| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| --- | --- | --- | --- |
| **YES** | **NO** | **N/A** |
| Performance Testing |  |  |  |  |  |
| 1. The radiation categories selected in the application for accreditation shall be representative of the radiation types and energies encountered where the dosimeter will be used to demonstrate compliance with 10 CFR 835.402.
 | 3.2(c) |  |  |  |  |
| 1. Processing of performance testing dosimeters shall be defined and consistent with processing of personnel dosimeters. The same dosimeter model, type, and sensitive element used to assess occupational exposures shall also be used during performance testing.
 | 3.2(d) |  |  |  |  |
| 1. The applicant shall review the performance testing data for potential improvements in the dosimetry measurement system.
 | 3.2(e) |  |  |  |  |
| 1. Assessors evaluate the performance testing results. Document any failures in the assessment report. Evaluate the applicant’s corrective actions and preparation for retesting in accordance with 3.2.1 and 3.2.2.
 | 3.2(b)3.2.1(b)3.2.2(b) |  |  |  |  |

| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| --- | --- | --- | --- |
| **YES** | **NO** | **N/A** |
| Quality Assurance Program |  |  |  |  |  |
| 1. The program shall have a documented QAP describing the internal management structure, system of procedures, and practices to ensure dosimetry results are accurate, repeatable, verifiable, and properly recorded.
 | 4.1(a) |  |  |  |  |
| 1. The program’s QAP documentation shall include a statement of quality policy and quality objectives.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include documented processes, procedures, and instructions.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include a description of the methods for effective planning, operation, and control of processes.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include records required to demonstrate compliance with the QAP.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include dosimetry specifications and technical basis documentation.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include acceptance criteria for dosimeter materials and holders.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include training objectives and processes for maintaining proficiency.
 | 4.1(b) |  |  |  |  |
| 1. The program’s QAP documentation shall include practices for handling and resolving contested dosimetry data and test reports.
 | 4.1(b) |  |  |  |  |

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| --- | --- | --- | --- |
| **Yes** | **No** | **N/A** |
| **Continuation of Accredited Activities** |  |  |  |  |  |
| 1. A program shall have a documented plan to ensure continuation of accredited activities in the event of a temporary and unexpected loss of capability up to 6 months.
 | 4.2 |  |  |  |  |
| 1. The documented plan shall include methods for maintaining redundant accredited measurement capabilities.
 | 4.2 |  |  |  |  |
| 1. The documented plan shall include methods for re-distribution of responsibilities following the loss of key personnel.
 | 4.2 |  |  |  |  |
| 1. Programs shall identify measurement and testing equipment essential to maintain operation of key systems.
 | 4.2.1(a) |  |  |  |  |
| 1. Programs that utilize duplicate measurement system capability for continuation of accredited activities shall maintain calibration of measurement systems.
 | 4.2.1(b) |  |  |  |  |
| 1. Programs that utilize duplicate measurement system capability for continuation of accredited activities shall demonstrate equivalent performance to primary system.
 | 4.2.1(b) |  |  |  |  |
| 1. Programs that utilize duplicate measurement system capability for continuation of accredited activities shall identify responses to catastrophic loss (e.g., natural disaster, power surge, building fire).
 | 4.2.1(b) |  |  |  |  |
| 1. Programs that utilize backup service providers shall have a documented agreement in place that includes processing equipment types, dosimeter types, accredited categories, and number of expected measurements.
 | 4.2.1(c) |  |  |  |  |
| 1. Programs that utilize backup service providers shall ensure that backup service providers shall maintain a DOELAP accreditation or vendor qualification per DOE-STD-1111, *Department of Energy Laboratory Accreditation Program Administration*.
 | 4.2.1(c) |  |  |  |  |
| 1. Programs that utilize backup service providers shall ensure that backup service providers shall have demonstrated acceptable performance in all accredited categories identified in the agreement.
 | 4.2.1(c) |  |  |  |  |
| 1. Programs that utilize backup service providers shall ensure that backup service providers shall perform blind testing of all relevant categories at a defined frequency after establishing the agreement.
 | 4.2.1(c) |  |  |  |  |
| 1. Duplicate measurement systems and backup service provider capabilities shall be exercised at a frequency identified in the QAP to ensure dosimetry results are accurate, repeatable, and verifiable
 | 4.2.1(d) |  |  |  |  |
| 1. In the event backup service provider is required, the program will notify the DOELAP Senior Technical Manager prior to sending personnel dosimeters to the backup service provider.
 | 4.2.1(e) |  |  |  |  |
| 1. A plan shall identify key personnel and document methods for mitigation of the loss until qualified replacements can be established. Examples may include staff reassignment (permanent or temporary), consultant agreement, or corporate reach back program.
 | 4.2.2(b) |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Program Management** |  |  |  |  |  |
| 1. Managerial and technical personnel shall have the resources needed to carry out their duties, including the implementation of the QAP.
 | 4.3(a) |  |  |  |  |
| 1. A Technical Lead (however named), who is experienced in applied radiation dosimetry and knowledgeable in the design and operation of the dosimetry system(s) currently used, shall be assigned.
 | 4.3(b) |  |  |  |  |
| 1. The Technical Lead is responsible for ensuring that dosimetry data are approved and validated, including making decisions regarding questionable data.
 | 4.3(b) |  |  |  |  |
| 1. A Quality Lead (however named), who has responsibility and authority for ensuring that the QAP is implemented, shall be assigned.
 | 4.3(c) |  |  |  |  |
| 1. The Quality Lead shall have authority to communicate QA issues directly with the Technical Lead and other organizational management.
 | 4.3(c) |  |  |  |  |
| 1. Responsibilities for the implementation of the QAP shall be defined, including the organizational structure and functional responsibilities of key personnel.
 | 4.3(d) |  |  |  |  |
| 1. The individuals responsible for the implementation of the QAP may delegate work to others but shall retain responsibility.
 | 4.3(e) |  |  |  |  |
| 1. Management and personnel shall be free from undue internal and external influences that may adversely impact the quality of their work.
 | 4.3(f) |  |  |  |  |
| 1. Management shall conduct a formal review of the personnel dosimetry QAP during the 3-year DOELAP accreditation cycle.
 | 4.3(g) |  |  |  |  |
| 1. The (formal management) review shall be completed at least one year before the accreditation end period so that it is available for the DOELAP on-site assessment.
 | 4.3(g) |  |  |  |  |
| 1. Management (review participants) shall consist of the Quality Lead, Technical Lead, and a member of management that has authority for allocation of resources.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include assessing opportunities for improvement and the need for changes to policies or processes.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include comparison of quality objectives and standards against achievements.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include assessment and test results.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include non-conformances and corresponding corrective actions, preventative measures, and deficiency trends.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include results from external and internal audits.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include continuation of accreditation activities plan and any associated agreements.
 | 4.3(g) |  |  |  |  |
| 1. At minimum, the (formal management) review shall include other relevant factors, such as quality control (QC) activities, resources, and training.
 | 4.3(g) |  |  |  |  |
| 1. When more than one organization is involved in the implementation of the requirements for DOELAP accreditation (e.g., major equipment maintenance, calibration, document control and records), the responsibilities, interfaces, and authorities of each organization shall be clearly defined and documented.
 | 4.3(h) |  |  |  |  |
| 1. When a vendor or subcontractor is involved in the implementation of the requirements for DOELAP accreditation, the accredited program shall have a procedure describing how DOELAP requirements are maintained.
 | 4.3(i) |  |  |  |  |
| 1. External audits of a vendor or subcontractor’s QAP shall be performed initially and at least once during the DOELAP accreditation period.
 | 4.3(j) |  |  |  |  |
| 1. The audits shall be supplemented by an ongoing evaluation of the performance of the vendor or subcontractor through blind audits, outlined in Section 4.8.2 of this standard.
 | 4.3(j) |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Personnel Training and Qualifications** |  |  |  |  |  |
| 1. All personnel performing accredited activities shall have the training, qualifications, and competence to perform their assigned tasks effectively.
