA Advantage Credits Eligible Customer is responsible for all travel expenses (airfare, hotel, rental car, meals and travel incidentals), unless otherwise stated.	
8.0	Remove & Dispose of Linacs (3)	
8.1	**Remove/Dispose Existing Equipment** Remove & Dispose of Elekta (1)	1
8.2	**Remove/Dispose Existing Equipment** Remove & Dispose of Elekta (2)	1
8.3	**Remove/Dispose Existing Equipment** Remove & Dispose of CK (1)	1
9.0	Trade In Discount: Elekta (2), CK (1)	
9.1	**Trade-In Discount** Trade in of existing	1

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Summary of Advantage Contract Credits Quoted Above

Section 6.0

Year 1 Total	300.0
Total Credits	300.0

Section 7.0

Year 1 Total	64.0
Total Credits	64.0

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Sales Price Table

TradeIn-Cancellations	US $-1,000,000.00
Sales Total	US $7,562,011.00
Quotation Total	US $7,562,011.00

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Advantage Credits
Supplemental Terms and Conditions

(Form RAD 10442)

These Advantage Credits Supplemental Terms and Conditions ("**Supplemental Terms**") modify and supplement the Varian Terms and Conditions of Sale (Form RAD 1652, current version issued with the Quotation) (the "**Terms and Conditions of Sale**"). The terms of the applicable Varian Quotation ("**Quotation**"), its attachments, including the Terms and Conditions of Sale, are incorporated herein by this reference, and together with these Supplemental Terms and any applicable Third Party Terms (as defined in the Quotation) (collectively referred to as the "**Agreement**") will apply and govern the use by Customer of Advantage Credits.

1. General

The Varian Advantage Credit Program (the "**Program**") offers customers the ability to purchase Advantage Credits in advance that can be applied toward designated Varian Professional Services including certain consulting (e.g. specified and limited implementation and optimization services), on-site training, educational courses and a limited number of services provided by designated third party service providers, including clinical schools and physics commissioning services. Advantage Credits provide flexibility for the Customer to apply them interchangeably for those designated services available under the Program without having to modify the underlying Quotation and related purchase order. However, Varian must be notified in advance and in writing of any requested changes to selected services.

2. Expiration Schedule

Advantage Credits expire according to the following schedule:

Type of Order	Expiration Date
Advantage Credits only (no Varian products)	24 months from date of order
Advantage Credits with one or more Varian products	24 months from first date of product/service acceptance
Multiyear agreement	End of the term of agreement

3. Scopes of Work

Varian or its third party service providers may, at their discretion, set forth in a written Scope of Work (SOW) a description of the services to be provided by Varian or the third party service provider. If the services that will be purchased with Advantage Credits are defined within the Quotation, Varian will offer the specific services listed for the amount of Advantage Credits indicated. If Advantage Credits in the Quotation are "**Undefined**", Varian will indicate the number of Advantage Credits required for a particular service at the time the Customer wants to use them.

4. Third Party Service Providers

4.1 Certain services are provided by and through third party service providers that are not affiliated with Varian, namely clinical schools and physics services (e.g. commissioning). Varian disclaims any warranty or performance obligations related to any third party service provider and will act solely as a pay agent, to collect fees for services from Customer and to pay fees for such services to the third party service provider. Customer has the final decision to purchase services through Varian third party service providers or to select another service provider outside of the Quotation and Varian does not make any recommendations to use third party service providers.

4.2 **Changes to Third Party Service Providers by Customer.** Customer shall have a one-time right to request in writing that a third party service provider be replaced with an alternate provider that is participating in the Program. If Varian, at its sole discretion, approves the request, Customer shall be subject to any related termination fees and additional costs incurred by Varian or the third party service provider and other terms and conditions indicated in the

SOW and/or Quotation. Customer, the third party service provider, and if applicable, its subcontractors, shall have full responsibility for services as defined in the Quotation or SOW, as applicable, and Varian shall have no responsibility, obligation and/or liability whatsoever for those services. The third party service provider shall not be construed to be a subcontractor, employee, or agent of Varian. Varian will forward any requests for warranty work that it receives from Customer to the third party service provider. Except as otherwise provided in this section of the Quotation, the Terms and Conditions of Sale shall apply to this section just as it applies to all other parts of the Quotation.

