BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.2.d	Are calculations of uncertainty associated with incomplete/missed photon monitoring dose appropriate and correct? (§2.1.2.4)			
C.2.2.e	Are calculations associated with the occupational medical dose component of photon dose appropriate and correct? (§2.1.3)			
C.2.2.f	Are calculations of uncertainty associated with the occupational medical dose component of photon dose appropriate and correct? (§2.1.3.3)			
C.2.2.g	Are calculations associated with the environmental dose component of photon dose appropriate and correct? (§2.1.4)			
C.2.2.h	Are calculations of uncertainty for the environmental dose component of photon dose appropriate and correct? (§2.1.4.3)			
C.2.3 C.2.3.a	<u>Photon Dose Reconstruction With **NO** Monitoring Data</u>: Are calculations of reconstructed photon dose using co-worker data appropriate and correct? (§3.1.1)			
C.2.3.b	Are calculations of uncertainty associated with reconstructed photon dose using co-worker data appropriate and correct? (§2.1.1.3)			
C.2.3.c	Are calculations of reconstructed photon dose using survey data appropriate and correct? (§3.1.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.3.d	Are calculations of uncertainty associated with reconstructed photon dose using survey data appropriate and correct? (§3.1.2.3)			
C.2.3.e	Are calculations of reconstructed photon dose using source term data appropriate and correct? (§3.1.3)			
C.2.3.f	Are calculations of uncertainty associated with reconstructed photon dose using source term data appropriate and correct? (§3.1.3.3)			
C.2.3.g	Are calculations of reconstructed photon dose using control limits appropriate and correct? (§3.1.4)			
C.2.3.h	Are calculations of uncertainty associated with reconstructed photon dose using control limits appropriate and correct? (§3.1.4.3)			
C.2.4 C.2.4.a	Photon Dose Conversion to Organ Dose: Are calculations for converting monitored photon dose to organ dose appropriate and correct? (§4.1.1)			
C.2.4.b	Are calculations for converting survey/source term data associated with photon dose to organ dose appropriate and correct? (§4.1.2)			
C.2.4.c	Are calculations used in the energy simplification of ICRP 74 dose conversion factors for input into NIOSH-IREP appropriate and correct? (§4.1.3)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.4.d	Are calculations of uncertainty associated with the energy simplification process appropriate and correct? (§4.5.1)			
C.2.5 C.2.5.a	Neutron Dose Reconstruction Using Monitoring Data: Are calculations of neutron dose using personal monitoring data (dosimeters) appropriate and correct? (§2.2.1)			
C.2.5.b	Are calculations of uncertainty associated with neutron personal monitoring data appropriate and correct? (§2.2.1.3)			
C.2.5.c	Are calculations of dose associated with incomplete/missing neutron monitoring data appropriate and correct? (§2.2.2)			
C.2.5.d	Are calculations of uncertainty associated with incomplete/missed neutron monitoring dose appropriate and correct? (§2.2.2.4)			
C.2.6 C.2.6.a	Neutron Dose Reconstruction With NO Monitoring Data: Are calculations of reconstructed neutron dose using co-worker data appropriate and correct? (§3.2.1)			
C.2.6.b	Are calculations of uncertainty associated with reconstructed neutron dose using co-worker data appropriate and correct? (§2.2.1.3)			
C.2.6.c	Are calculations of reconstructed neutron dose using survey data appropriate and correct? (§3.2.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.6.d	Are calculations of uncertainty associated with reconstructed neutron dose using survey data appropriate and correct? (§3.2.2.3)			
C.2.6.e	Are calculations of reconstructed neutron dose using source term data appropriate and correct? (§3.2.3)			
C.2.6.f	Are calculations of uncertainty associated with reconstructed neutron dose using source term data appropriate and correct? (§3.2.3.3)			
C.2.7 C.2.7.a	Neutron Dose Conversion to Organ Dose: Are calculations for converting area monitoring data associated with neutron dose to organ dose appropriate and correct? (§4.2.1)			
C.2.7.b	Are calculations for converting personal monitoring data associated with neutron dose to organ dose appropriate and correct? (§4.2.2)			
C.2.8 C.2.8.a	Electron Dose Reconstruction Using Monitoring Data: Are calculations of electron dose using dosimeters appropriate and correct? (§2.3.1)			
C.2.8.b	Are calculations of uncertainty for the beta dosimetry results appropriate and correct? (§2.3.1.3)			
C.2.8.c	Are calculations of dose for incomplete/ missing electron monitoring records appropriate and correct? (§2.3.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.8.d	Are calculations of uncertainty associated with incomplete/missed electron monitoring dose appropriate and correct? (§2.3.2.3)			
C.2.8.e	Are dose calculations of skin contamination appropriate and correct? (§2.3.3.2.2)			
C.2.8.f	Are calculations of uncertainty associated with the dose from skin contamination appropriate and correct? (§2.3.3.3)			
