University of the Philippines Manila
The Health Sciences Center
SPECIAL BIDS & AWARDS COMMITTEE (SBAC)

PR No. : PUR15-11-2008
End-User : RADIOLOGY DEPT. PGH
Project : SUPPLY & INSTALLATION OF LINEAR ACCELERATOR (LINAC) & SUPPORTING EQUIPMENT

Opening of Bid: 18 December 2015

ITEM NO.	QTY	UNIT	ITEM DESCRIPTION	APPROVED BUDGET FOR THE CONTRACT PER UNIT (PhP)	QUOTATIONS (in figures / in words) (all taxes included)
1	1	*lot*	**LINEAR ACCELERATOR (LINAC) & SUPPORTING EQUIPMENT** **LINEAR ACCELERATOR** **Brand new, not reconditioned** **Including its parts & accessories** **1. LINAC Standard Features:** **Includes all Linear Machine feature with full options on all the applicable specifications** a. Gantry head collision detector b. Segmental, dynamic and dynamic arc photon treatment c. Digital gantry display d. Laser backpointer e. Standard spare parts f. Beam isocenter accuracy g. IMRT, IGRT, VMAT/RapidArc, Respiratory Gating, SRS, and SBRT enabled h. Product manuals i. Uninterrupted power supply (UPS) for LINAC if hospital cannot provide generator with an automatic transfer switch from generator to LINAC j. Installation k. Guarateed a lifespan of at least five (5) years for the power source with replacement if less than five (5) years without additional cost to the institution **2. Energies** a. Photon Energies (6MV and 10MV) b. Five Electron Energies (6, 9, 12, 15, 18 MeV) **3. Couch** a. IMRT, IGRT, VMAT/RapidArc, SRS &SBRT, Capable Couch Top b. With attachment for Stereotactic Radiosurgery (SRS) / Stereotactic Radiotherapy(SRT) / Sterotactic Body Radiotherapy (SBRT) c. Supporting patients up to 200kg or greater d. Fully compatible with existing immobilization accessories for accurate patient positioning e. Emergency off buttons on both sides of couch f. Grab handles for easy manual motion g. Identical couch for existing simulation and treatment aids in duplicating patient setup h. Removable couch inserts for breast and head and neck lateral oblique treatments i. Removable couch inserts for pelvis and abdomen lateral oblique treatments	**280,000,000.00**	

Approved by:

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Chairperson

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			j. Automated repositioning without re-entering the vault / table assisted set-up and remote automatic table moves supporting automatic table translation and isocentric set-up k. Side panel controls to adjust all couch motions l. Switches for wall and back-pointer lasers, as well as room, field and range-finder lights m. Must be capable of manual operation in case of power failure **4. Collimator System and Accessories: MLC, 120 leaf or 160 leaf (0.5cm MLC width)** a. MLC Communication / Connectivity System b. Multileaf Collimator Accessory System c. Minimum field size: 0.5cm x 0.5cm or smaller d. Maximum field size: 40cm x 40cm or greater e. Radiation leakage shall not exceed 0.1% of the isocenter absorbed dose f. Accessory mount / linear accelerator latch mounting system g. Compensator mount or tray / short shadow tray for shielding blocks h. Mechanical front pointer (range: 85cm to 110cm) i. Electron applicators, one of each: 6x6 or 6x10, 10x10, 14x14, 15x15, 20x20, 25x25 (if available) j. Electron beam shaping kit (for electron blocks) k. Twenty (20) block trays l. Dynamic or motorized (integrated auto-wedge) wedges and/or hard physical wedges (if available) m. MLC standard spare parts kit n. With provision for SRS,SBRT and SRT attachment. **5. Intensity Modulated Radiation Therapy (IMRT)** a. Able to do large field IMRT procedures b. Able to do sliding window/dynamic, step and shoot/static and dynamic art. **6. Volumetric Modulated Arc Therapy (VMAT) or RapidArc** a. Able to do 360-degree rotation of gantry in a single or multi-arc treatment b. Able to do simultaneous modulation of MLC aperture shape, beam dose rate, and gantry rotation speed during beam delivery. **7. Portal Imaging Device (2D MV Imaging System)** a. Amorphous silicon material (receptor type) b. Auto match and manual match capabilities c. Compatible with the Radiotherapy System network and database		