4.3 **Changes to Third Party Service Providers by Varian.** Varian reserves the right, at its sole discretion, to change, from time to time, its list of third party providers that participate in the Program.

5. Performance of Services

All services shall be performed by Varian or the third-party service provider under permits, licenses, authority, supervision, and control of Customer and its staff, including licensed physicists, physicians, and other qualified healthcare professionals. Customer and its staff shall have the requisite permits (including applicable certificates of need), licenses, and authority to oversee and have such services performed on Customer's behalf.

6. Service Offerings

Varian reserves the right, at its sole discretion, to change the designated services which are offered under the Program at any time without prior notice. Varian will work with Customer to offer a mutually acceptable alternative or apply affected credits toward other offerings within the Program.

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Commissioning package for:

- Varian linac commissioning on Eclipse
- Use preconfigured model (from Varian Representative Beam data)
- ICVI / SRS cones commissioned if included on linac configuration

Work to be Performed by CTSI

- Data Collection as required by purchased Eclipse Algorithms
- SBRT small field data measurement down to 1cm x 1cm.
- Eclipse Calculated model validation and benchmarked
- IMRT and RapidArc Validation
- Enhanced Dynamic Wedge Validation
- Portal Dosimetry Commissioning
- Absolute Output Calibration – AAPM TG-51
- Customer Data Books and Commissioning Report

Photons

1. Open field PDD measurements for square/rectangular field sizes of:
    a. 2, 3, 4, 5, 5x20, 6, 8, 10, 12, 15, 20x5, 20, 25, 30, 35, 40cm^2
        i. Measured with a 0.125cc ion chamber
    b. 1, 2, 3, 4cm^2
        i. Measured with a solid-state detector
2. Open field Crossline Profiles will be measured for the field sizes of:
    a. 3, 4, 5, 5x20, 6, 8, 10, 12, 15, 20x5, 20, 30, 40cm^2
        i. Measured with a 0.125cc ion chamber
    b. 2, 3, 4cm^2
        i. Measured with a solid-state detector
    c. Depths of: Nominal d_{max}, 5, 10, 20 and 30cm
3. Inline profiles will be measured for the square field sizes of:
    a. 5, 10, 20, 30, 40cm^2
    b. Depths of: Nominal d_{max}, 5, 10, 20 and 30cm
4. Open field S_{cp} factors measured with CC13 chamber for square field sizes
    a. Measurement geometry shall be 100cm SSD, d_{max}
    b. 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30, 35, 40cm^2
        i. Measured with a 0.125cc ion chamber
5. Open field S_{cp} factors measured with CC13 chamber for rectangular field sizes
    a. Measurement geometry shall be SAD, d= 5 cm (4MV-15MV), d=10 cm (> 15MV).
    b. X = 3, 4, 5, 7, 10, 15, 20, 30, 40cm^2
    c. Y = 3, 4, 5, 7, 10, 15, 20, 30, 40cm^2
6. Small field data collection
    a. 1x1, 2x2 and 3x3 MLC defined fields via gamma analysis to calculated plans

   b. PDD, Profiles, and CAX Point Doses
7. Diagonal profiles for the maximum square open field size at depths of nominal d_{max}, 5, 10, 20, and 30cm
8. S_c Measurements will be made for square fields sizes of 2, 3, 4, 5, 6, 8, 10, 12, 15, 20, 25, 30 and 40 cm^2
   a. Measurement geometry shall be 100cm SDD, d_{max} with build-up cap
9. Dosimetric leaf gap and MLC transmission measurement
   a. MLC transmission and DLG using algorithm guide geometry and Varian provided delivery files
10. Water measurements QA Baselines for on-going QA

Electrons

1. Central axis depth ionization curves; Open 10x10 applicator
   a. Measured for each of the standard applicators to a depth R_p+10 cm or greater
   b. A CAX depth ionization scan for a 40x40 cm^2 open field for use in eMC algorithm configuration
2. Profiles measured for each standard applicator
   a. Crossline profiles will be measured at depths of d_{max}, d90 and d80
   b. Inline profiles will be collected for the 25x25cm^2 applicator at d_{max} depth.
3. Applicator factors for each applicator
   a. Applicator factors will be measured at 100cm SSD
   b. Factors will also be measured at 100 cm SSD for a 40x40cm^2 open field if required for the Eclipse eMC algorithm
   c. VSD will be calculated from in-air profiles at 100, 110, and 120cm SDD
   d. A crossline profile in air for a 40x40cm^2 open field at a distance of 95cm

Enhanced Dynamic Wedge

1. EDW profiles and wedge factors measured for the following field sizes at a depth of 5cm, 100cm SAD on a profiler
   a. 4x4, 10x10, 15x15 and 20x20
   b. EDW angles 10°, 15°, 20°, 25°, 30°, 45° and 60°
   c. Profiles are compared to the extracted Eclipse profiles

Eclipse beam model configuration

1. Verify console configuration for the linear accelerator is setup properly in Eclipse. Import the console configuration if necessary
2. Utilizing Varian Representative Beam data, configure beam models for each energy. This will include:
   a. AAA and AcurosXB® for x-rays and eMC for electrons
   b. PO for Optimization
3. Configure Portal dosimetry for each x-ray energy and run verification plans

4. Complete point dose calculations for comparison to measured point doses
5. Complete sample EDW, IMRT, and Rapid Arc plans
6. Portal Dosimetry: Calculation and verified test plans per quoted energies
7. Compare Eclipse calculated model data to the measured TrueBeam data

Eclipse Model Validation

1. Gamma Analysis of measured vs Eclipse calculated data
   a. Measured PDDs and Profiles are compared to calculated PDDs and Profiles in Eclipse via calculated test plans and dose extraction
2. Point dose measurements for model and absolute dose validation
   a. Measured along CAX for photon field sizes 6x6, 5x20, 10x10, 15x15, 20x20, 20x5, 30x30, 40x40 cm^2
   b. Measured along CAX for electron field for all applicators at d_{ref}, converted to d_{max}
   c. Combined with all relative measurements to create absolute dose comparisons for all curves
3. Absolute dose validation (measured vs calculated) for 1x1, 2x2 and 3x3 MLC defined fields, at depth of 10 cm, with TRS-483 corrections

IMRT and RapidArc Validation

1. Measurements for RapidArc commissioning
   a. RapidArc Commissioning per Varian guidelines using Varian provided delivery files
      i. Output linearity during arc delivery
      ii. DMLC dosimetry to evaluate the effects of gravity on MLC leaf position
      iii. MLC Picket fence at cardinal angles
      iv. MLC picket fence with RapidArc
      v. MLC picket fence with RapidArc with errors
      vi. Accurate control of dose rate and gantry speed during rapid arc delivery
      vii. Accurate control of leaf speed during rapid arc delivery
2. Measurements for Portal Dosimetry commissioning
   a. PDIP models configured for all energies

Absolute dose calibration check

1. Absolute dose calibration check of linac using the AAPG TG51 protocol. For reference only. Client's physicist must do the final absolute dose calibration of the linac.
2. The absolute dose calibration check will be performed using the geometry specified by the customer Physicist (SSD, reference field size)

Commissioning review with customer physicist

1. Review of data collected and data book
2. Review of TPS configuration and preference settings
3. Demonstration of QA results

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"CON Exhibit B"

KIEFNER BROS. INC.
General Contractors

1459 N. Kingshighway
Cape Girardeau, MO 63701
P 573.334.0707
F 573.334.0708

Liz Glastetter, Director of Cancer Services
Saint Francis Medical Center
211 Saint Francis Drive
Cape Girardeau, MO 63703

March 12, 2025

RE: Vault Modifications to Accommodate New Varian Edge Radiosurgery Machines (2 Vaults)

Dear Liz:
As per your request, Kiefner Brothers, Inc. has prepared a budget estimate for the work required to modify two existing accelerator vaults to accommodate new equipment by Varian.

The scope of the work considered is in accordance with our discussion at the walk through and can be summarized as follows: select demolition, including the sawing and removal of concrete floors to allow for electrical work and new equipment pit, concrete patching as required, metal framing, drywall, doors, frames, hardware, ACT, select casework, painting, LVT Flooring, HVAC piping for equipment by others, electrical power for equipment by others, lighting, and system adjustments.

Estimated Cost of Labor, Material, and Equipment $358,000

Clarifications:

- Budget includes a contingency of 10% to account for unknown conditions.
- Ceiling finishes are priced as premium quality to allow for esthetically inviting/calming environment.
- We have assumed that the existing radiation protection (lead) enclosure is adequate for the new equipment. No additional X-ray protection is included in this budget.
- We have predicated this budget on an estimated 2nd or 3rd quarter, 2025 work program.
- We have attached a copy of our electrical subcontractor's estimate for review and backup.

