RADIATION EXPOSURE CONTROL DURING SPECIAL X-RAY PROCEDURES

PURPOSE

This procedure prescribes requirements for radiation protection during medical procedures involving intensive x-ray imaging when the practitioner and members of the support staff must be in close proximity to the primary x-ray beam or the patient.

POLICY

Individuals who perform special x-ray procedures involving potentially high radiation exposures shall be given radiation safety training specific to such uses.

Individuals involved in special x-ray procedures shall be provided with personal dosimeters for monitoring cumulative radiation doses unless it can be shown that they are unlikely to receive 10% of the occupational dose limit. Individuals who are issued dosimeters shall wear them in the manner prescribed by the RSO at all times that they are working with or near any radiation source.

DEFINITION

Special x-ray procedure: In this procedure, "special x-ray procedure" is used to identify any x-ray imaging procedure utilizing fluoroscopy, cinefluorography or serial radiography with potentially high occupational exposures, such as angiography, cardiac catheterization, percutaneous transluminal angioplasties, pacemaker implants, etc.

PROCEDURES

The person responsible for performing any special x-ray procedure shall inform the RSO of the nature of the procedure, the location where it is performed and the identities of personnel involved. An estimate of the potential doses from the procedure will be made by the University's Radiation Safety Officer (RSO), who will provide any required monitoring devices. In consultation with the RSO, the responsible person shall prepare detailed operating procedures for assuring against individual exposures that exceed regulatory limits and for maintaining all radiation exposures as low as reasonably achievable (ALARA). These procedures shall specify any required special protective equipment or clothing, e.g. lead-impregnated aprons or gloves, and any special monitoring requirements or devices, and shall be included in the instruction provided to all involved personnel.

The RSO shall review the individual monitoring results on a regular basis and inform the responsible person whenever any individual is in jeopardy of exceeding an annual dose limit. The responsible person shall then make whatever adjustments are necessary in operating procedures or duty assignments to assure that no individual will exceed the limit.

The RSO shall review the operating procedures, personnel training and exposure monitoring for special x-ray procedures at least annually, or more frequently if revisions are proposed, and shall provide documentation of the review to the Radiation Safety Committee.

REFERENCES

National Council on Radiation Protection and Measurements:

Medical X-rays, Electron Beam and Gamma-ray Protection for Energies up to 50 MeV, NCRP Report No. 102, 1989.

Radiation Protection for Medical and Allied Health Personnel, NCRP Report No. 105, 1989.

Implementation of the Principle of As Low As Reasonably Achievable (ALARA) for Medical and Dental Personnel, NCRP Report No. 107, 1990.

University of Utah, "Radiation Safety in Diagnostic Radiology," RPR 23, Radiological Health Department.

Utah Division of Radiation Control, *Utah Radiation Control Rules,* "Use of X-rays in the Healing Arts", R313-28.