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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Performance Testing (PT)** |  |  |  |  |  |
| 1. Proficiency in processing shall be demonstrated for each model and type of dosimeter that the program intends to use to demonstrate compliance with 10 CFR 835.402. the radiation categories selected in the application for which accreditation is desired shall be representative of the radiation type and energy encountered at any location where the dosimeter will be used.
 | 3.2(a) |  |  |  |  |
| 1. The applicant shall review the performance testing data for potential improvements in the dosimetry measurement system.
 | 3.2(e) |  |  |  |  |
| 1. Processing of performance testing dosimeters shall be defined and consistent with routine processing procedures. The same dosimeter model, type, and sensitive element used to assess occupational exposures shall also be used during performance testing.
 | 3.2(f) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Program Management (PM)** |  |  |  |  |  |
| 1. Managerial and technical personnel shall have the resources needed to carry out their duties, including the implementation of the Quality Assurance Program.
 | 4.2(a) |  |  |  |  |
| 1. A technical lead (however named) shall be assigned.
 | 4.2(b) |  |  |  |  |
| 1. The technical lead shall have experience in applied radiation dosimetry and shall be knowledgeable in the design and operation of the dosimetry system(s) currently used.
 | 4.2(b) |  |  |  |  |
| 1. The technical lead shall have the responsibility for ensuring that dosimetry data are approved and validated, and for making decisions regarding questionable data.
 | 4.2(b) |  |  |  |  |
| 1. A quality assurance (QA) lead (however named) shall be assigned.
 | 4.2(c) |  |  |  |  |
| 1. The QA lead shall have the responsibility and authority to implement the quality assurance program.
 | 4.2(c) |  |  |  |  |
| 1. The QA lead shall have the authority to communicate quality assurance issues directly with the technical lead and other organizational management.
 | 4.2(c) |  |  |  |  |
| 1. Responsibilities for the implementation of the quality assurance program shall be defined, including the organizational structure and functional responsibilities of key personnel.
 | 4.2(d) |  |  |  |  |
| 1. Where quality assurance program work is delegated, the responsibility shall remain with the programmatically-assigned individual.
 | 4.2(e) |  |  |  |  |
| 1. Management and personnel shall be free from undue internal and external influences that may adversely impact the quality of their work.
 | 4.2(f) |  |  |  |  |
| 1. A formal review of the QA program shall be conducted at the midpoint of the DOELAP assessment cycle.
 | 4.2(g) |  |  |  |  |
| 1. The formal review of the QA program shall be conducted by the technical lead, the QA lead, and a member of senior management who has authority for allocation of resources.
 | 4.2(g) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **Yes** | **No** | **N/A** |
| **Program Management (PM)** |  |  |  |  |  |
| 1. The formal review of the QA program shall include:
* comparison of quality objectives and standards against achievements;
* assessment and test results;
* non-conformances and corresponding corrective actions, preventative measures, and deficiency trends;
* results from external and internal audits; and
* other relevant factors, such as quality control activities, resources, and training.
 | 4.2(g) |  |  |  |  |
| 1. A program shall have a documented plan for continuity of operations. This includes service contracts, in-house maintenance, spare parts capabilities, and unexpected loss of key personnel.
 | 4.2(h) |  |  |  |  |
| 1. Responsibilities, interfaces, and authority of each organization responsible for the implementation of DOELAP requirements are clearly defined.
 | 4.2(i) |  |  |  |  |
| 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 they will ensure that all of the DOELAP requirements are maintained.
 | 4.2(j) |  |  |  |  |
| 1. External audits of a vendor or subcontractor’s quality assurance plan shall be performed initially and at least once during the DOELAP accreditation period.
 | 4.2(k) |  |  |  |  |
| 1. External vendor audits shall be supplemented by an ongoing evaluation of the performance of the vendor or subcontractor through blind audits, which are outlined in section 4.7.2.(e)
 | 4.2(k) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Training and Qualifications (TQ)** |  |  |  |  |  |
| 1. All personnel performing accredited activities shall have the training, qualifications, and competence to perform their assigned tasks.