C.2.9 C.2.9.a	Electron Dose Reconstruction With **NO** Monitoring Data: Are calculations of reconstructed electron dose using co-worker data appropriate and correct? (§3.3.1)			
C.2.9.b	Are calculations of uncertainty associated with reconstructed electron dose using co-worker data appropriate and correct? (§2.2.1.3)			
C.2.9.c	Are calculations of reconstructed electron dose using survey data appropriate and correct? (§3.3.2)			
C.2.9.d	Are calculations of uncertainty associated with reconstructed electron dose using survey data appropriate and correct? (§3.3.2.3)			
C.2.9.e	Are calculations of reconstructed electron dose using source term data appropriate and correct? (§3.3.3)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.9.f	Are calculations of uncertainty associated with reconstructed electron dose using source term data appropriate and correct? (§3.3.3.3)			
C.2.9.g	Are calculations of reconstructed electron dose to non-routine radiological workers using radiological control limits appropriate and correct? (§3.3.4)			
C.2.9.h	Are calculations of uncertainty associated with reconstructed electron dose using radiological control limits appropriate and correct?			
C.2.10	Electron Dose Conversion to Organ Dose: Are calculations for converting electron dose to organ dose appropriate and correct? (§4.3)			
C.2.11 C.2.11.a	Annual Organ Dose and Distribution: Are annual organ dose calculations for photon energies <30 keV appropriate and correct? (§5.1.1)			
C.2.11.b	Are uncertainty distributions for annual organ doses associated with photon energies <30 keV appropriate and correct? (§5.1.2)			
C.2.11.c	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for photon energies <30 keV? (§5.2)			
C.2.11.d	Are annual organ dose calculations for photon energies between 30 and 250 keV appropriate and correct? (§5.1.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.11.e	Are uncertainty calculations for annual organ doses associated with photon energies between 30 keV and 250 keV appropriate and correct? (§5.1.2)			
C.2.11.f	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for photon energies between 30 keV and 250 keV? (§5.2)			
C.2.11.g	Are annual organ dose calculations for photon energies >250 keV appropriate and correct? (§5.1.1)			
C.2.11.h	Are uncertainty calculations for annual organ doses associated with photon energies >250 keV appropriate and correct? (§5.1.2)			
C.2.11.i	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for photon energies >250 keV? (§5.2)			
C.2.11.j	Are annual organ dose calculations for neutron energies <10 keV appropriate and correct? (§5.1.1)			
C.2.11.k	Are uncertainty calculations for annual organ doses associated with neutron energies <10 keV appropriate and correct? (§5.1.2)			
C.2.11.l	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for neutron energies <10 keV? (§5.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.11.m	Are annual organ dose calculations for neutron energies between 10 and 100 keV appropriate and correct? (§5.1.1)			
C.2.11.n	Are uncertainty calculations for annual organ doses associated with neutron energies between 10 keV and 100 keV appropriate and correct? (§5.1.2)			
C.2.11.o	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for neutron energies between 10 keV and 100 keV? (§5.2)			
C.2.11.p	Are annual organ dose calculations for neutron energies between 0.1 and 2.0 MeV appropriate and correct? (§5.1.1)			
C.2.11.q	Are uncertainty calculations for annual organ doses associated with neutron energies between 0.1 and 2.0 MeV appropriate and correct? (§5.1.2)			
C.2.11.r	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for neutron energies between 0.1 and 2.0 MeV? (§5.2)			
C.2.11.s	Are annual organ dose calculations for neutron energies between 2.0 and 20.0 MeV appropriate and correct? (§5.1.1)			
C.2.11.t	Are uncertainty distributions for annual organ doses associated with neutron energies between 2.0 MeV and 20.0 MeV appropriate and correct? (§5.1.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.2.11.u	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for neutron energies between 2.0 MeV and 20.0 MeV? (§5.2)			
C.2.11.v	Are annual organ dose calculations for neutron energies > 20.0 MeV appropriate and correct? (§5.1.1)			
C.2.11.w	Are uncertainty calculations for organ doses associated with neutron energies >20.0 MeV appropriate and correct? (§5.1.2)			
C.2.11.x	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for neutron energies >20.0 MeV? (§5.2)			
C.2.11.y	Are organ/tissue dose calculations for electron energies >14 keV appropriate and correct? (§5.1.1)			
C.2.11.z	Are uncertainty calculations for organ/tissue dose associated with electron energies >14 keV appropriate and correct? (§5.1.2)			
C.2.11.aa	Has an appropriate total organ dose distribution been determined (normal versus lognormal distribution) for electron energies >14 keV? (§5.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.3 <u>Consistency of External Dose Data</u>: Evaluate whether data were consistent with site radiological monitoring protocols of the time period and determine whether the protocols were adequate for monitoring the external exposure.				