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			d. Compatible with other (or 3rd party) oncology information systems e. With corresponding license for image acquisition and review capability f. Port film / hook & latch graticule and phantom for portal imaging QA (Las Vegas Phantom) g. Able to do Portal Dosimetry to record the intensity patterns of IMRT fields for pretreatment quality assurance of IMRT planning and delivery. h. Array Area: at least 40 cm x 30 cm **8. kV Imaging System** a. Imager Amorphous silicon material (receptor type) b. Able to do three imaging modes: 2D radiographic acquistion, 2D fluoroscopic image acquisition and 3D cone beam computed tomography (CBCT) acquisition. c. Array area: at least 40cm x 30cm d. kV Source / X-ray Tube: Fan cooled x-ray tube e. X-ray Collimation *i.* Comprised of a fixed primary beam definer and an adjustable system blade collimation *ii.* Movement of field opening is symmetric and assymetric f. Mechanical Specifications *i.* Fully motorized assemblies that support and position the image detector unit and kV source *ii.* Automated motion from either inside the treatment room or remotely from the control console *iii.* Collision detection capbility *iv.* Arm controls: retractable kV tube and imager support > Hand pendant > Console *v.* Emergency features Includes back-up motion control in case the imager and controller becomes defective or when communication with hand pendant cannot be established g. Software Able to do of the following: kV, kV pair; MV (EPID), kV pair; Cone beam CT h. Ability to export images via DICOM for image analysis i. Include automatching tools, image match verification tools [blend images, split window, moving window (spy glass) and complementing color blending] and other tools (measure distance and measure angles) to the imported DICOM images		

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			j. Cone beam CT CBCT acquisition mode available: full-fan and half-fan k. QA and Calibration Phantoms *i.* Isocenter cube phantom *ii.* Marker phantom *iii.* Phantom to quantify the spatial resolution and contrast of the planar kV imager *iv.* CBCT phantom for the evaluation of the image quality of 3D CBCT, includes various inserts and can be used to measure different aspects of CBCT image quality such as: > CBCT body normalization phantom (polyurethane foam) > CBCT head normalization phantom (high density polyethylene foam > CBCT geometry calibration phantom > CT image quality phantom **9. Stereotactic Radiosurgery / Radiotherapy Mode and Components** a. Able to deliver stereotactic treatments at high dose rates. b. Able to do MLC based stereotactic Radiosurgery treatment delivery. c. Dose rate: maximum at least 1200MU per min at Dmax d. Stereotactic motion disable Mechanical couch locks and electrical disable for gantry and couch e. Includes conical collimators with the following diameters: 4mm, 5mm, 6mm, and 7.5mm f. Includes the latest vesion of dedicated stereotactic RT planning system (iPlan RT planning software or equivalent software for SRS and SBRT planning) > able to do angiographic registration for AVM treatments > smaller and intelligent dose grid size 0.5mm (design for radiosurgery) and reduces calculation time > can be used as a contouring station/image manipulation > able to do automatic segmentation > supports circular and all types of MLC treatment Includes connection to the radiation oncology management system and existing CT scan simulator machine g. Minimum field size to treat is at least 4mm lesion and must be tested during the acceptance testing h. Includes complete set of stereotactic components compatible with the purchaseed linear accelerator. i. Stereotactic headring /coordinate frame, CT localizer, and couch mount device. ii. Frameless stereotactic immobilization for intracranial treatment that includes: >personalized/individualized bite block system (dental impression/dental mold): 24 units set assembly >personalized/individualized head support system:24 units >re-usable customized head and neck support and immobilization: 2 units iii. Optical positioning system		

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			10. Respiratory Gating System a. Able to do respiration-synchronized imaging and treatment and 3D real-time patient position monitoring. b. Includes all components and software to support gated treatment delivery and image acquisition on the accelerator and gated simulation on the existing CT scan simulator. c. Includes infared tracking camera system, body markers for breathing monitoring, isocenter calibration devices, camera calibration devices, workstation and all required components and QA Tools. d. Supports both retrospective and prospective gating of CT scans **11. Console** a. Auto field sequencing b. Able to show patient set-up, verification and recording of the treatment history record to the OIS or a file c. Allows for imaging of treated fields, before, during, or after the treatment beam for treatment verification needs d. Photos, activity, set-up and patient notes displayed on treatment queque e. Console package, console with UPS per computer system with at least 15mins working time capacity f. LINAC interlock system and emergency buttons the event of any interlock system fail g. All interlock systems must be functioning, efficient, reliable and automatically terminates radiation beam in the event of any interlock system fail. h. Beam- off interlock i. Door interlock j. Emergency buttons must be located or installed in an easily accessible areas (couch, maze, console) k. In-room monitor with mounting kit l. LCD display monitor for Treatment Room wall mount m. In-room monitor with cable kit including video cable and video switch n. Remote access ready on all computer systems o. Factory data set **12. Beam Matching** The offered LINAC must be beam matched with the existing LINAC in terms of machine's dosimetric characteristics of all photon and electron energies and must be verified as part of the acceptance testing. **13. Accessories:** a. Neutron door (borated polycarbonate) b. Two (2) Lock Bars (ordinary and MRI compatible) c. Four (4) Red Lasers, Three (3) Crosshairs and one (1) Sagittal d. One (1) Patient Intercom e. CCTV Camera: Two (2) pieces camera; Two (2) Monitors/Views		