 | 4.3(a) |  |  |  |  |
| 1. A training program commensurate with the complexity and scope of the assigned responsibilities shall be documented.
 | 4.3(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.
 | 4.3(b) |  |  |  |  |
| 1. The technical lead shall initially and at least annually evaluate the proficiency of each staff member authorized to perform dosimetry related functions. This proficiency assessment shall include an observation of performance.
 | 4.3(c) |  |  |  |  |
| 1. In the event that proficiency is not achieved or maintained, any person’s work duties that impact the quality of accredited activities shall be performed under direction or supervision of a properly trained and qualified individual. Such personnel shall not be the primary signatory on dose processing records or QA/QC reports until proficiency is demonstrated.
 | 4.3(d) |  |  |  |  |
| 1. If interim processing of dosimeters is performed (i.e., non-dose of record processing of an accredited dosimeter), personnel performing interim processing shall meet the requirements of TQ1 through TQ4..
 | 4.7.3 |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Documents and Records (DR)** |  |  |  |  |  |
| 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.
 | 4.4(a) |  |  |  |  |
| 1. All documents that form the quality assurance program shall be controlled to ensure that the correct and most current documents are being employed.
 | 4.4(b) |  |  |  |  |
| 1. Documents shall be reviewed for accuracy and approved by authorized personnel in accordance with documented internal review frequencies.
 | 4.4(b) |  |  |  |  |
| 1. A comprehensive record of processing activities shall be maintained.
 | 4.4(c) |  |  |  |  |
| 1. Records shall contain sufficient identification to allow correlation with calibration and quality control records.
 | 4.4(c) |  |  |  |  |
| 1. Procedures shall be established and maintained for the identification, collection, indexing, access, filing, storage, maintenance, and disposal of quality and technical records.
 | 4.4(d) |  |  |  |  |
| 1. All quality assurance and technical records shall be legible, easily retrievable, and stored in a suitable environment to prevent damage, deterioration, or loss.
 | 4.4(e) |  |  |  |  |
| 1. Records shall be available for review during the on-site assessment.
 | 4.4(e) |  |  |  |  |
| 1. Electronic records shall be protected and regularly backed-up on a pre-determined schedule to prevent unauthorized access, amendment, or loss.
 | 4.4(f) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Work Processes (WP)** |  |  |  |  |  |
| 1. All accredited activities that can influence the assignment of dose to an individual are 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.
 | 4.5(a) |  |  |  |  |
| 1. Procedures control the preservation of identification of dosimeters, measurements, dose records, and other data on which the dose is based, and maintain their traceability to the individual concerned.
 | 4.5(b) |  |  |  |  |
| 1. Procedures prescribe specifications and precautions to control the processing, handling, issuing, storage, retrieval, and shipment of dosimeters
 | 4.5(c) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Quality Improvement (QI)** |  |  |  |  |  |
| 1. The program shall have a documented quality assurance program 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 quality assurance manual or supporting documentation shall include:
* statement of quality policy and quality objectives;
* documented processes, procedures and instructions;
* documents needed to ensure effective planning, operation, and control of processes;
* records required to demonstrate compliance with the quality assurance program;
* dosimetry specifications and Technical Basis Documentation;
* acceptance criteria for dosimeter materials and holders;
* training objectives and processes for maintaining proficiency; and
* practices for handling and resolving contested dosimetry data and test reports.
 | 4.1(b) |  |  |  |  |
| 1. Quality control procedures shall be implemented to ensure that the equipment performs at the levels of precision and accuracy defined in the processing protocols.
 | 4.6(a) |  |  |  |  |
| 1. Quality control data shall be recorded in such a way that trends are detectable.
 | 4.6(a) |  |  |  |  |
| 1. When quality control data is found to be outside pre-defined acceptance criteria, corrective actions to correct the problem and to prevent incorrect results from being reported shall be documented.
