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NORTHEASTERN VERMONT REGIONAL HOSPITAL

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DELIVERED ELECTRONICALLY

July 13, 2017

Donna Jerry, Senior Health Policy Analyst
Green Mountain Care Board
89 Main Street, Third Floor, City Center
Montpelier, VT 05620

RE: Docket No. GMCB-005-17con, Replacement of Mobile MRI with Fixed MRI Unit and Related Construction/Renovation. Project Cost: $3,051,564

Dear Ms. Jerry:

The following information from Northeastern Vermont Regional Hospital (NVRH) is offered in response to the question(s) included in your March 29, 2017 letter concerning the above-referenced project.

1. **In a table format, specify the actual number of MRI scans in 2014, 2015 and 2016 and projected scans for 2017, 2018, 2019, 2020, and the percent increase/decrease from year to year. Also identify the increase (percent/number) of scans in the projected years due to scans no longer referred to other facilities, increased capability of the fixed unit, and those attributed to the activity of the new surgeon. Provide a more detailed explanation of projected increase in MRI utilization due to the new orthopedic physician.**

   The actual number of MRI scans for 2014-2016 and the number of projected scans for 2017-2020, with percentage changes from year to year, is included in Attachment I. Also included in Attachment I is the increase number/percent broken down by (a) scans no longer referred to other facilities (b) increased capability of fixed unit and (c) those attributed to the activity of the new orthopedic surgeon.

   Having a third orthopedic surgeon is expected to increase MRI scans by 40 scans in 2018 and 5 more in 2019.

   Prior to 2015 St Johnsbury did not have enough orthopedic surgeons to meet the community's need. As a result a significant number of orthopedic patients went to New Hampshire facilities. At those facilities patients were diagnosed and treated for their orthopedic-related problems. MRI scans were part of the diagnostic process.

   In 2015 NVRH hired a third orthopedic surgeon. The migration of patients to NH facilities abated as patients in the St. Johnsbury service area finally had access to timely services in their community. MRI scans previously performed in NH facilities also returned to local community hospital.

   The effect of having adequate number of orthopedic surgeons on the volume of MRI scans has

been significant. In 2014 orthopedic surgeons referred 132 patients for MRI scans. In 2017 we project that number to increase to 360 scans. By 2020 the number of patients referred for MRI scans by an orthopedic surgeon is projected to increase to 405.

2. **Confirm that the relocation of the existing trailer, lighting, lift, utilities, shielding, safety requirements at the interim location are included in the total project cost, identify the costs for each and the line item where each is included. Also confirm that the trailer is located in a secure space that minimizes any radiofrequency and magnetic interference.**

   The estimated project cost includes $100,000 to relocate and put back into service the existing trailer during the construction period. Specifically, under Category 13 Special Construction $75,000 is budgeted for the temp pad and $25,000 for temp bridge/entrance. Final details for the temporary location are still being developed. However, based on initial discussions with the construction manager, we are confident a temporary site can be prepared and the trailered MRI can be put back in service for no more than $100,000.

   The exact relocation of the existing trailer has not yet been determined. Included as Attachment II are the mobile MRI site specification requirements. We will use these and other guidelines to assure that the space is secure and minimizes any radio frequency and magnetic interference.

3. **In Table 1, there are no costs shown for renovation, site work or design/bidding contingency. If these costs are included in other line items please identify the line items and associated costs for each.**

   The project cost does not include an amount for renovation, site work or design/bidding contingency. The project cost does include a construction contingency of $67,784.

4. **Confirm that the cost related to the construction of the new Access Office is included in the total project cost, amount associated and line item(s) where the cost is included.**

   Costs related to the new Access Office (identified as Reg. Office on the plans) are included in the total project costs. This office will be part of the new addition. There are components of the cost for this office in several different categories including; concrete (Category 3), metals (Category 5), HVAC (Category 23) and electrical (Category 26).

5. **HRAP Standard 1.6: Provide more detail on the specific data NVRH currently and will continue to collect and monitor relating health care quality and outcomes relative to the proposed project and how such efforts are aligned with related data collection and monitoring within NVRH and other organizations or the government.**

   Monitoring efforts related to quality and outcomes begin when a MRI is ordered. The order is reviewed by the on-duty Radiologist who decides whether or not the requested scan is consistent with evidence-based utilization standards.

