

STATE OF COLORADO

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Dedicated to protecting and improving the health and environment of the people of Colorado

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Colorado Department
of Public Health
and Environment

INTERPRETIVE GUIDANCE

Hazardous Materials and Waste Management Division

Radiation Control Program, X-Ray Certification Unit

SUBJECT: Guidance on Registered Medical Physicist Category

Basis and Purpose:

Recent rule changes have created a separate category for those individuals who are certified by certain professional boards in medical physics. This new category is called the Registered Medical Physicist (RMP) and is separated into Diagnostic and Therapeutic classifications. A person who meets the requirements to be an RMP is a scientist trained in physics, including radiological physics, and also in clinical, basic medical, and radiobiological sciences. Because of the training in analytical processes and scientific principles, the medical physicist plays a principal role in the review of image quality and radiation exposure levels, the development of systems and policies, the review of consistency between plans and their execution, and finally, problem solving. The first responsibility of the medical physicist is to the patient, to ensure that the programs are in place to facilitate the production of quality diagnostic images consistent with the available technology and which optimize safety for the patient (Diagnostic) or the best possible treatment given the state of technology and the skills of the radiation oncology department (Therapeutic).

Scope:

The following guidance will address the requirements for an RMP, the forms used for application and the changes in the regulations that require RMP involvement. The relationship between the RMP, QE and QI will also be discussed.

Regulations:

Certain activities listed in the regulations must be performed by an RMP (See Attachment 1). Some of these activities include the design of facility shielding, performing radiation surveys, reviewing quality assurance or performing certification evaluations (i.e. inspections) on computed tomography, mammography or fluoroscopic systems at healing arts facilities.

Part 2, Section 2.4.3.2 states, "Each individual who offers the service of calibration and compliance surveys for a radiation therapy unit shall be registered with the Department as a registered medical physicist who meets the criteria in Appendix 2B and has current Department approval as a registered qualified expert for radiation therapy, designated QE(T)."

Appendix 2B lists the training and experience requirements for RMP's. To be approved as an RMP, a person must be certified by one of the organizations listed in 2B.1.1 and registered as a Qualified Expert per 2B.1.2. To perform medical physics duties for radiography other than radiotherapy, the RMP must have approval as a QE(r) per Section 2B.1.2.1. To perform Radiation Therapy Medical Physics duties under Part 24, a person must have approval as a QE(t) per Section 2B.1.2.2.

Registration:

RMP's who wish to only perform shielding designs, surveys or quality assurance review must register as a QE with Form R-68. If an RMP also wishes to perform certification evaluations on radiation machines or facilities, they must register as a

Qualified Inspector (QI) using Form R-53. This allows an RMP to purchase certification labels and affix them to x-ray machines. **RMP's who wish to perform certification evaluations must register as both a QI and QE with Forms R-53 and R-68.**

QE(t):

To perform shielding designs, protection surveys or other radiation therapy medical physicist duties in Part 24, the radiation therapy RMP must register as a QE(t). QE(t)'s can perform shielding designs on all facility types. Note that QE(t)'s are the only Qualified Expert that can do shielding designs for facilities using linear accelerators.

If the radiation therapy RMP also wishes to perform therapy machine evaluations per Part 24 regulations and affix a certification label to the therapy machine, the RMP must also register with Form R-53. Other radiation therapy duties required in Part 24 do not require a QI registration.

QE(r):

To perform shielding designs, surveys or review of quality assurance at diagnostic healing arts facilities, the RMP must register as a QE(r). QE(r)'s can also perform shielding designs on non-healing arts facilities except those operating linear accelerators.

QE(s):

QE(s)'s are limited to performing shielding designs on non-healing arts facilities not using linear accelerators.

This Guidance may be revoked pending any regulation changes in Parts 2 or 6 by this Department. Any questions or comments regarding this document should be addressed to the X-Ray Certification Unit at 303-692-3427, by fax at 303-759-5355 or by sending an email to Brian.Vamvakias@state.co.us.