 | 4.6(b) |  |  |  |  |
| 1. Reevaluation of all dosimeters processed since last acceptance shall be performed when quality control data is found to be outside pre-defined acceptance criteria.
 | 4.6(b) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Quality Improvement (QI)** |  |  |  |  |  |
| 1. Software verification and validation (V and V) shall be performed in accordance with an appropriate, documented software quality assurance plan. V and V shall include process control software, dose algorithms, data processing, and record keeping.
 | 4.6(c) |  |  |  |  |
| 1. Software version control shall be included in the program’s documented control procedures.
 | 4.6(c) |  |  |  |  |
| 1. When computer or laboratory information systems are used to input, store, calculate, or retrieve data in relation to key dosimeter processing steps, the program shall
* establish and maintain procedures describing the processes;
* validate the accuracy of data entry; and
* verify the accuracy of any calculations performed.
 | 4.6(d) |  |  |  |  |
| 1. The variability of test results among staff, equipment, and locations shall be assessed to ensure consistency.
 | 4.6(e) |  |  |  |  |
| 1. Internal audits shall be conducted at least annually and structured in a way to ensure that all elements of DOE-STD-1095-2018 are reviewed over the three year accreditation period.
 | 4.6(f) |  |  |  |  |
| 1. All audits and actions taken for correcting identified problems and preventative actions implemented to prevent recurrence shall be documented.
 | 4.6(f) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Facilities and Equipment (FE)** |  |  |  |  |  |
| 1. A list and description of facilities and equipment that have the potential to impact the quality of dose results is available for review.
 | 4.7(a) |  |  |  |  |
| 1. Facilities and equipment shall be adequate to perform the type(s) of processing for which accreditation is sought.
 | 4.7(a) |  |  |  |  |
| 1. Facilities shall have:
* sufficient space to perform processing;
* proper shielding of areas from unwanted radiation.
 | 4.7(b) |  |  |  |  |
| 1. Environmental parameters, including background radiation, are monitored to ensure adequate storage conditions.
 | 4.7(b) |  |  |  |  |
| 1. Equipment requiring calibration is properly calibrated prior to use.
 | 4.7(b) |  |  |  |  |
| 1. In the event a primary processing system fails, adequate backup equipment shall be possessed and maintained, or provisions to use a backup DOELAP accredited laboratory is available.
 | 4.7(c) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Thermoluminenscent Dosimeters (TD)** |  |  |  |  |  |
| 1. A design specification shall be established for each dosimeter model and configuration. The specification shall include acceptance criteria for dosimeter materials and holders, any filter material used, the areal density (mg/cm2) of the material, and the positions of the dosimetric material within the dosimeter.
 | 4.7.1(a) |  |  |  |  |
| 1. Dosimeter materials and holders shall be acceptance tested before being placed into service.
 | 4.7.1(b) |  |  |  |  |
| 1. The impacts of the following system characteristics shall be determined. 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
* batch homogeneity
 | 4.7.1(c) |  |  |  |  |
| 1. Fading of dosimeter materials under normal conditions shall be determined for two times the period of intended use, not to exceed 6 months past the period of intended use.
 | 4.7.1(d) |  |  |  |  |
| 1. Dosimeters placed into service shall be checked according to a defined schedule to ensure all necessary components are in place. 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.
 | 4.7.1(e) |  |  |  |  |
| 1. Loading of dosimeters shall be carried out in a well-defined order to ensure the dosimeter is in compliance with the design specification and prevent confusion in handling visually similar elements. Precautions shall be taken to avoid optical fading and non-radioactive contamination of the phosphor or the detector.
 | 4.7.1(f) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Thermoluminenscent Dosimeters (TD)** |  |  |  |  |  |
| 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.
 | 4.7.1(g) |  |  |  |  |
| 1. Operators of dosimetry processing equipment (i.e., TLD readers, anneal ovens) must understand the operating conditions and critical functions of the equipment, including recognition and resolution of equipment failures.