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			f. One (1) water chiller (Note: provide at least two units if the chiller is a third party item and not from the linear accelerator machine's manufacturer) g. Two (2) compressors h. Three (3) dehumidifiers (2 for LINAC room and 1 for treatment planning room) i. Mechanical front pointer j. One (1) styroformer block cutter for photon blocks *i.* Shielding block mold cutter *ii.* With verification light *iii.* With rigid box frame ensures that cuttting wire is precisely aligned between source point and block tray k. One (1) styroformer block cutter for electron blocks heated, replaceable wire makes precision cuts in 0.5" to 3" foam l. One (1) melting pot for cerobend blocks / alloy m. One (1) MRI flat couch overlay / table top, compatible with the existing MRI machine [SIEMENS, Essenza TIM (25x16)] and purchased linear accelerator n. One (1) CT flat couch overlay / table top compatible with the existing CT-Scan machine and purchased linear accelerator **14. Immobilization Devices** All immobilization devices and accessories shall be of the same brand and model with the one being used by the radiation oncology section. *a. Head & Neck (headrests, thermoplastic masks and* baseplates must be compatible with each other) *i.* Three (3) baseplates for head & neck (carbon fiber; two (2) standard and one tilting) *ii.* Two (2) baseplates for head, neck, and shoulder (carbon fiber) *iii.* Fifty (50) head & neck thermoplastic masks *iv.* Thirty (30) head, neck and shoulder thermoplastic masks *v.* Two (2) sets headrests (A-F), with pedia sets and prone headrests (comprehensive range of neck angulations such as hyperextended, standard set-up, prone for adults and separate sets for pediatric patients [prone and supine]) *vi.* Bite block; standard 40pcs & small 10pcs		

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			vii. Two (2) sets of shoulder retractor *viii.* One (1) MRI compatible head, neck and shoulder baseplate *b. Chest and Breast* *i.* One (1) breast boards (Carbon Fiber) *ii.* One (1) wing boards (Carbon Fiber) *iii.* Body fix / vac-lock; five (5) whole / full body and five (5) half body *iv.* One (1) vacuum/compressor pump *c. Abdomen and Pelvis* *i.* One (1) belly board (carbon fiber) *ii.* One (1) abdomen and pelvis immobilization system with abdomen and pelvis baseplate (Carbon Fiber) *iii.* Twenty (20) Reinforced Thermoplastics compatible with the abdomen and pelvis baseplate *D. Two (2) Complete set for SBRT Immobilization and Fixation System for Indexed Tabletops* *i.* Includes T-shaped and other compatible vacuum activated cushion (patient mold integrity for six weeks or more) *ii.* Carbon Fiber Platform *iii.* Patient handles *iv.* Different types of bridges *v.* Compatible lock bars *vi.* Shoulder restraints *vii.* Forehead restraints *viii.* Knee support cushion *ix.* Respiratory plate places at the level of the diaphragm to assist in restricting respiratory movement *x.* Rail locking Knee and Arm Support *E. Others* *i.* Multi-purpose support cushions and wedges *ii.* Patient transfer board *iii.* Tungsten eye shield: one (1) piece each of small, medium and large *iv.* Testicle shield: one (1) piece each of small, medium, and large *v.* Two (2) patient restraint belts *vi.* Two (2) Calipers: stainless steel w/ parallel arms and calibrated in cm *vii.* Tissue equivalent build up materials/Boluses: Two (2) each of 0.5 cm and 1 cm thickness		

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			viii. Lead door for the LINAC bunker (Note: if the LINAC machine offered has an energy of ≥10MV, provide Neutron Door instead) *ix.* Warning lights at the LINAC room door **15. Oncology Information System (ARIA or MOSAIQ)** One (1) system database server with UPS a. Should include patient data administration, independent treatment verification, treatment/port image review, time planner / patient scheduler, electronic patient RT chart and chart audit / checking, archive, restore b. Small or medium rack server with 2000 patients capacity prior to archiving c. Three (3) computer workstations with monitors, licenses and UPS for each unit d. Appropriate port hubs and all necessary network connections needed e. Able to do RT patient data transfer to and from (import and export) the existing radiation oncology information system server f. To include connection to the existing radiation oncology information system g. Remote access to the distributor must be provided for remote service and diagnostic. This includes internet connection during the warranty period. **16. Treatment Planning System** a. Treatment Planning database integrated to the information system b. Knowledge Based Contouring Package c. Image support including CT Scan, MRI and PET and capable of image fusion d. Inverse Planning Software for IMRT and VMAT/RapidArc e. Able to display target and critical structure motions using 4D tools for Respiratory Gated treatment plans for IMRT, VMAT/Rapid Arc, and SBRT. i. 4D image series are displayed as movie loops and as blended or blinking images. ii. 4D image displays supports CT.PET/CT,PET and images from the kV imaging system attached to the machine. f. IMRT Planning License- supports incensity modulated Radiotherapy treatments. g. Volumetric Modulated Arc Therapy / RapidArc Planning License - supports dynamic arc treatments produced through volumetric dose optimization; supports both coplanar and non-coplanar arcs		

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			h. SRS and SBRT Planning License - capable for frame and frameless immobilizations. Software includes pre-defined arc set templates. i. DICOM image transfer (from CT-sim and CD or DVD) and plan exports (RTPS to LINAC) license j. Plan comparison tools including multiple trials, side by side display of alternative plans and single display of DVHS for alternative plans k. System administration utilities including back-up, archive and restore l. Portal dosimetry package m. Multiple desktop environment (at least four) for an enhanced multi-tasking system administration abilities. n. One (1) heavy duty laser monochromatic printer o. One (1) heavy duty laser color printer p. Two (2) calculation workstations / planner desktop with physics license and UPS with at least 15minutes working time capacity for each unit. q. Two (2) non-calculation workstations / physician's desktop with contouring license and UPS with at least 15 minutes working time capacity for each unit **17. Bunker / Room Construction : Bunker is designed for the purchased LINAC Machine** a. Complete transfer of the Generator Set found at the side of the Cancer Institute building to give way for the needed LINAC Bunker. This also includes reconnecting the Generator Set to its original power source and to SOJR power supply line. b. Construction of LINAC room with appropriate radiation shielding and essential rooms. c. Complete supply, installation and commissioning of all electrical works for the LINAC facility which includes routing of wires from the OETS identified tapping point at the power house (main power line and hospital back-up generator) and all the materials needed (wires, transformers, circuit breakers, etc.) and submission of all electrical plans. d. Complete water supply and plumbing connections for the water chiller connecting to the existing water system of the hospital. e. Includes connection of the existing CT-simulator machine to the treatment planning system and all network connections for the radiation oncology management system, treatment planning system and LINAC control console.		

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			18. Radiation Therapy Area a. *LINAC Treatment Room* *i.* Flooring: Roll-type with 2.0 mm thickness for heavy duty area, up to 0.90 m on wall height with cove former & copping *ii.* Provide dimmer switchfor lights *iii.* Provide slanted holes/ducts provision for physics, instrument cables and LINAC machine cables towards the console area *iv.* Provide built-in wooden cabinets with provision for LINAC accessories, wedge trays and compensator tray storage, electron applicators, block tray storage, and patient immobilization devices (patient's masks, breast boards, cradles) *v.* All built-in wooden cabinets shall be made of plywood with laminated finnish. *vi.* Ceiling: Accoustic board with T-run b. *LINAC Control Console* *i.* Ceiling: Fixed: Cement board with light metal furring *ii.* Flooring: Roll-type with 2.0 mm thickness for heavy duty area, with cove former & copping *iii.* Door: Flash door with 2 x 6 S4S KD Jamb *iv.* Provide countertop / customized computer counter for the LINAC console and its accessories, this shall be made of laminated board. *v.* Provide hanging cabinets/bookshelves with door and shall be made of laminated board c. *Treatment Planning Room* *i.* Ceiling: Fixed: Cement board with light metal furring *ii.* Flooring: Roll-type with 2.0 mm thickness for heavy duty area, with cove former & copping *iii.*. Door: Flash door with 2 x 6 S4S KD Jamb *iv.* Provide counter top with drawers for the treatment planning system computers and shall be made of laminated boards *v.* Provide bookshelves and filing cabinets with door and shall be made of laminated board **19. Patient Related Area** a. *Patient Waiting Area* *i.* Ceiling: Acoustic board with light metal furring		