Please advise if you have questions. Thank you for allowing us to present this budget estimate. Kiefner Brothers, Inc. welcomes the opportunity to be of further service.

Respectfully,

Thomas B. Kiefner, President
Kiefner Brothers, Inc.

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"CON Exhibit C"

Power Systems
Electrical – Industrial - Commercial
433 County Road 638, Cape Girardeau, MO 63701
www.KTPowersystems.com (573) 388-4524 – Fax: (573)388-4547

~~May 3, 2023~~
Feb 26, 2025

Mr. Tom Kiefner
Kiefner Brothers Construction
1459 North Kingshighway
Cape Girardeau, MO 63701

RE: Cost Proposal for Saint Francis Linear Accelerator Replacement
from Eleckta to Varian

Dear Mr. Kiefner,

The following is our costing for the upgrade from the Eleckta equipment to the Varian equipment. In reviewing the Varian specification sheets we are seeing that additional conduit will need to be installed, a new floor trough and a new floor box.

We have not figured an additional 4" conduit from the back to the existing control desk. We have figured the two 4" conduits from the back to the new floor box that is approximately 24" x 24", with Kiefner Brothers sawing the floors. We have a budget for the floor trough and floor box to be fabricated. The client interface we have figured on installing conduit above the floor in the back room area instead of below the floor.

Our budget costing includes new LED recess can lighting and new lighting control for them. We have not figured a new scene light but we can re-install the existing and maybe price a new scene if the owner so chooses.

We are assuming that all door interlocks and wiring will stay as is presently installed but just interface with the new equipment.

The dividing wall will be removed and the back area re-worked for power and lighting. The current circuit breakers feeding the equipment, one will need to be replaced to an 80 amp circuit breaker and one will be removed.

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Our budget costing now is $ ~~48,500.00~~. $ 56,500

If you have any questions regarding the above information please let me know.

Sincerely,

X 2 Units

3/12/25
HK

Robin Koch Tolbert, E.E.

$ 113,000

Certified WBENC Women's Business Enterprise

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"CON Exhibit D"

TCHOUKALEFF KELLY HARTKE
HEALTHCARE FACILITY PLANNING, PROGRAMMING, DESIGN

March 3, 2025

Chris Johnson
Facilities Manager
Saint Francis Healthcare System
211 Saint Francis Drive
Cape Girardeau, MO 63703

Re: Proposal for Architectural and Engineering Services for Saint Francis Healthcare System Radio Surgery and waiting room renovation.

Chris,

Please find below a fee proposal for schematic design, design development, construction documents, bidding and construction administration for the Radio Surgery and Waiting room renovation.

This project is a partial renovation of (2) existing radio surgery vault treatment rooms that will include equipment replacement. This will be completed in (2) phases to allow one Radio Surgery room to be operational. In addition, this will include the expansion of the waiting room to include (3) dressing rooms. Phases to be determined throughout the Schematic Design phase.

Other consultants included in this proposal are:

Strickland Engineering – MEP/FP engineering
ASDG, LLC – Structural Engineering

SECTION I – PROFESSIONAL SCOPE OF SERVICES

ARCHITECTURAL SCOPE
Schematic Design
The architectural scope of this work is to develop functional and space programming that will translate to a schematic design for the newly phased construction of the (2) radio surgery vault rooms and waiting area.

- Develop project goals and objectives
- Walk existing site to verify site conditions
- Incorporate preliminary fixtures and equipment programs including all major medical equipment items in the project concept. FF&E information provided by SFH
- Prepare and document schematic design plan based on the results of the functional and space programming
- Coordinate Vault design with equipment vendor's proposed design plans and cut sheets.
- Prepare phasing documents to illustrate construction phases.
- 1 on-site visit included. Balance are virtual meetings as needed.