   After a scan is completed it is reviewed to determine if the quality of the scan is acceptable or

weather the quality could be improved by a repeat scan. Unfortunately, due to the age of the Symphony equipment, even though the image quality is sub-optimal, a repeat scan would not produce a better outcome. In fact, the Radiologists stated that artifacts appear in most every image so there is no need to closely monitor quality of current scans because every scan could be improved with better equipment. Unless the artifact is a result of patient movement, scans are not repeated at NVRH. However, some patients are referred to another facility for a repeat scan.

Although there are no external requirements to monitor and report outcomes on image quality, NVRH will implement a system to closely monitor quality of every image, once the new MRI is in place. Every low-quality image will be reviewed to find the root cause of the problem. Once the problem is identified steps to correct the issue will begin immediately.

6. **If applicable, explain any new imaging capabilities the fixed unit will have relative to the existing mobile unit.**

The only new imaging capability is the ability to image smaller anatomy. This doesn't necessarily open the door to "new studies", but it may open the door to performing the same study for different diagnoses. For example, whereas our current system tends to struggle with smaller anatomy of the wrist or foot, the higher resolution of the Aera should give referring physicians more confidence in our ability to effectively scan smaller structures.

We have not assumed any change in volume will occur as a result of the Aera's ability to perform the same studies for different diagnosis.

7. **Identify expected opportunities and associated savings with each within the diagnostic imaging department and elsewhere to realize $124,146 in net operating margin.**

The operating margin to be made up from the project, $124,146, represents approximately .2% of NVRH's total operating expenses. During fiscal year 2018 NVRH will begin a "lean" or similar approach to reviewing opportunities to improve efficiencies and eliminate costs throughout the organization. We are confident additional savings of $124,146 will be achieved by efficiency improvement and related cost reductions.

8. **In a table format, identify the five highest imaging volumes and average charge for each with the mobile and the fixed unit.**

MRI Description	Volume October 1, 2016 – April 30, 2017	Average Charge Mobile	Average Charge Fixed
MRI lumbar spine w/o dye	125	$3,542	$3,542
MRI brain stem w/o dye	108	$3,535	$3,535
MRI brain stem w/ and w/o dye	67	$4,136	$4,136
MRI lower extremity w/o dye	71	$3,549	$3,549
MRI upper extremity w/o dye	65	$3,516	$3,516

As the table above indicates, we do not plan to increase charges because of the project.

9. **Confirm whether a service contract in the post warranty years is included in the total cost in each of the projected years.**

A service contract is included in the total cost in each of the projected years. The cost of the service contract is $135,460 per year.

Please contact either Bob Hersey or me with any questions concerning this response to your March 29, 2017 letter.

Sincerely.

Paul R. Bengtson, CEO

CC: Bob Hersey

NVRH
CON Application - MRI Replacement
Docket No. GMCB-009-15con
MRI Volume Actual FY 2014 to Projected FY 2020

Number of Scans	Actual FY 2014	Actual FY 2015	Actual FY 2016	Projected FY 2017	Projected FY 2018	Projected FY 2019	Projected FY 2020
Inpatient MRI Scans	64	83	101	100	100	100	100
Outpatient MRI Scans	969	1,142	1,134	1,225	1,275	1,300	1,300
Total MRI Scans	1,033	1,225	1,235	1,325	1,375	1,400	1,400
		FY14-FY15	FY15-FY16	FY16-FY17	FY17-FY18	FY18-FY19	FY19-FY20
% Change in Number of Scans		18.6%	0.8%	7.3%	3.8%	1.8%	0.0%

Reason For Volume Increases:	Projected FY 2018	Projected FY 2019	Projected FY 2020
Increase Due to:			
-Patients no Longer Referred Elsewhere	10	20	0
-Increased capability of the fixed unit	0	0	0
-New Orthopedic Surgeon	40	5	0
Total Increase (*)	50	25	0

(*) The MRI application incorrectly stated that the 75 increase in scans would result only from having the new scanner.

ATTACHMENT I

On site preparations for the use of a Mobile MRI

General

The mobile unit does require specific site preparations, provided by the user at each desired location. The following information is necessary for the placement of the mobile system at a location. Included in this Planning Guide is structural and electrical information to assist the customer with design requirements. The informations herein are provided to suggest location of the mobile unit and are not for construction purposes.

Construction drawings are the responsibility of the customer and shall comply with all governing codes and regulations, as well as the trailer manufacturer's siting requirements.