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			ii. Flooring: Roll-type with 2.0 mm thickness for heavy duty area, up to 0.90 m on wall height with cove former & copping *iii.* Provide curtain rail and curtain for patient dressing room b. *Two Comfort Rooms (one ordinary and one disabled friendly)* *i.* Ceiling: Acoustic board with light metal furring *ii.* Flooring: 300mm x 300mm floor & wall tyle *iii.* Water closet and urinal. *iv.* with hand washing sink and faucet c. *One Consulation Room* *i.* Ceiling: Fixed: Cement board with light metal furring *ii.* Flooring: Roll-type with 2.0 mm thickness for heavy duty area, with cove former & copping *iii.* Door: Flash door with 2 x 6 S4S KD Jamb *iv.* Provide built-in bookshelves with dresser shall be made of laminated board with door *v.* Provide curtain rail and curtain for patient examination table *vi.* With patient grab handles d. *Patient Information / Reception Counter* *i.* Ceiling: Fixed: Cement board with light metal furring *ii.* Flooring: Roll-type with 2.0 mm thickness for heavy duty area, with cove former & copping *iii.* Door: Flash door with 2 x 6 S4S KD Jamb *iv.* Receiving counter on granite finnish *v.* Provide built-in bookshelves with computer compartments (for two desktop computers) and shall be made of laminated board with door *v.* Provide built-in/wall mounted cabinets with painted finish for keeping patient charts and films. ***Note:*** * *PVC hand and foot wall guard shall be installed on all hallways* * *Provide stainless steel finishes on all hallway doors (this includes all jambs and doors)* * *Entrance door: Double door with viewing glass on 2x6 S4S KD jamb* * *All existing windows shall be of the same design if replaced.* * *Wall paint color and design shall be finalized at the end of the renovations.*		

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			20. Users' Training a. Users' Training for the Radiotherapy Personnel on all unit systems delivered by the supplier's foreign physicists and application specialists, which includes the following: *i.* LINAC machine operation (basic operation, kV imaging system training for Radiotherapy Technicians and Physicist , IGRT treatment, SRS and SBRT treatment, respiratory gating and volumetric-modulated arc treatment) *ii.* Information Management System (basic operation) *iii.* Treatment Planning System (for conventional, 3D, IMRT, IGRT, respiratory gating, SRS, SBRT and volumetric modulated arc therapy: basic operating, beam data commissioning, beam data modelling, treatment planning techniques *iv.* All QA/QC tools and radiation dosimetry equipment purchased (on site and off-site classroom setting) ***Note:*** *International training in a clinical and classroom setting for Respiratory Gating, Stereotactic Radiosurgery (SRS and SBRT)Volumetric-modulated Arc-therapy, and Image guided Radiotherapy.* b. Data gathering and encoding of data to the TPS shall be done by the in-house Medical Physicists to be guided by the unit supplier phycists. c. Supplier's Physicists can speak fluently in English. The in-house medical physicist reserves the right to refuse the presence of supplier's physicist if he/she cannot understand and the supplier is obliged to send another one. d. Five (5) Radiation Oncologists and three (3) Neurosurgeons for international training to be provided before or within the first year of the warranty period. e. Two (2) Medical Physicists for international training to be provided before the installation of the purchased equipment f. Four (4) months local training for four (4) Radiotherapy Technologist on a radiotherapy facility with the same model and capabilities of the equipment purchased machine g. One (1) Hospital Engineer (on-site) to be provided before the acceptance testing of the purchased equipment.		

