7.4 Exposure Limits for Minors

The annual occupational dose limits for minors are 10 percent of the annual occupational limits specified for adult workers in Section 7.1 of this manual.

7.5 When Dosimetry Is Required

The IEMA requires dosimetry for the following:

1. Adults likely to receive in one year a dose in excess of 10 percent of the occupational exposure limits from sources external to the body (Section 7.1).
2. Minors and declared pregnant women likely to receive in one year a dose in excess of 10 percent of the applicable limits from sources external to the body (Section 7.3 or Section 7.4).
3. Individuals entering a high or very high radiation area.

DRS assigns dosimetry when certain quantities and nuclides are used. Specifically, the use of >10 mCi of P-32 requires the user to wear both an extremity (commonly referred to as a “ring”) and a whole-body dosimeter. At usage levels ≤10 mCi of P-32, dose assessments will be performed to evaluate the need for dosimetry.

DRS evaluates the use of dosimetry with other radionuclides and quantities on a case-by-case basis.

7.6 Bioassays

Bioassays, analyses, or evaluations of materials excreted or removed from the body are required to determine types, concentrations, quantities, or locations of personal uptake. A baseline (before first use) bioassay and another within 24 to 72 hours following each use of the quantities specified is required. Thyroid bioassays are performed using a hand-held scintillation probe and survey meter. Tritium bioassays are performed by condensing water from exhaled air. DRS personnel perform bioassays at the following location if other arrangements are not made:

Environmental Health and Safety Building
101 South Gregory Street, Urbana

Users of unbound radioactive iodine (typically I-125 or I-131) in quantities of ≥1 mCi on a bench top or in quantities ≥10 mCi in a fume hood require thyroid bioassays. These bioassays are performed on a walk-in basis during business hours unless previous arrangements are made. Tritium bioassays are required when a person uses >100 mCi of H-3 without using a