 | 4.4(a) |  |  |  |  |
| 1. A training program commensurate with the complexity and scope of the assigned responsibilities shall be documented.
 | 4.4(b) |  |  |  |  |
| 1. Training shall be provided to achieve initial proficiency, maintain proficiency, and adapt to changes in job responsibilities, new technologies, or policies and procedures.
 | 4.4(c) |  |  |  |  |
| 1. The Technical Lead shall initially and at least annually evaluate and document the proficiency of each staff member authorized to perform dosimetry-related functions. When appropriate, this proficiency assessment should include an observation of performance.
 | 4.4(d) |  |  |  |  |
| 1. If proficiency is not achieved or maintained, any person’s work duties that impact the quality of accredited activities shall be performed under the direction or supervision of a properly trained and qualified individual.
 | 4.4(e) |  |  |  |  |
| 1. Such personnel (proficiency not achieved or maintained) shall not be the primary signatory on dose processing records or QA/QC reports until proficiency is demonstrated.
 | 4.4(e) |  |  |  |  |
| 1. All personnel performing interim processing shall have the training, qualifications, and competence to perform their assigned tasks effectively.
 | 4.8.3Interim processing |  |  |  |  |
| 1. A training program commensurate with the complexity and scope of the assigned responsibilities (for interim processing) shall be documented.
 | 4.8.3Interim processing |  |  |  |  |
| 1. Training for interim processing shall be provided to achieve initial proficiency, maintain proficiency, and adapt to changes in job responsibilities, new technologies, or policies and procedures.
 | 4.8.3Interim processing |  |  |  |  |
| 1. The Technical Lead shall initially and at least annually evaluate and document the proficiency of each staff member authorized to perform interim processing. When appropriate, this proficiency assessment should include an observation of performance.
 | 4.8.3Interim processing |  |  |  |  |
| 1. If proficiency is not achieved or maintained, any person’s work duties that impact the quality of interim processing shall be performed under the direction or supervision of a properly trained and qualified individual.
 | 4.8.3Interim processing |  |  |  |  |
| 1. Such personnel (proficiency not achieved or maintained) shall not be the primary signatory on interim processing records or QA/QC reports until proficiency is demonstrated.
 | 4.8.3Interim processing |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Documents and Records** |  |  |  |  |  |
| 1. A system shall be in place which clearly describes the process applied for controlling the dosimetry documents and records throughout the entire dosimetry cycle.
 | 4.5(a) |  |  |  |  |
| 1. Documents required by the QAP shall be controlled to ensure that the correct and most current documents are being utilized.
 | 4.5(b) |  |  |  |  |
| 1. QA documents shall be reviewed for accuracy and approved by authorized personnel in accordance with documented internal review frequencies.
 | 4.5(b) |  |  |  |  |
| 1. A comprehensive record of processing activities shall be maintained.
 | 4.5(c) |  |  |  |  |
| 1. Records shall contain Sufficient identification to allow correlation with calibration and QC records.
 | 4.5(c) |  |  |  |  |
| 1. Procedures shall be established and maintained for the identification, collection, indexing, access, filing, storage, maintenance, and disposal of quality and technical records.
 | 4.5(d) |  |  |  |  |
| 1. QA and technical records shall be legible, readily available upon request, and stored in a suitable environment to prevent damage, deterioration, or loss.
 | 4.5(e) |  |  |  |  |
| 1. QA and technical records shall be available for review during the on-site assessment.
 | 4.5(e) |  |  |  |  |
| 1. Electronic records shall be protected and regularly backed-up on a pre-determined schedule to prevent unauthorized access, amendment, or loss.
 | 4.5(f) |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Work Processes** |  |  |  |  |  |
| 1. Accredited activities that can influence the assignment of dose to an individual shall be conducted in accordance with established procedures, which shall include the following:

• Work methods and sequence;• Equipment to be used;• Work environment;• Quality Control;• Acceptance criteria;• Inspection points; and• Recordkeeping. | 4.6(a) |  |  |  |  |
| 1. Work process procedures shall control the preservation of identification of dosimeters, measurements, dose records, and other data on which the dose is based, and maintain traceability to the individual concerned.