 | 4.3(b) |  |  |  |  |
| 1. A positive system for identifying and tracking all dosimeters through the processing cycle shall be established.
 | 4.7.2(a) |  |  |  |  |
| 1. Dosimeter reader operation and stability shall be verified before use with quality control dosimeters and measurement of system internal parameters (e.g., photomultiplier tube sensitivity, dark counts, light source counts).
 | 4.7.2(b) |  |  |  |  |
| 1. Records shall indicate that dose measurements are made only with stable equipment.
 | 4.7.2(b) |  |  |  |  |
| 1. Annealing of dosimeters shall be conducted in a reproducible manner regarding time, temperature, cooling rate, humidity, and light.
 | 4.7.2(c) |  |  |  |  |
| 1. The annealing technical basis shall be documented to demonstrate the upper dose range limit for which annealing may be performed.
 | 4.7.2(c) |  |  |  |  |
| 1. Quality Control and unirradiated dosimeters shall be used routinely to identify reader processing problems.
 | 4.7.2(d) |  |  |  |  |
| 1. Each processing protocol shall provide for interspersing quality control dosimeters.
 | 4.7.2(d) |  |  |  |  |
| 1. Records shall demonstrate reproducibility for the irradiation method used for irradiating quality control dosimeters.
 | 4.7.2(d) |  |  |  |  |
| 1. Unirradiated and quality control dosimeter use frequency shall be determined based upon the total number of dosimeters processed, equipment stability, type of quality control checks, or other suitable method.
 | 4.7.2(d) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Thermoluminenscent Dosimeters (TD)** |  |  |  |  |  |
| 1. Blind testing shall be conducted to validate the overall performance of the dosimetry system.
 | 4.7.2(e) |  |  |  |  |
| 1. The blind testing program shall consist of the use of dosimeters irradiated by NIST traceable sources or radiation-generating devices to doses that are unknown to the processor.
 | 4.7.2(e) |  |  |  |  |
| 1. Exposures to blind test dosimeters shall include those sources and x-ray beams for which the program is accredited.
 | 4.7.2(e) |  |  |  |  |
| 1. Procedures exist that describe steps to be taken in the event that blind testing results are outside of pre-established criteria.
 | 4.7.2(e) |  |  |  |  |
| 1. The dosimetry algorithm shall be documented in sufficient detail to indicate its validity for dose interpretation.
 | 4.7.2(f) |  |  |  |  |
| 1. Documentation shall indicate the algorithm name and version, and include
* Fundamental data for creating and testing;
* Uncertainty analysis of the algorithm;
* Process controls used for algorithm development; and
* Attributes and limitations of the algorithm.
 | 4.7.2(f) |  |  |  |  |
| 1. Deviations from processing procedures, equipment or facilities shall be verified to ensure no degradation of performance has occurred.
 | 4.7.2(g) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **OSL Dosimeters (OD)** |  |  |  |  |  |
| 1. A design specification shall be established for each dosimeter model and configuration. The specification shall include acceptance criteria for dosimeter materials and holders, any filter material used, the areal density (mg/cm2) of the material, and the positions of the dosimetric material within the dosimeter.
 | 4.7.1(a) |  |  |  |  |
| 1. Dosimeter materials and holders shall be acceptance tested before being placed into service.
 | 4.7.1(b) |  |  |  |  |
| 1. The impacts of the following system characteristics shall be determined. 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
* batch homogeneity
 | 4.7.1(c) |  |  |  |  |
| 1. Fading of dosimeter materials under normal conditions shall be determined for two times the period of intended use, not to exceed 6 months past the period of intended use.
 | 4.7.1(d) |  |  |  |  |
| 1. Dosimeters placed into service shall be checked according to a defined schedule to ensure all necessary components are in place. 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.