Topographic specification

NOTE

When parked, the MRI unit uses two front hydraulic jacks and two fixed height stands in the rear, for stabilizing purposes or four fixed height stands if a full size pad is available.

The axles must be leveled if the trailer is in its operating position.

If any kind of leveling material is used underneath the trailer supports, the same kind and thickness of this material has to be used underneath the wheels.

Access consideration

Access consideration must be given to the tractor, the patient lift, the stairs and the belly compartments, for patient entry, trailer service and helium dewar access to fill the magnet.

Service access

- An access way of at least **1 meter** in width must be provided along the closed side of the trailer.
- An access way of at least **3,5 meters** in width must be provided along the entrance side of the trailer.
- A clear paved space of at least **2 meters** must be provided along the rear of the trailer.
- A clear paved space of at least **3 meters** must be provided along the front of the trailer.
- A clear ceiling height of **5,2 meter** is recommended for service access, if the trailer is to be placed inside a building or under an overhead walkway.

ATTACHMENT II

Example of the 5- Gauss line (0.5mT) on top of a trailer

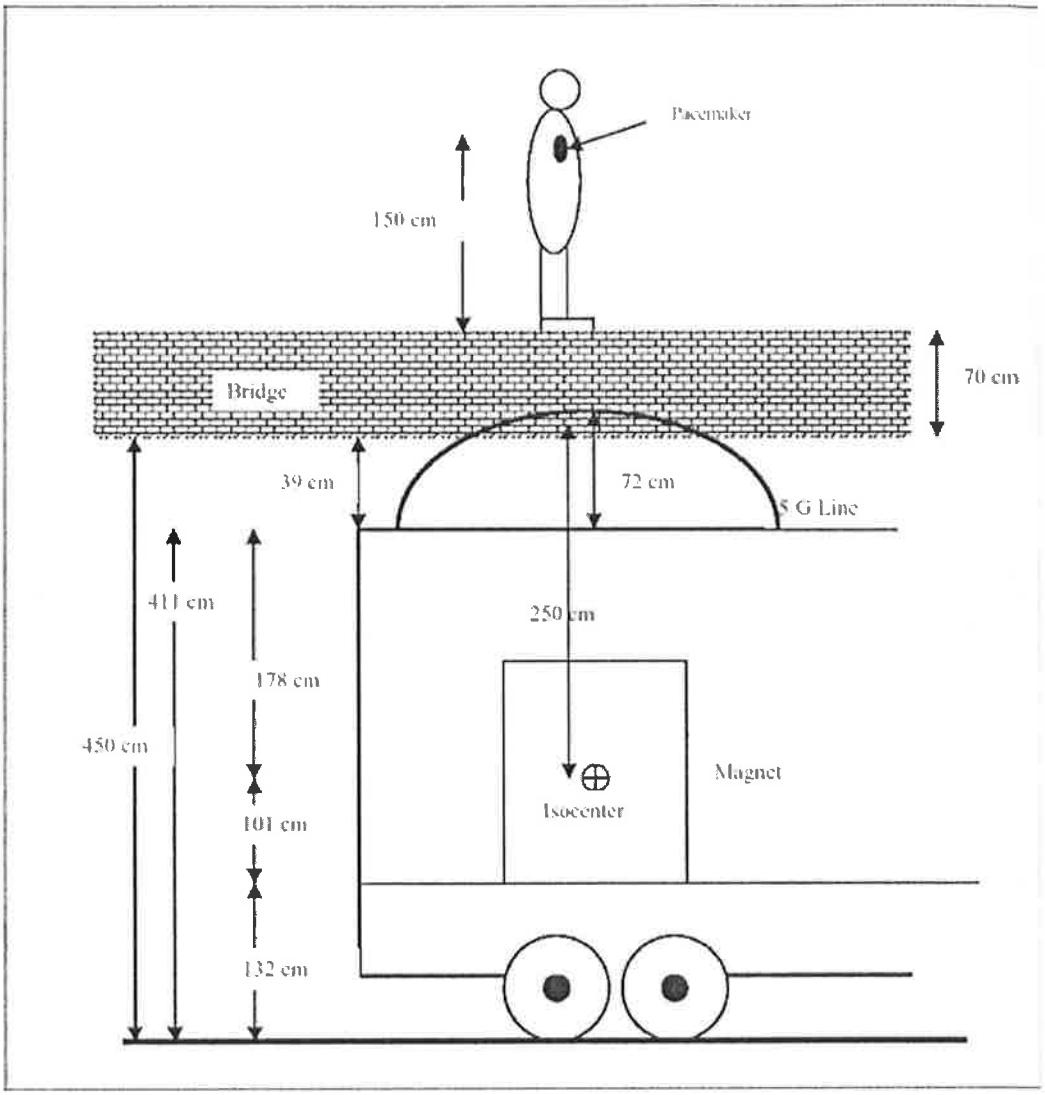

Fig. 175: 5 Gauss line example

Support pad

Recommended support pad size

For operational set-up an ordinary flat and horizontal solidly paved parking space is needed. For correct horizontal positioning of the unit the horizontal segment of the parking space (support pad) should be 10 x 3 meters. A total paved area of at least 6 x 20 meters is recommended for tractor access and patient handling.

Support pad strength

The support pad strength varies due to local codes and soil conditions. The pad should be able to carry the following weights:

Position	Weight
King-Pin (front)	9 t
Bogey (rear)	19 t
total trailer weight	app. 28 t

Support pad levelness and flatness

NOTE	**The support pad must be level and flat to insure proper operation of the mobile MRI unit.**

On-site environmental requirements

Water requirements

The trailer has a humidification system which contains a water storage tank, located typically in the front side area (technical compartment). This tank must always contain water to ensure a specific humidity level. To fill the on board water tank a hose connection should be provided at the outside of the building in the close vicinity where the trailer will be parked.

Communication service

Provide communication access at the outside of the building in the close vicinity where the trailer will be parked. The trailer unit should be supplied with two double UTP connectors for communication.

Power requirements

The unit is standard executed with a diesel generator for the power supply of the water chiller, cryo-compressor, air-conditioning and ventilation during transport.