 | 4.6(b) |  |  |  |  |
| 1. Work process procedures shall prescribe specifications and precautions to control the processing, handling, issuing, storage, retrieval, and shipment of dosimeters.
 | 4.6(c) |  |  |  |  |

| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
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| **YES** | **NO** | **N/A** |
| **Quality Improvement** |  |  |  |  |  |
| 1. QC procedures shall be implemented to ensure that the equipment performs at the level of precision and accuracy defined in processing protocols.
 | 4.7(a) |  |  |  |  |
| 1. QC data shall be recorded in such a way that trends are detectable.
 | 4.7(a) |  |  |  |  |
| 1. When QC data is found to be outside pre-defined acceptance criteria, corrective actions shall be implemented and documented.
 | 4.7(b) |  |  |  |  |
| 1. Reevaluation of all dosimeters processed since last acceptance shall be performed (when QC data is found to be outside pre-defined acceptance criteria).
 | 4.7(b) |  |  |  |  |
| 1. Software verification and validation (V&V) shall be performed in accordance with an appropriate, documented software quality assurance (SQA) plan.
 | 4.7(c) |  |  |  |  |
| 1. V&V shall be applied to process control software, dose algorithms, data processing, and record keeping.
 | 4.7(c) |  |  |  |  |
| 1. In addition, software version control shall be included in the program’s documented control procedures.
 | 4.7(c) |  |  |  |  |
| 1. Computer or laboratory information systems used to input, store, calculate, or retrieve data in relation to key dosimeter processing steps shall establish and maintain procedures describing data processes.
 | 4.7(d) |  |  |  |  |
| 1. Computer or laboratory information systems used to input, store, calculate, or retrieve data in relation to key dosimeter processing steps shall validate the accuracy of data entry.
 | 4.7(d) |  |  |  |  |
| 1. Computer or laboratory information systems used to input, store, calculate, or retrieve data in relation to key dosimeter processing steps shall verify the accuracy of any calculations performed.
 | 4.7(d) |  |  |  |  |
| 1. The variability of test results among equipment and locations shall be assessed to ensure consistency.
 | 4.7(e) |  |  |  |  |
| 1. Internal audits shall be conducted at least annually.
 | 4.7(f) |  |  |  |  |
| 1. Internal audits shall be structured in a way to ensure that all elements of this standard are reviewed over the 3-year accreditation period.
 | 4.7(f) |  |  |  |  |
| 1. Audits and actions taken for correcting identified issues and actions implemented to prevent recurrence shall be documented
 | 4.7(f) |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Facilities and Equipment** |  |  |  |  |  |
| 1. Facilities and equipment shall be adequate to perform the type(s) of processing for which accreditation is sought.
 | 4.8(a) |  |  |  |  |
| 1. A list and description of facilities and equipment which have the potential to impact the quality of dose results shall be available for review.
 | 4.8(a) |  |  |  |  |
| 1. Adequate facilities and equipment shall have sufficient space to perform processing.
 | 4.8(b) |  |  |  |  |
| 1. Adequate facilities and equipment shall have proper shielding of areas from unwanted radiation.
 | 4.8(b) |  |  |  |  |
| 1. Adequate facilities and equipment shall have environmental monitoring and controls, including background radiation.
 | 4.8(b) |  |  |  |  |
| 1. Adequate facilities and equipment shall have properly calibrated equipment.
 | 4.8(b) |  |  |  |  |
| 1. Facilities and equipment for backup systems shall be adequate to perform the type(s) of processing for which accreditation is sought.
 | 4.8(c) |  |  |  |  |
| 1. A list and description of facilities and equipment for backup systems which have the potential to impact the quality of dose results shall be available for review.
 | 4.8(c) |  |  |  |  |
| 1. Adequate facilities and equipment for backup systems shall have sufficient space to perform processing.
 | 4.8(c) |  |  |  |  |
| 1. Adequate facilities and equipment for backup systems shall have proper shielding of areas from unwanted radiation.