 | 4.7.1(e) |  |  |  |  |
| 1. Loading of dosimeters shall be carried out in a well-defined order to ensure the dosimeter is in compliance with the design specification and prevent confusion in handling visually similar elements. Precautions shall be taken to avoid optical fading and non-radioactive contamination of the phosphor or the detector.
 | 4.7.1(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.
 | 4.7.1(g) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **OSL Dosimeters (OD)** |  |  |  |  |  |
| 1. Operators of dosimetry processing equipment (i.e., OSL readers, annealing light systems) must understand the operating conditions and critical functions of the equipment, including recognition and resolution of equipment failures.
 | 4.3(b) |  |  |  |  |
| 1. A positive system for identifying and tracking all dosimeters through the processing cycle shall be established.
 | 4.7.2(a) |  |  |  |  |
| 1. Dosimeter reader operation and stability shall be verified before use with quality control dosimeters and measurement of system internal parameters.
 | 4.7.2(b) |  |  |  |  |
| 1. Records shall indicate that dose measurements are made only with stable equipment.
 | 4.7.2(b) |  |  |  |  |
| 1. Annealing of dosimeters shall be conducted in a reproducible manner.
 | 4.7.2(c) |  |  |  |  |
| 1. The annealing technical basis shall be documented to demonstrate the upper dose range limit for which annealing may be performed.
 | 4.7.2(c) |  |  |  |  |
| 1. Quality Control and unirradiated dosimeters shall be used routinely to identify reader processing problems.
 | 4.7.2(d) |  |  |  |  |
| 1. Each processing protocol shall provide for interspersing quality control dosimeters.
 | 4.7.2(d) |  |  |  |   |
| 1. Records shall demonstrate reproducibility for the irradiation method used for irradiation quality control dosimeters.
 | 4.7.2(d) |  |  |  |  |
| 1. Unirradiated and quality control dosimeter use frequency shall be determined based upon the total number of dosimeters processed, equipment stability, type of quality control checks, or other suitable method.
 | 4.7.2(d) |  |  |  |  |
| 1. Blind testing shall be conducted to validate the overall performance of the dosimetry system.
 | 4.7.2(e) |  |  |  |  |
| 1. The blind testing program shall consist of the use of dosimeters irradiated by NIST traceable sources or radiation generating devices to doses that are unknown to the processor.
 | 4.7.2(e) |  |  |  |  |
| 1. Exposures to blind test dosimeters shall include those sources and x-ray beams for which the program is accredited.
 | 4.7.2(e) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **OSL Dosimeters (OD)** |  |  |  |  |  |
| 1. Procedures exist that describe steps to be taken in the event that blind testing results are outside of pre-established criteria.
 | 4.7.2(e) |  |  |  |  |
| 1. The dosimetry algorithm shall be documented in sufficient detail to indicate its validity for dose interpretation.
 | 4.7.2(f) |  |  |  |  |
| 1. Documentation shall indicate the algorithm name and version, and include
* Fundamental data for creating and testing;
* Uncertainty analysis of the algorithm;
* Process controls used for algorithm development; and
* Attributes and limitations of the algorithm.
 | 4.7.2(f) |  |  |  |  |
| 1. Deviations from processing procedures, equipment or facilities shall be verified to ensure no degradation of performance has occurred.
 | 4.7.2(g) |  |  |  |  |
| 1. When any OSL dosimeter is processed prior to its processing for dose of record, equipment calibration protocols shall not be less restrictive than the manufacturer’s prescribed requirements.
 | 4.7.3 |  |  |  |  |
| 1. Personnel performing interim processing activities shall meet the requirements of section 4.3 of DOE-STD-1095-2018.
 | 4.7.3 |  |  |  |  |
| 1. When OSL dosimeters are processed for interim reads, the program shall have documentation of signal depletion as a function of the number of times the OSL dosimeter is processed.
 | 4.7.3 |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Solid State Track Etch Dosimeters (TE)** |  |  |  |  |  |
| 1. A design specification shall be established for each dosimeter model and configuration. The specifications shall include acceptance criteria for dosimeter materials and holders, any filter material used, the areal density (mg/cm2) of the material, and the positions of the dosimetric material within the dosimeter.
 | 4.7.1(a) |  |  |  |  |
| 1. Dosimeter material and holders shall be acceptance tested before being placed into service.
 | 4.7.1(b) |  |  |  |  |
| 1. The impacts of the following system characteristics shall be determined. 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
* batch homogeneity
 | 4.7.1(c) |  |  |  |  |
| 1. Dosimeters placed into service shall be checked according to a defined schedule to ensure all necessary components are in place. A screening procedure shall be used to ensure dosimetry materials, including sensitive elements, are consistent with the dosimeter design. Procedures shall include the foil type and sensitivity.
 | 4.7.1(e) |  |  |  |  |
| 1. Loading of dosimeters shall be carried out in a well-defined order to ensure the dosimeter is in compliance with the design specification and prevent confusion in handling visually similar elements.
 | 4.7.1(f) |  |  |  |   |
| 1. If a dosimeter is used in radiation fields it is not designed for the effect of the radiation not intended to be measured shall be determined.
 | 4.7.1(g) |  |  |  |  |
| 1. A positive system for identifying and tracking all dosimeters through the processing cycle shall be established.
 | 4.7.2(a) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Solid State Track Etch Dosimeters (TE)** |  |  |  |  |  |
| 1. Operators of dosimetry processing equipment (i.e., electrochemical etch chambers, chemical etch baths, automated track counters) must understand the operating conditions and critical functions of the equipment, including recognition and resolution of equipment failures.
 | 4.3(b) |  |  |  |  |
| 1. Etch parameters (e.g., temperature, voltage, frequency, time) are routinely monitored to verify stability.
 | 4.7.2(b) |  |  |  |  |
| 1. Stability of track counting and analysis equipment shall be verified before use with quality control dosimeters and measurement of system internal parameters.
 | 4.7.2(b) |  |  |  |  |
| 1. Records shall indicate that dose measurements are made only with stable equipment.
 | 4.7.2(b) |  |  |  |  |
| 1. Quality Control and unirradiated dosimeters shall be used routinely to identify processing problems.
 | 4.7.2(d) |  |  |  |  |
| 1. Each processing protocol shall provide for interspersing quality control dosimeters.
 | 4.7.2(d) |  |  |  |  |
| 1. Records shall demonstrate reproducibility for the irradiation method used for irradiating quality control dosimeters.
 | 4.7.2(d) |  |  |  |  |
| 1. Unirradiated and quality control dosimeter use frequency shall be determined based upon the total number of dosimeters processed, equipment stability, type of quality control checks, or other suitable method.
 | 4.7.2(d) |  |  |  |  |
| 1. Blind testing shall be conducted to validate the overall performance of the dosimetry system.
 | 4.7.2(e) |  |  |  |  |
| 1. The blind testing program shall consist of the use of dosimeters irradiated by NIST traceable sources or radiation-generating devices to doses that are unknown to the processor.
 | 4.7.2(e) |  |  |  |  |
| 1. Exposures to blind test dosimeters shall include those sources for which the program is accredited.
 | 4.7.2(e) |  |  |  |  |
| 1. Procedures exist that describe the steps to be taken in the event that blind testing results are outside of pre-established criteria.
 | 4.7.2(e) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Solid State Track Etch Dosimeters (TE)** |  |  |  |  |  |
| 1. The dosimetry algorithm shall be documented in sufficient detail to indicate its validity for dose interpretation.
 | 4.7.2(f) |  |  |  |  |
| 1. Documentation shall indicate algorithm name and version, and include
* Fundamental data for creating and testing;
* Uncertainty analysis of the algorithm;
* Process controls used for algorithm development; and
* Attributes and limitations of the algorithm
 | 4.7.2(f) |  |  |  |  |
| 1. Deviations from processing procedures, equipment or facilities shall be verified to ensure no degradation of performance has occurred.