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			DOSIMETRY EQUIPMENT & ACCESSORIES FOR LINAC QA/QC **Brand new, not reconditioned** **Including its parts & accessories** **1. Farmer Type Ion Chamber** a. Farmer type ionization chamber 0.6 cc with plastic walls, Co-60 build-up cap, waterproof and fully guarded, 10m cable/10m extension cable, calibrated in a Standards Laboratory in terns of absorbed dose to water b. Ionization chamber model must be included in IAEA TRS 277/381/398 protocols c. With accompanying calibration certificate and chamber technical data and user manuals in English d. With ion holder or adapter for absolute measurements in water phantom (must be compatible with the existing phantoms) and existing check source. **2. Plane Parallel Ion Chamber** a. Plane parallel ionization chamber for electron beams, vented sensitive volume of at least 0.35cc, chamber model must be included in IAEA TRS 277/381/398 protocols b. Waterproof and fully guarded, calibrated in a Standards laboratory in terms of absorbed dose in water c. With calibration certificate, chamber technical data and user manuals in English d. With PPC holder or adapter for absolute measurements in water phantom (must be compatible with the existing water phantoms) and existing check source. **3. Ionization Chambers** a. Ion chambers with at least 0.01/0.015 and 0.03 cc approximately cylindrical, water proof and fully guarded. b. Ionization chamber model must be included in IAEA TRS 277/381/398 protocols c. With accompanying calibration certificate and chamber technical data and user manuals in English d. With ion holder or adapter for absolute measurements in water phantom (must be compatible with the existing water phantoms) and existing check source. **4. Therapy Dose Meter (Electrometer)** a. Must be compatible with the delivered ionization chambers, calibrated in a Standards Laboratory		

Approved by:

CHARLOTTE M. CHIONG, MD, PhD
Chairperson

(Signature over Printed Name of President/Gen. Manager)

(Name & Address of Company)

University of the Philippines Manila
The Health Sciences Center
SPECIAL BIDS & AWARDS COMMITTEE (SBAC)

PR No. : PUR15-11-2008 **Opening of Bid:** 18 December 2015
End-User : RADIOLOGY DEPT. PGH
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			b. Power supply 230V stable and with high accuracy in the measurements, with display of accumulated charge and dose, varying bias voltages with V1/V2 ratio equal or greater than 3, dose rate, exposure time, leakage and other important information that ensure validity of the instruments, and with possibility of reverese polarity. c. With calibration certificate, electrometer technical data and user manuals in English. d. Complete with necessary accessories and carrying case **5. Detector Extension Cables** a. One low noise triaxial cable on reel 20m or longer b. One low noise triaxial cable on reel 10m or longer c. Low cable radiation leakage, resistant against radiation damage d. Compatible with the purchased chambers and electrometer **6. Barometer** Digital selectable unit of pressure, 1MB or hPa or 0.5mm Hg minimum scale, calibrated in a Standards Laboratory with calibration certificate, technical data and user manuals in English. **7. Thermometer** Digital, with selectable unit of temperature, 0.5^{0}C minimum scale, calibrated in a Standards Laboratory, with calibration certification, technical data and user manuals in English **8. Hygrometer** Digital, calibrated in SI units in a Standards Laboratory, with calibration certificate, technical data and user manuals in English **9. Desicator Cabinet** Three (3) levels, with humidity and temperature indicators and controls, calibrated to SI units, 220-240 volts **10. Radiotherapy Area Monitor** a. One (1) unit radiation area monitoring system installed inside the treatment room and at the control area b. Flashing red lights alarm with a 180^0 field of view, with aural alarm switch ON/OFF and with battery back-up for at least 24 hours. **11. Two (2) boxes ready pack radiotherapy verification films** **12. Bubble Level: magnetic horizontal, vertical and diagonal bubble level, durable and reliable**		

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			13. Complete set of Isocenter Check / Winston Lutz Testing QA Tooling Kit Includes two (2) boxes of gafchromic radiotherapy films with compatible scanner and isocenter (gantry, couch and collimator) image analysis software **14. Waterproof Diode Detector, P-Type Si Diode for Small Field Dosimetry** a. for relative dosimetry (beam profile: PDD/TMR, symmetry and flatness) b. absolute dosimtery and patient specific QA; c. must be compatible with the existing 3D waterphantom system and software d. includes holder and adaptors needed for the relative measurement in 3D water phantom. **15. 4D Patient Plan Verification Dosimetry System** a. for Stereotactic and Volumetric-Modulated RT patient treatment plan verification b. should include detector array, compatible phantom and software capable of DVH QA analysis **16. Chamber Matrix for Measurement of Radiotherapy Beam Field Profiles** a. Measure field size up to a size of 40cm x 40cm b. Analysis parameters shall include flatness, symmetry, field size, light-radiation field coincidence, penumbra, dose rate and beam center c. Includes gantry holder for easy attachment to the gantry d. Includes dry box for storage **17. Stereotactic 3D QA Phantom (Matched within ±0.1mm tolerance)/ Lucky Phantom** a. includes leveling plate or precision levelling b. includes ionization chamber inserts c. interfaces with SRS frames and frameless system purchased d. compatible with CT and MRI imaging system **FURNITURES, ACCESSORIES and SUPPORTING EQUIPMENT** **Brand new, not reconditioned** **Including its parts and accessories** **1. Air-Conditioning System** a. 1.5T Air-conditioning system: seven (7) units i. Wall mounted ii. Inverter type processor b. 3T Airconditioning System: Two (2) units i. Floor mounted ii. Inverter type compressor		