 | 4.8(c) |  |  |  |  |
| 1. Adequate facilities and equipment for backup systems shall have environmental monitoring and controls, including background radiation.
 | 4.8(c) |  |  |  |  |
| 1. Adequate facilities and equipment for backup systems shall have properly calibrated equipment.
 | 4.8(c) |  |  |  |  |
| 1. A design specification shall be established for each dosimeter model and configuration.
 | 4.8.1(a) |  |  |  |  |
| 1. The specification shall include dosimeter holders, filter material used, density thickness (mg/cm2) of the material, and positions of the dosimetric material within the dosimeter.
 | 4.8.1(a) |  |  |  |  |
| 1. Dosimeter materials and holders shall be acceptance tested before being placed into service.
 | 4.8.1(b) |  |  |  |  |
| 1. The impacts of the following system characteristics shall be determined and documentation shall clearly indicate algorithm name and version used to generate the results:• Lower limit of detection;• Useful dose range;• Background contribution to dose equivalent;• Processing system measurement uncertainty;• Repeatability/precision;• Residual signal;• Angular dependence; and• Batch homogeneity.
 | 4.8.1(c) |  |  |  |  |
| 1. Fading of dosimeter materials under normal conditions shall be determined for 2 times the period of intended use, not to exceed 6 months past the period of intended use. Fading of annual dosimeters shall be documented and accounted for over the period of 18 months.
 | 4.8.1(d) |  |  |  |  |
| 1. Dosimeters placed into service shall be inspected according to a defined schedule or frequency to ensure all necessary components are in place.
 | 4.8.1(e) |  |  |  |  |
| 1. A screening procedure shall be used to ensure dosimetry materials, including sensitive elements, are consistent with the dosimeter design. Procedures shall include the phosphor type and sensitivity.
 | 4.8.1(e) |  |  |  |  |
| 1. Loading of dosimeters shall be conducted in a well-defined order to ensure the dosimeter complies with the design specification and to prevent confusion in handling visually similar elements.
 | 4.8.1(f) |  |  |  |  |
| 1. Precautions shall be taken to avoid optical fading and non-radioactive contamination of the phosphor or the detector.
 | 4.8.1(f) |  |  |  |  |
| 1. If a dosimeter is used in radiation fields it is not designed for (e.g., a photon dosimeter being used in a mixed photon/neutron field), the effect of the radiation not intended to be measured shall be determined.
 | 4.8.1(g) |  |  |  |  |
| 1. A positive system for identifying and tracking all dosimeters through the processing cycle shall be established.
 | 4.8.2(a) |  |  |  |  |
| 1. Dosimeter reader operation and stability shall be verified before use with QC dosimeters and measurement of system internal parameters (e.g., photomultiplier tube sensitivity, dark counts, light source counts).
 | 4.8.2(b) |  |  |  |  |
| 1. Records shall indicate that dose measurements are made only with stable equipment.
 | 4.8.2(b) |  |  |  |  |
| 1. Annealing of dosimeters shall be conducted in a reproducible manner regarding time, temperature, cooling rate, humidity, and light.
 | 4.8.2(c) |  |  |  |  |
| 1. The annealing technical basis shall demonstrate the upper dose range limit for which annealing may be performed.
 | 4.8.2(c) |  |  |  |  |
| 1. QC and unirradiated dosimeters shall be used to routinely identify reader processing issues.
 | 4.8.2(d) |  |  |  |  |
| 1. Each processing protocol shall provide for interspersing QC dosimeters.
 | 4.8.2(d) |  |  |  |  |
| 1. Records shall demonstrate reproducibility for the irradiation method.
 | 4.8.2(d) |  |  |  |  |
| 1. Unirradiated and QC dosimeter use frequency shall be determined based upon the total number of dosimeters processed, equipment stability, type of QC checks, or other suitable method.
 | 4.8.2(d) |  |  |  |  |
| 1. Blind testing shall be conducted to validate the overall performance on all measurement systems used for the dose of record.
 | 4.8.2(e) |  |  |  |  |
| 1. The (Blind testing) program shall use dosimeters irradiated by traceable isotopic sources or x-ray beams to doses that are unknown to the processor.
