PHYSICS QUESTIONNAIRE FORM

Institution Name: ___________________________________________     Date: ______________

Contact Information (name, address, phone, fax, email):

    Physicist:

    Radiation Oncologist:

    Dosimetrist (if applicable):

    Study Coordinator (if applicable):
**TABLE 1. DELIVERY RESOURCES**

List the treatment units you use. If units differ in the type of MLC or IGRT capabilities then list them separately. List all units that will be used on the protocol (add more lines to the Table if needed).

<table>
<thead>
<tr>
<th>Unit #</th>
<th>Local unit identifier (name)</th>
<th>Vendor</th>
<th>Model</th>
<th>Photon energies used for IMRT</th>
<th>Number of additional identical units</th>
<th>MLC or other beam modulator (footnote 1)</th>
<th>Used for (IMRT, IGRT, both, or neither):</th>
<th>IMRT Method (see footnote 2)</th>
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Footnotes (enter a letter from the following list):

1. a. Varian 80 leaf
d. Elekta 80 leaf Beam Modulator
g. Siemens 58 leaf
j. Radionics
m. physical compensators
o. Other: ____________________________________________________________

2. p. SMLC
s. Serial tomotherapy
q. DMLC
t. Other: __________________________________________________________

r. Helical tomotherapy
# TABLE 2. PLANNING RESOURCES

<table>
<thead>
<tr>
<th>ID #</th>
<th>Vendor</th>
<th>Software Version</th>
<th>Calculation Algorithm (footnote 1)</th>
<th>Treatment units commissioned for this system (enter from Table 1)</th>
<th>Is system commissioned for heterogeneity corrections? (Enter YES or NO and see footnote 2)</th>
<th>Does the system transfer beams to a phantom for QA? (Enter YES or NO. If no, explain the technique you do use for IMRT QA in the space below)</th>
</tr>
</thead>
</table>

Footnotes (enter a letter from the following list):

1. a. BrainLAB pencil beam 
b. Corvus pencil beam 
c. Helax pencil beam 
d. Helax collapsed cone 
e. Cadplan pencil beam 
f. Eclipse pencil beam 
g. Eclipse AAA 
h. PLUNC pencil beam 
i. MSKCC pencil beam 
j. Pinnacle fast convolve 
k. Pinnacle collapsed cone or adaptive convolution superposition 
l. XiO modified Clarkson or convolution 
m. XiO superposition or fast superposition 
n. Tomotherapy convolution superposition 
o. Other: _______________________________________________________________

2. If you answered NO for the question about the system being commissioned for heterogeneity corrections, please explain? Identify each system using the # in the list:____________________________________________________________________
TABLE 3. IGRT RESOURCES

IGRT is defined here to include only procedures where an x-ray imaging technique is used in combination with some form of computer-assisted manual or automatic registration with the image information obtained during the patient’s planning CT procedure. The standard use of MV EPID images as a visual comparison to DRRs does not fall under this definition. Also, the use of silver halide film radiographs alone is not accepted under this definition of IGRT.

<table>
<thead>
<tr>
<th>Unit ID # (from Table 1)</th>
<th>Description of IGRT system (footnote 1)</th>
<th>How is image registration accomplished (footnote 2)?</th>
<th>How is the success of image registration verified (footnote 3)?</th>
<th>Do any of these units have robotic couches capable of correcting angular deviations (YES or NO)</th>
<th>How often do you check the position of the imaging system isocenter (footnote 4)?</th>
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Footnotes (enter a letter from the following list):
1. a. kV cone-beam (2D or 3D match)  
   d. MV cone beam  
g. Other: _______________________________________________________________

2. a. automatic registration  
c. Other: _______________________________________________________________

3. a. split screen  
d. Other: _______________________________________________________________

4. a. daily  
d. yearly  
f. Other: _______________________________________________________________

   b. manual click, drag, and rotate
   
   b. spy glass
   
   c. color fade

   b. weekly
   
   e. not done

   c. monthly

   e. not done
QUESTIONNAIRE

1. How do you verify field positioning relative to the patient’s anatomy (check all that apply)?
   ________ Port Film
   ________ Orthogonal Port Films
   ________ Cone beam CT
   ________ MVCT
   ________ Other: __________________________________________

2. Describe the method(s) used to conduct a check of the dose and monitor unit calculations generated by the 3DRTP system.
   ___________________________________________________________________

3. What record & verify system is used to monitor 3DCRT treatments (Manufacturer & Model):
   ___________________________________________________________________

4. How do you verify that the treatment unit delivers the planned dose for individual patients?
   A. Absolute Dose Point Measurement
      ________ Ion Chamber (Chamber size: ______________________)
      ________ Diode
      ________ TLD
      ________ Radiographic Film
      ________ Radiochromic Film
      ________ Other: __________________________________________

   B. Relative Dose
      ________ Isodose distribution with Radiographic Film
      ________ Isodose distribution with Radiochromic Film
      ________ Isodose distribution with Gel Dosimetry
      ________ Other (specify # of axial, sagittal, and coronal planes): ____________________________
C. Describe the type of phantom you use for QA:
   _______ Anthropomorphic phantom (Vendor: _____________________________)
   _______ Geometric phantom
   Material: ___________________________
   Shape: ___________________________
   Size: ___________________________

D. What agreement between planned and measured doses for individual patients is considered acceptable at your institution?
   Absolute dose in target volume (high dose region): ________________
   Absolute dose in critical normal tissue region: ________________
   Absolute dose in low dose region: ___________________________
   Relative dose in high dose gradient region: _______________________
   Relative dose in low dose gradient region:
     in high dose region (target): ___________________________
     in low dose region: ___________________________

E. Are your monitor unit calculations checked by an independent program?
   _______ No
   _______ Yes (Vendor: _____________________________)

5. In how many patients have you used IGRT for cervical cancer in the past 12 months? ___________________________

6. With what frequency do you use IGRT?
   _______ Each fraction
   _______ First five fractions and once weekly thereafter
   _______ Other: ___________________________

7. Do you perform a second IGRT study after the patient’s position is adjusted?
   _______ Yes
   _______ No

8. What tolerance levels (in mm) are used for x, y, and z adjustments of the patient’s position? ___________________________
9. What are your rotational tolerances before repositioning the patient?

10. If the system has a robotic couch, what are your tolerance levels for the rotational corrections?

11. Who approves the changes at the time of treatment?
   - Therapist
   - Radiation Oncologist
   - Physicist
   - Other:

12. Is your treatment planning system (TPS) capable of using custom CT number to electron density tables or does your institution use the TPS vendor supplied numbers?
   - Custom CT number to electron density tables
   - TPS vendor supplied

13. If custom tables are used, how were the numbers generated?
   - Using measured data from CT
   - Other: