



DOELAP Advisory: Configuration of Dosimeters

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PURPOSE Dosimeters that are submitted for DOE Laboratory Accreditation Program (DOELAP) Accreditation should have the exact configuration as those used to monitor site personnel.

BACKGROUND The use of a dosimeter configuration different from that submitted to DOELAP for accreditation was recently self-identified at Idaho National Laboratory (reference: ORPS Report EM-ID--CWF-INLPROGM-2005-0005).

The tested dosimeter included an identification credential inserted in the front of the dosimeter holder. When the identification card material was changed, the site's testing, which utilized ^{137}Cs , failed to recognize that the dosimeter under-responded at low energies. The composition of the old identification credential that was being submitted with the dosimeter for DOELAP testing was now different from the one that was actually used by monitored site personnel. The compositional difference caused the dosimeters to under-respond by approximately 40 percent to extremely low-energy photons (specifically, the M30 category, average energy about 20 keV). Dosimeter response above 35 keV was unaffected.

IMPLICATIONS Any differences, no matter how insignificant they may appear, have the potential to alter the response of the dosimeter. Dosimeters used to monitor workers for compliance with 10 CFR 835 must be exactly as submitted to DOELAP for accreditation. Use of dosimeters in a configuration other than that tested by DOELAP may affect a site's compliance with 10 CFR 835 unless a determination of technical equivalency has been submitted and approved by DOELAP.

ACTIONS Dosimetry supervisors should evaluate their dosimeters to verify that the ones that are used to monitor site personnel are exactly as submitted to DOELAP and as described on their Conditions of Accreditation. Any deviations should

be immediately evaluated for potential impacts to recorded doses. Dosimeter configurations identified as deviating from that submitted for accreditation should immediately be either retested or evaluated for technical equivalency.

Questions concerning this issue should be directed to Scott Schwahn, DOELAP Performance Evaluation Program Administrator, by telephone at (208) 526-0324 or by e-mail at schwahso@id.doe.gov.

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