 | 4.8.2(e) |  |  |  |  |
| 1. The (Blind testing) program shall have documented procedures describing steps to be taken if blind testing results are outside of pre-established criteria.
 | 4.8.2(e) |  |  |  |  |
| 1. The (Blind testing) program shall test all categories throughout the 3-year accreditation period for which the program is accredited.
 | 4.8.2(e) |  |  |  |  |
| 1. If accredited in Category IIA, (Blind testing) programs shall include at least 2 x-ray beams from 20 keV to 70 keV and at least 2 x-ray beams from 70 keV to 300 keV. Cesium-137 (Cs-137) and/or cobalt-60 (Co-60) shall always be included.
 | 4.8.2(e) |  |  |  |  |
| 1. If accredited in Category IIIA, (Blind testing) programs shall include strontium (Sr) and/or yitrium-90 (Y-90) and krypton-85 (Kr-85).
 | 4.8.2(e) |  |  |  |  |
| 1. If accredited in Category VA, (Blind testing) programs shall include both bare and moderated californium-252 (Cf-252).
 | 4.8.2(e) |  |  |  |  |
| 1. The dosimetry algorithm shall be documented in sufficient detail to indicate its validity for dose interpretation.
 | 4.8.2(f) |  |  |  |  |
| 1. Documentation (of the dosimetry algorithm) shall indicate algorithm name and version.
 | 4.8.2(f) |  |  |  |  |
| 1. Documentation (of the dosimetry algorithm) shall include fundamental data for creating and testing.
 | 4.8.2(f) |  |  |  |  |
| 1. Documentation (of the dosimetry algorithm) shall include uncertainty analysis of the algorithm.
 | 4.8.2(f) |  |  |  |  |
| 1. Documentation (of the dosimetry algorithm) shall include process controls used for algorithm development.
 | 4.8.2(f) |  |  |  |  |
| 1. Documentation (of the dosimetry algorithm) shall include attributes and limitations of the algorithm.
 | 4.8.2(f) |  |  |  |  |
| 1. Deviations from processing procedures, equipment, or facilities shall be verified to ensure no degradation of performance has occurred.
 | 4.8.2(g) |  |  |  |  |
| 1. For interim processing, a technical basis determining signal depletion as a function of the number of times the dosimeter is processed is required.
 | 4.8.3 |  |  |  |  |
| 1. For interim processing, calibration of processing equipment shall not be less restrictive than the manufacturer’s prescribed requirements.
 | 4.8.3 |  |  |  |  |
| 1. For interim processing, a technical basis shall be developed when calibration techniques differ from manufacturer recommendations or when calibration frequency is not prescribed by the manufacturer.
 | 4.8.3 |  |  |  |  |

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| **YES** | **NO** | **N/A** |
| **Maintenance and Calibration** |  |  |  |  |  |
| 1. A preventative maintenance program for equipment used to process dosimeters or perform QC checks shall be implemented.
 | 4.9(a) |  |  |  |  |
| 1. Equipment used for dosimeter processing or QC shall be calibrated periodically or whenever the accuracy of the equipment is suspect.
 | 4.9(b) |  |  |  |  |
| 1. Calibration procedures shall identify required accuracy and define the methods and frequency for checking accuracy.
 | 4.9(b) |  |  |  |  |
| 1. Calibration procedures shall not be less restrictive than the manufacturer’s prescribed requirements.
 | 4.9(b) |  |  |  |  |
| 1. A technical basis shall be developed when calibration techniques differ from manufacturer recommendations or when calibration frequency is not prescribed by the manufacturer.
 | 4.9(b) |  |  |  |  |
| 1. Processing-equipment calibration or verification records shall include:• Equipment name or description;• Model, style, and serial number;• Manufacturer;• Notation of all equipment variables requiring calibration or verification;• Range of calibration or verification;• Resolution of the instrument and its allowable error;• Calibration or verification date and schedule;• Date and result of last calibration;• Identity of the individual and organization for calibration;• Source of reference standard and traceability; and• Environmental conditions.
