Authorization and Inspection of Linear Accelerators Used in Radiotherapy

Day 2, Exercise 3 – Application Checklist

1	**Facility Name:**
2	**Facility Address:**
3	**Correspondence Address/Phone Number:**
4	**Authorized Personnel that may correspond on behalf of this license (attach management delegation):**
5	**Proposed Radiation Safety Officer and Credentials:**
6	**Proposed Medical Physicist and Credentials:**
7	**Proposed Responsible Physician and Credentials:**

8	**Accelerator Description:** **Make:** **Model:** **Serial Number:** **Manufacture Year:** **Remanufactured Year:** **On Board Imaging CT: Yes ☐ No ☐**	**9.**	**Maximum Accelerator Energy Data:** **Electrons** _____ **MeV** **Photons** _____ **MV** **FFF Photons** _____ **MV** **Other Particles** _____ **Other Particle Energy** _____ **MeV**

10 **Describe use of the medical accelerator and applicable radiation safety procedures.**

- ☐ **Shielding Evaluation and Acceptance Testing only**
- ☐ **IORT**
- ☐ **IMRT**
- ☐ **Arc Therapy**
- ☐ **Stereotactic (SRS, SRT, SBRT)**
- ☐ **Other (explain)** _____

11 **Facility Diagram:** Attach a site layout drawing depicting location of each accelerator vault, room number, and operating consoles. At a minimum indicate the following on the diagram:

- Function and type of occupancy of all areas above, below and adjacent to the accelerator vault.
- Accelerator location and gantry positions
- Location of: Scram buttons, independent radiation monitors, viewing and communication system components

Describe: the independent radiation monitor (make, model and any maintenance testing); beam stop system, identify Recorder/Verifier (Make model and functions involved); any door interlocks (location and if "failsafe"/can be opened from inside), viewing and communication system to the patient

12 **Shielding Evaluation:** Using IAEA TecDoc 47 Provide shielding evaluation of each bunker demonstrating protection of public and workers. If the accelerator is capable of energies of >10 MeV neutron shielding must be addressed.

13 **Shielding Verification:** Submit actual survey result that validate adequacy of the shielding. Include survey meter make model and calibration certificate and name of individual completing the survey. If the accelerator is capable of energies of >10 MeV survey measurements must include neutron fluence.

14 Quality Assurance Program and Procedures:

Identify:

- Method for independent biannual check of output
- Equipment available for QA measurements of the Linear Accelerator Beam

Describe:

- Procedure for independent biannual check of output
- Annual calibration procedures
- If a daily warm up is done every morning by the therapists/physicist
- Daily and Monthly checks, including personnel responsibilities for completing the check and review of results
- Include tolerance for each check and corrective actions for failed checks

15 Radiation Safety Program: Describe the following:

- Disposal of the accelerator
- Prescription Control procedures: what type of patient log book/daily schedule will be kept, how are deviations from the prescription identified, reported and reviewed, How often patient charts are reviewed by a physicist to verify calculations of dose totals, how often the patients are seen by the responsible physician, and annual program review
- Describe occupational monitoring, including any surveys or area monitoring
- Initial and recurrent training for operators, include agenda of topics
- Emergency Procedures and commit to posting a copy of your emergency procedures near the accelerator control panel. Emergency procedures should not be covered or obscured by non-emergency related postings.