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			2. Fire Extinguishers: Two (2) units a. Capacity: 6.0kg b. Class of fire A, B and C c. Working temperature: -20°C to 60°C d. Working pressure: 14 bars e. Cylinder material: steel f. Extinguisher valve: brass **3. Foot Stools, Two (2) Step: Two (2) units** a. Stainless steel b. With skid resistant rubber mat c. Heavy duty with 600lbs weigh capacity **4. Themometer and Hygrometer: One (1) unit** a. Digital b. Wall-mounted c. Measurement Range Humidity: 20 to 99% RH d. Measurement Range Temperature -20.0 to 50.0°C e. Accuracy: ±4% RH, ±1.0 °C f. Dimensions: 104mm x 104mm x 13mm g. Weight 50 g **5. Electrical Extension Cord: One (1) unit** a. Heavy duty 8 ft. cord b. Provides protection from power surges, spikes and AC contamination c. 4 surge-protected outlets d. Filters EM/RFI noise up to 43 dB reduction **6. Emergency Lights: Two (2) units** a. Heavy duty b. Automatic c. LED type d. Input: 220V 60Hz e. Battery: 12V f. Fire retardant casing **7. Exhaust Fans: One (1) Unit** a. Nominal Air displacement: 230 cubic meter/ hour b. Switching method: standard **8. Television: One (1) Unit** a. 40" LED LCD b. 2 HDMI, 1 USB c. Component in (Y/Pb/Pr) x1, d. Composite in (A/V) x1 e. Digital audio out (optical) x1		

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			f. PC in (via HDMI) g. RF in (terrestrial/cable input) x1 h. Power: Eco sensor, auto power off i. Video: 1920 x 1080p resolution, wide colour filter **9. Gangchairs: Five (5) Units** a. Six seater b. Stainless steel **10. Office Chairs: Eight (8) Units** Height of chairs to be provided will depend on the fabricated countertops and tables a. Ergonomic b. Adjustable arms c. Pneumatic seat height adjustment d. Built-in lumbar support e. Seat swivel and tilt adjustment with tilt lock f. Dimensions: 36"-39"H x 26"W x 26"D g. Seat Size: 20"W x 18"D h. Back Size: 18"H x 20"W i. Weight rated up to 250 lbs **11. Droplight: One (1) Unit** a. Light head, flex arm b. Metal frame c. Heavy duty **12. Negatoscope (Wall-Mounted) 2 banks: One (1) Unit** a. CCFL bulb b. High brightness c. Flicker free illumination d. Self-locked roller e. Dimensions: 502 x 500 x 25 **13. Stainless Wheel Stretcher: One (1) Unit** a. Manual backrest with 1m thick stainless top b. Fixed height c. 1-1/4" tubular frame d. Rubber bumber on all sides e. Sliding siderails f. 2" to 4" Uratex foam mattress with leatherette cover 24" x 76" g. Approximately dimensions: 26" W x 32" H (w/o mattress) x 76" L h. Fixed IV pole i. With 2 sets patient restraint j. Heavy-duty 8" caster wheels with brakes and ball bearing		

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			k. 1 wheel with directional lock and 3 wheels with total lock l. Diagonal oxygen tank holder **14. Examination Table: Two (2) Units** a. Dimensions (top): 27" W x 74" L b. Height: 31" **15. Intercom: Four (4) Units** a. Allows at least six channels b. Clearly transmits, static free, two-way voice communication c. Intercom shall be installed on the following rooms *i.* LINAC Control Room *ii.* Treatment Planning Room *iii.* Doctor's Room *iv.* Reception **16. Steel Filing Cabinet: Two (2) Units** a. Number of drawers: 4 b. Heavy duty steel construction with aluminum holders c. Thumb latches hold drawers firmly shut d. Steel ball bearing suspension **17. Office Table: One (1) Unit** a. Double-pedestal desk, 1 box drawer and 1 file drawer b. Includes a center drawer c. Steel made d. Dimensions: 29" H x 48" W x 30" D		
			TOTAL APPROVED BUDGET FOR THE CONTRACT (Purchase thru Lot Price)	**Php280,000,000.00**	