 | 4.9(c) |  |  |  |  |
| 1. Equipment shall be properly identified to correlate with calibration records and maintenance logs.
 | 4.9(d) |  |  |  |  |
| 1. The energy response of each type or model of dosimeter shall be characterized for all radiation categories and exposure ranges for which it is to be used
 | 4.9(e) |  |  |  |  |
| 1. Calibrations and characterizations shall be performed using reference standards traceable to the National Institute of Standards and Technology (NIST) or an equivalent national metrology institute.
 | 4.9(f) |  |  |  |  |
| 1. All processing equipment calibration, verification, and maintenance practices shall be documented.
 | 4.9(f) |  |  |  |  |
| 1. When results are found to be inaccurate, reviews of the equipment used to generate the results shall be conducted to determine the validity of the data and the corrective actions to be taken.
 | 4.9(g) |  |  |  |  |

| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| --- | --- | --- | --- |
| **YES** | **NO** | **N/A** |
| **Reporting** |  |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include the name of accredited program.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include the processor name and address, if different from accredited program.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include the personnel dosimetry monitoring results.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include pertinent dates for the wear period and the identification of dosimeters.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include processor and accredited program identification codes, if applicable.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include explanation of any deviation from routine processing procedures if the deviation could affect the reported dose.
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include signature of or reference to the Technical Lead (however named).
 | 4.10 |  |  |  |  |
| 1. The dose report to the exposed individual(s) from the accredited program shall include software version(s) of the dose algorithm(s) used.
 | 4.10 |  |  |  |  |

| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| --- | --- | --- | --- |
| **YES** | **NO** | **N/A** |
| **Guidance for Programs that use Service Providers** |  |  |  |  |  |
| 1. A copy of the work agreement with the service provider, including any agreed upon commitments, shall be available for review.
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish access to relevant documents, including dosimetry technical basis documents, policies and procedures, and the documented QAP
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish personnel whole body and extremity dosimeters provided for beta and gamma radiation
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish personnel whole body dosimeters provided for neutron radiation, including calibration that closely represents the workplace neutron spectrum
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish personnel dosimetry data validation and verification
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish personnel dosimetry reports (see 4.10)
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish emergency personnel dosimetry services
 | Appendix B |  |  |  |  |
| 1. The work agreement should clearly establish appropriate packaging and handing of dosimeters
 | Appendix B |  |  |  |  |
| 1. (Program) staff shall have sufficient qualifications and experience to be able to sufficiently assess the capabilities and limitations of the service provider.
 | Appendix B |  |  |  |  |
| 1. (Program) staff shall have sufficient qualifications and experience to be able to validate dosimeter results used to determine dose-of-record.
 | Appendix B |  |  |  |  |
| 1. (Program) staff shall have sufficient qualifications and experience to be able to provide oversight of the service provider, including the review of QC data and conduct on-site assessments.
 | Appendix B |  |  |  |  |
| 1. (Program) staff shall have sufficient qualifications and experience to be able to identify error trends and anomalous data.
 | Appendix B |  |  |  |  |
| 1. (Program) staff shall have sufficient qualifications and experience to be able to conduct QA assessments.
 | Appendix B |  |  |  |  |
| 1. A technical basis for the selected performance testing categories or subcategories shall be available.
 | Appendix B |  |  |  |  |
| 1. The program shall have a procedure for conducting QA assessments of the service provider, including on-site audits, QC reviews, and blind audit dosimeters.
 | Appendix B |  |  |  |  |
| 1. The procedures (for conducting QA assessments of the service provider, including on-site audits, QC reviews, and blind audit dosimeters) shall also describe how findings are identified and corrected.
 | Appendix B |  |  |  |  |
| 1. The program shall have a procedure for handling and shipping dosimeters.
 | Appendix B |  |  |  |  |
| 1. The procedure (for handling and shipping dosimeters) shall include details on maintaining dosimeter chain-of-custody and assessment of any transit dose.
 | Appendix B |  |  |  |  |

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| Assessor |  | Date |

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| Assessor |  | Date |