For operational use at the hospital site a 480 Volt / 125 Amp. CEE-form female connector is required. The four wire power cable (3P/G; Neutral is not required) should, for safety reasons, be connected to a mains switch. The external power supply and grounding should comply with local codes and regulations, this is not the responsibility of the Mobile manufacturer.

NOTE	**All specifications apply to measurements at the receptacle pins. Line voltage drops from the facility mains to the receptacle must be included in all power calculations; power range to be in +/- 5 % of specified Voltage.**

Site checklist

➪ This checklist is provided to help you to prepare your site for the mobile unit.

Verification Under Oath

STATE OF VERMONT
GREEN MOUNTAIN CARE BOARD

In re: Northeastern Vermont Regional Hospital)
Certificate of Need Application)
Replacement of Mobile MRI with a Fixed MRI Unit) Docket No. GMCB-009-17con

Paul R. Bengtson, being duly sworn, states on oath as follows:

1. My name is Paul R. Bengtson. I am the Chief Executive Officer of Northeastern Vermont Regional Hospital ("NVRH.") I have reviewed NVRH's Responses to March 29, 2017 Questions from Donna Jerry, Senior Policy Analyst (the "March 29th Response.")

2. Based on my personal knowledge and after diligent inquiry, I attest that the information contained in the March 29th Response is true, accurate and complete, does not contain any untrue statement of a material fact, and does not omit to state a material fact.

3. My personal knowledge of the truth, accuracy and completeness of the information contained in the March 29th Response is based upon either my actual knowledge of the subject information or upon information reasonably believed by me to be true and reliable and provided to me by the individuals identified below in paragraph 4. Each of these individuals has also certified that the information they have provided is true, accurate and complete, does not contain any untrue statement of a material fact and does not omit to state a material fact.

4. The following individual(s) have provided information or documents to me in connection with March 29th Response and each individual has certified, based either upon his or her actual knowledge of the subject information or, where specifically identified in such certification, based on information reasonably believed by the individual to be reliable, that the information or documents provided are true, accurate and complete, do not contain any untrue statement of a material fact, and do not omit to state a material fact:

   Robert N. Hersey, Chief Financial Officer

5. In the event that the information contained in the March 29th Response becomes untrue, inaccurate or incomplete in any material respect, I acknowledge my obligation to notify the Green Mountain Care Board and to supplement the March 29th Response as soon as I know, or reasonably should know, that the information or document has become untrue, inaccurate or incomplete in any material respect.

Paul R. Bengtson, CEO

On July 13, 2017, Paul R. Bengtson appeared before me and swore to the truth, accuracy and completeness of the foregoing.

Notary public

My commission expires 2/10/2019