 | 4.7.2(g) |  |  |  |  |

| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
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| **YES** | **NO** | **N/A** |
| **Maintenance and Calibration (C)** |  |  |  |  |  |
| 1. A preventative maintenance program for equipment used to process dosimeters or perform quality control checks shall be implemented.
 | 4.8(a) |  |  |  |  |
| 1. Equipment used for dosimeter processing shall be calibrated periodically or whenever the accuracy of the equipment is suspect. Calibration procedures shall identify required accuracy and define the methods and frequency for checking accuracy. Calibration procedures shall not be less restrictive than the manufacturer’s prescribed requirements. A technical basis shall be developed when the calibration techniques differ from manufacturer recommendations or when calibration frequency is not described by the manufacturer.
 | 4.8(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;
* The range of the calibration or verification;
* The resolution of the instrument and its allowable error;
* Calibration or verification date and schedule;
* Date and result of last calibration;
* Identity of the laboratory individual or external service responsible for calibration;
* Source or reference standard and traceability; and
* Environmental conditions
 | 4.8(c) |  |  |  |  |
| 1. Equipment shall be properly identified to correlate with calibration records and maintenance logs.
 | 4.8(d) |  |  |  |  |
| 1. The energy response for each type or model of dosimeter shall be characterized for all radiation categories and exposure ranges for which it is to be used.
 | 4.8(e) |  |  |  |  |
| 1. All calibration and characterizations shall be performed using reference standards traceable to the National Institute of Standards and Technology (NIST) or standards maintained by an equivalent national standards authority.
 | 4.8(f) |  |  |  |  |
| 1. All processing equipment calibration, verification, and maintenance practices shall be documented.
 | 4.8(g) |  |  |  |  |
| 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.
 | 4.8(h) |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Reporting (R)** |  |  |  |  |  |
| 1. The dose report (initial report from the dosimetry processor or other records) includes:
* Processor name and address, if different from accredited program;
* Name of accredited program;
* Pertinent dates for the wear period and the identification of dosimeters;
* Processor and accredited program identification codes, as appropriate;
* An explanation of any deviation from routine processing procedures if the deviation could affect the reported dose;
* The signature of or reference to the technical lead (however named); and
* Software version(s) of the dose algorithm(s) used.
 | 4.9 |  |  |  |  |

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| **LINE OF INQUIRY** | **CRITERIA** | **REQUIREMENTS MET?** | **COMMENTS/DEMONSTRATION OF CONFORMANCE** |
| **YES** | **NO** | **N/A** |
| **Guidance for Programs that use** **Service Providers (SP)** |  |  |  |  |  |
| 1. A copy of the work agreement with the service provider, including any agreed upon commitments, shall be available for review.
 | Appendix B paragraph. 2 |  |  |  |  |
| 1. Staff shall have sufficient qualifications and experience to be able to:
* Sufficiently assess the capabilities and limitations of the service provider;
* Validate dosimeter results used to determine dose-of-record;
* Provide oversight of the service provider including the review of quality control data and conduct on-site assessments;
* Identify error trends and anomalous data; and
* Conduct quality assurance assessments.
 | Appendix B paragraph 3 |  |  |  |  |
| 1. A technical basis for the selected performance testing categories or subcategories shall be available.
 | Appendix B paragraph 4 |  |  |  |  |
| 1. The program shall have a procedure for conducting quality assurance assessments of the service provider; including on-site audits, QC reviews, and blind audit dosimeters. The procedures shall also describe how findings are identified and corrected.
 | Appendix B paragraph 5 |  |  |  |  |
| 1. The program shall have a procedure for handling and shipping of dosimeters. The procedure shall include details on maintaining dosimeter chain-of-custody and assessment of any transit dose.
 | Appendix B paragraph 6 |  |  |  |  |

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| Assessor |  | Date |

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| Assessor |  | Date |