TERMS & CONDITIONS:

1. Indicate brand, model and country of origin.
2. Notarized certificate that the product is brand new, not reconditioned including parts and accessories.
3. Project is on turn key basis.
4. All equipment to be delivered and supplied must be durable, reliable and of latest model. All software must be of the latest version. The LINAC machine must be maufactured upon awarding of the project.
5. The winning bidder must provide DOH-FDA approved design of LINAC bunker that is duly evaluated and verified by a board certified ROMP.
6. The winning Bidder shall be responsible for all necessary government permits required for the rennovation and occupancy. (close coordination with the Office and of the Engineering & Technical Services).
7. The winning Bidder shall be responsible for all necessary regulatory licensing for the pre-operational and license to operate for the purchased Linear Accelerator (LINAC) from the Department of Health (DOH). (this includes performance testing, calibration, inspection and other regulatory requirements.
8. The bid evaluation form shall be signed by the Chairperson and Division Chief of the concerned unit or department. There must be a signed certification of demonstration or site visitation by the end-user during its evaluation of the unit.

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TERMS & CONDITIONS:
(continuation)

9. LINAC Machine and Accessories: Delivery and installation for the LINAC Bunker and essential rooms in 180 calendar days commencing on the 3rd working days of notification through confirmed fax that the approved Purchased Order / Supply Contract / Notice to Proceed is already available for pick-up.
10. Includes all technical specifications of all equipment and accessories purchased. This includes brochures, catalogues, operating manuals, system manuals, circuit diagram, anode x-ray rating and cooling charts for kV imaging system and corresponding certificates. All the said documents shall be submitted upon delivery. Includes all documents required by DOH for licensing.
11. Radiation survey results of the constructive LINAC Bunker (primary and secondary walls, doors) should be below the regulatory/international standard radiation limits (7.5 μSv/hr).
12. Warranty
    - At least five (5) years warranty on all parts and service of all equipment and accessories purchased (to start after performance and acceptance testing)
    - Guarantee for availability of after sales service and spare parts for ten (10) years after warranty period.
    - **LINAC Machine**
      95% uptime with a maximum downtime of two (2) working days in one (1) month, with corresponding penalty for delays to be deducted to the next PM contract (Php100,000.00/day - based on approximate equivalent daily income of 45 patients using PhilHealth rate of Php2,200.00) or extension of warranty beyond five (5) years.
13. Warranty period should commence from the date of acceptance by the end-user after installation and acceptance testing, and commisiong of the Treatment Planning System (TPS).
14. Includes certificate of compliance with the performance and safety requirements of the International Atomic Energy Agency and the International Organization for Standardization/International Electronic Commission (ISO/IEC) in compliance with the regulatory requirement (CDRRHR-FDA, DOH AO13-0031, Appendix III.5.a).
15. On-site technical specialist (Physicist) for one (1) month.
16. Certificate from the manufacturer of the LINAC Machine and Dosimetry Equipment mentioning the name of the authorized Philippine dealer.
17. The supplier shall be responsible for the delivery, rigging and installation. They must coordinate to the OETS for electrical power supply needs of all the machines purchased.
18. List of factory trained local engineers with certificate of training from the manufacturer.
19. Free updates of software (clinical/technical) are included in the preventive maintenance of the supplier.
20. Certificate of good track record within five to ten (5-10) years installation in the country both in government and private hospitals.
21. Guarantee letter or certificate from the manufacturer and local distributor to ensure the availability of spare parts and accessories for the next ten (10) years and equipment purchased will not be discontinued for the next five (5) years.
22. Provide separate quotation for maintenance, repair and replacement of parts after expiration of warranty.
23. On-site application training of Radiology Staff and OETS Technical Personnel (two weeks). A notarized certificate must be submitted.
24. Must provide a soft copy (word and excel format) in CD and hard copy of technical specifications.

25. **The Bidder is required to submit single bid for the item. Two or more bids offer is automatically disqualified.**
26. **Compliance with Republic Act No. 9184 on applicable laws.**

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