Authorized by: _____



Brian Vamvakias, MS

X-ray Certification Unit, Unit Leader

Date: November 1, 2010

Attachment 1

Registration Regulations:

- 2.4.3 Registration as a QE
- 2.4.3.2 Each individual who offers the service of calibration and compliance surveys for a radiation therapy unit shall be registered with the Department as a registered medical physicist
- 2.4.4.3 Department approval as a registered medical physicist consistent with Appendix 2B is considered also to be Department approval as a qualified inspector for any facility and/or machine.
- 2A.1.1 RMP's meet the requirement to be an RSO for healing arts facilities.
- App 2B Registered Medical Physicist Adequate Radiation Safety Training and Experience

Diagnostic System Regulations:

- 6.3.5.2 Hard copy systems with transmission viewing – RMP involvement in QA/QC program **optional**
- 6.3.5.3 Sensitometric quality control program development - RMP involvement is **optional**
- 6.3.5.7 Monitors used for primary image interpretation – RMP involvement in QA/QC is **mandatory** for all healing art facilities except for Dental and Veterinarian.
- 6.3.5.8 Computed Radiography cassettes – RMP involvement in and annual review of the QA/QC program is **mandatory** for all healing art facilities using CR readers except for Dental and Veterinarian.
- 6.5.2.8(8) Fluoroscopic Air Kerma Rate and air kerma calibration shall be verified annually by a RMP.
- 6.5.5.1 Fluoroscopic QA/QC procedures – RMP involvement is **mandatory**.
- 6.5.5.2 Fluoroscopic system evaluation – RMP involvement is **mandatory**.
- 6.6.5 QA/QC for general-use diagnostic radiographic systems – RMP involvement is **optional**.
- 6.7.5.2 Dental Volumetric Systems (Cone Beam) – RMP involvement in annual certification evaluation is **mandatory**.
- 6.9.3.4 CT with gantry - alternative measurement procedures for slice position is responsibility of the RMP
- 6.9.4.1 CT radiation survey shall be made by an RMP.
- 6.9.4.2(1) The radiation output of the CT x-ray system shall be measured by, or under the personal supervision of, a registered medical physicist.
- 6.9.4.2(2) CT dosimetry shall be evaluated by a registered medical physicist in accordance with protocols published by a nationally recognized organization.
- 6.9.4.3(1) CT Spot check procedures shall be developed by an RMP
- 6.9.5 CT QA/QC procedures must be reviewed by RMP annually.
- App. 6A QE or RMP can develop shielding requirements.

Therapeutic System Regulations:

- 24.3.4 Training for a Radiation Therapy RMP.
- 24.3.6 Written safety procedures and rules shall be developed by RMP.
- 24.3.7 Emergency procedures must specify how the Radiation Therapy RMP is to be contacted and what steps are to be taken until he/she is contacted.
- 24.3.10(4) The RMP must approve written procedures for bringing a therapy machine back into use after machine service, repair or upgrade.
- 24.4.1.1 The radiation protection survey must be done by a RMP.
- 24.4.3.3 The RMP must perform or personally supervise the (inter)comparison calibration of the dosimetry system.
- 24.5 RMP support – the items listed must be done by the RMP.
- 24.5.2 The RMP must be available for problems or emergencies per the procedures required by 24.3.7.
- 24.7.16 Full calibration of a therapeutic machine must be done by or under the personal supervision of an RMP.
- 24.7.17 The quality assurance check procedures shall be established by the RMP.
- 24.8.19 Full calibration of a therapeutic machine must be done by or under the personal supervision of an RMP.
- 24.8.20 The quality assurance check procedures shall be established by the RMP.
- 24.12.7 RMP support requirements for electronic brachytherapy.
- 24.12.9 RMP must be present during human patient treatment.
- 24.12.10 Electronic brachytherapy calibration shall be done by or under the direct supervision of an RMP.
- 24.12.11 Quality Assurance Check procedures for Electronic Brachytherapy Devices must be established by the RMP.
- 24.12.12 RMP will do acceptance testing of Electronic Brachytherapy computer systems.