121 Hunter Avenue
Suite 205
St. Louis, MO 63124

Telephone: 314.721.1618
Fax: 314.721.8119
www.tkhinc.com

Saint Francis HEALTHCARE

TKH TCHOUKALEFF KELLY HARTKE
HEALTHCARE FACILITY PLANNING, PROGRAMMING, DESIGN

Design Development
This scope of work is the design development phase for new phased construction of the (2) radio surgery vault rooms and waiting area.
Presentation of floor plan with equipment & Furnishings layout

- Presentation of preliminary Interior elevations with coordination of MEPFP devices.
- Presentation of materials for Owner approval.
- Presentation, review and coordination of MEP devices
- 1 on-site visit included. Balance are virtual meetings as needed.

Construction Drawings
This scope of work is for the construction documents including but not limited to:

- Permit/ Bid documents
- Coordination of FF&E selections into the contract documents
- Local Plan review/ approval
- Local AHJ plan review and approval
- Bid process participation.

Construction Administration

This scope of work is for the construction administration including but not limited to:

- Contractor review/ selection
- Response to contractors RFI's
- Review of submittals
- Construction progress review and meeting participation
- Pay application and change order review/ processing
- Punch lists and follow-up
- Participation related to the State Architect Inspections (if applicable)
- Coordination of close-out documents.
- 1 on-site visit included. Balance are virtual meetings as needed.

<u>Additional Services</u>
Additional Services include all services that are not part of the Scope of Work as described above. This includes those services that arise because of unforeseen circumstances and will require an additional fee. Typical items included in Additional Services are as follows:

1. Code Consultation Services
2. As-Built documentation
3. Artwork Selection and Coordination
4. Furniture Selection and Coordination
5. Signage Selection and Coordination
6. Services resulting from changes in scope or magnitude of the project as described and agreed to under the Scope of Work.
7. Services in connection with a public hearing, arbitration, or legal proceedings.

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Scope of Services:
DESIGN PHASE: The Engineer will provide the Client the MPE/FP engineering design services required to provide the engineering drawings and technical specifications to solicit bids from sub-contractors, secure MPE building permits, and to construct the above project.

PERMIT/BID PHASE: The Engineer will provide consultation to the Client during the bid phase of the above project.

CONSTRUCTION PHASE: The Engineer will provide consultation, shop drawing review for the Client, and one site observation visit to the project during the construction phase of the above project.

SECTION II – PROFESSIONAL SERVICE FEES

The proposed fixed fee for architectural and engineering services total: SD, DD, CD & CA = $90,400.

Reimbursable fees at a range of $2,500 for expenses such as mileage, lodging, meals, printing costs will be billed separately at cost and as expended. These expenses are not included in the fee cost above.

We appreciate the opportunity to submit this proposal. If acceptable, please return an executed copy for our files.

Sincerely,

Steve Hartke, AIA, ASHE

President/Managing Principal

Approval from Saint Francis Healthcare System

_____ _____

Signature Date

_____

Title

121 Hunter Avenue
Suite 205
St. Louis, MO 63124

Telephone: 314.721.1618
Fax: 314.721.8119
www.tkhinc.com

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Divider III.

Service Specific Criteria and Standards:

1. Describe the financial rationale for the proposed replacement equipment.
2. Document if the existing equipment has exceeded its useful life.
3. Describe the effect the replacement unit would have on quality of care.
4. Document if the existing equipment is in constant need of repair.
5. Document if the lease on the current unit has expired.
6. Describe the technological advances provided by the new unit.
7. Describe how patient satisfaction would be improved.
8. Describe how patient outcomes would be improved.
9. Describe what impact the new unit would have on utilization.
10. Describe any new capabilities that the new unit would provide.
11. By what percentage will this replacement increase patient charges.

1. **Describe the financial rationale for the proposed replacement equipment.**

   Historically, SFMC's radiation oncology clinic has provided radiation therapy treatments for patients with the Synergy and Infinity linear accelerators. By purchasing the TrueBeam and the Edge, SFMC will be able to continue providing radiation therapy to its patients in need, including SRS. Purchasing the TrueBeam and Edge will ensure we are able to continue to provide quality care to patients with increased technology, innovation, and efficiency.

2. **Describe if the existing equipment has exceeded its useful life.**

   The Infinity will reach its end useful life on or about May 1, 2026. EOGS for the Infinity was May 1, 2024. The Synergy will reach its end of useful life on or about May 1, 2030. EOGS for the Synergy will occur on or about May 1, 2027.

3. **Describe the effect the replacement unit would have on quality of care.**

   By replacing the Synergy and Infinity, SFMC will have the ability to continue providing exceptionally reliable radiation therapy treatments for its patients. Ensuring that SFMC's equipment is up to date with the most advanced technology ensures patients can continue to receive personalized treatments close to home. The TrueBeam and Edge offer significant quality advancements compared to the Synergy and Infinity. The Edge provides a dedicated SRS machine with advance precision and efficiency. Both the Edge and TrueBeam have high quality imaging with advanced KV, MV, and CBCT capabilities, ensuring visualization for treatment accuracy. The TrueBeam and Edge also integrate advanced safety features, faster treatment delivery, and portal dosimetry technology allowing for real time verification of dose delivery.

4. **Document if the existing equipment is in constant need of repair.**

   The Infinity had an average of twenty-five (25) repair service requests a year from 2022-2024. The Synergy had an average of thirty-two (32) repair service requests a year from 2022-2024. These service call requests were addressed with SFMC's current service agreements and availability of equipment to mitigate any issues or extended disruptions in uptime.

5. **Document if the lease on the current unit has expired.**

   SFMC purchased the Infinity and Synergy. There were no leases for either unit.

6. **Describe the technological advances provided by the new unit.**

   The TrueBeam and Edge provide significant technological advancements in radiation therapy compared to SFMC's current linear accelerators, including improved treatment precision, faster delivery times, and enhanced imaging capabilities. In addition, the TrueBeam and Edge

have advanced safety features, which include real-time tumor tracking and high-definition multi-leaf collimation, allowing for more accurate targeting of tumors while minimizing radiation exposure to healthy tissue. The TrueBeam and Edge both offer the newest technology of HyperArc and RapidArc for SRS, SBRT, Volumetric Modulated Arc Therapy ("VMAT"), and Intensity-Modulated Radiation Therapy ("IMRT") treatments. Varian HyperArc is an advanced automated stereotactic radiosurgery solution that uses precise, efficient, non-coplanar treatment of brain tumors in a single session while minimizing radiation exposure to healthy tissue. Varian RapidArc is an advanced VMAT and IMRT technique that delivers highly precise treatment in a continuous arc reducing treatment time while maximizing tumor dose and minimizing dose to healthy tissue. Additionally, the streamlined workflow and advanced software will improve overall efficiency, reducing patient treatment times and enhancing the quality of care for patients.

7. **Describe how patient satisfaction would be improved.**

   Acquiring the TrueBeam and Edge will enable SFMC to continue to provide excellent state of the art care to its' patients. Ensuring that SFMC's radiological oncology equipment is up to date with the most advanced technology ensures that SFMC's patients can continue to receive their personalized treatments close to home. Patients will have the capability to receive hypofractionated treatments, which have been shown to increase compliance of treatment plans and decrease financial toxicity for patients.

8. **Describe how patient outcomes would be improved.**

   Replacing the machines with the TrueBeam and Edge would improve patient outcomes by enhancing treatment precision, reducing treatment times, and increasing overall efficiency. The TrueBeam and Edge systems offer advanced imaging and motion management capabilities, allowing for more accurate tumor targeting and sparing of healthy tissue. Faster treatment delivery and automation features would lead to shorter appointment durations, improving patient comfort and reducing the risk of errors. In addition, the ability to deliver high-dose, highly conformal treatments with newer technology would increase local tumor control and quality of life for patients

9. **Describe what impact the new unit would have on utilization.**

   Replacing the Synergy and Infinity with the TrueBeam and Edge would streamline treatment delivery by improving efficiency and reducing machine downtime. The TrueBeam and Edge would increase utilization by enabling faster, more precise treatments, accommodating higher patient volumes, and enhancing overall workflow.

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10. Describe any new capabilities that the new unit would provide.

The new TrueBeam and Edge will provide treatment precision, speed, and flexibility compared to the current linear accelerators. The TrueBeam and Edge linear accelerators offer multiple treatment energies, advanced imaging capabilities, real-time tumor tracking, and portal dosimetry. The TrueBeam allows for faster treatment delivery with high dose rate modes, reducing patient treatment times while maintaining quality and precise treatments. The Edge is specially designed for stereotactic radiosurgery SRS and stereotactic body radiation therapy SBRT offering sub millimeter accuracy and improved workflow efficiency.

11. By what percent will this replacement increase patient charges.

Patient charges are not expected to increase by replacing the Synergy and Infinity with the TrueBeam and Edge.