C.3.1	Are external dosimetry data (e.g., monitoring periods, detection limits, etc.) consistent with site radiological monitoring protocols/procedures?			
C.3.2	Were external dosimetry monitoring protocols adequate for assessing external exposure?			
C.3.3	Are external dose estimates based on workplace monitoring data (e.g., surveys, air sampling, fixed location dosimeters) consistent with site workplace monitoring practices/procedures?			
C.3.4	Were site workplace monitoring protocols adequate for assessing external exposure?			
C.3.5	Are assessments of environmental dose consistent with area monitoring procedures/protocols at the site?			
C.3.6	Were environmental dose monitoring protocols adequate for assessing the environmental exposure?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
C.4 <u>Missing/Unmonitored External Dose</u>: Evaluate the treatment of 'missed external dose' and/or 'unmonitored external dose' if relevant to the case.				
C.4.1	Are 'missed/unmonitored' external photon doses reconstructed in accordance with 42 CFR §82.16 and §82.17 and using guidelines and hierarchy of data established in Section 3.1 of OCAS-IG-001?			
C.4.2	Are data adequate for employing commonly used practices/techniques/professional judgments in estimating 'missed/unmonitored' external photon doses?			
C.4.3	Are 'missed/unmonitored' neutron doses reconstructed in accordance with 42 CFR §82.16 and §82.17 and using guidelines and hierarchy of data established in Section 3.2 of OCAS-IG-001?			
C.4.4	Are data adequate for employing commonly used practices/techniques/professional judgments in estimating 'missed/unmonitored' neutron doses?			
C.4.5	Are 'missed/unmonitored' electron doses reconstructed in accordance with 42 CFR §82.16 and §82.17 and using guidelines and hierarchy of data established in Section 3.3 of OCAS-IG-001?			
C.4.6	Are data adequate for employing commonly used practices/techniques/professional judgments in estimating 'missed/unmonitored' electron exposures?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D. INTERNAL DOSE REVIEW PROCESS				
D.1	**Internal Dose Estimate Assumptions: Determine whether all assumptions used in the internal dose determination are appropriate for a remedial compensation program and determine whether, if, and to what extent the benefit of the doubt was resolved in favor of the claimant.** (Parenthetical number represents the section within the "Internal Dose Reconstruction Implementation Guideline" (OCAS-IG-002) that provides detailed methodology for conducting the appropriate portion of the dose reconstruction.)			
D.1.1 D.1.1.a	Preliminary Internal Dose Estimate Efficiency Process: Are assumptions used in the preliminary internal dose efficiency process for determining whether the case falls into a 'clearly high' or 'clearly low' category appropriate? (§6.0)			
D.1.1.b	Are assumptions used to modify the preliminary internal dose estimate efficiency process appropriate for including the case in a 'clearly high' or 'clearly low' category? (§6.3 and §6.5)			
D.1.1.c	Are assumptions used in the preliminary internal dose estimate efficiency process conservative (claimant friendly)?			
D.1.2 D.1.2.a	Preliminary Internal Dose Estimate - Low Dose Potential: Are assumptions used in the recalculation of bioassay values for each radionuclide for which the claimant was monitored appropriate? (§6.1.2)			
D.1.2.b	Are assumptions used in the selection of all potential solubility classes for each radionuclide for which the claimant was monitored appropriate? (§6.1.3)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.2.c	Are assumptions for determining the highest intake associated with each potential solubility class that will produce a predicted bioassay value equal to at least one of the recalculated bioassay values from step §6.1.2 appropriate? (§6.1.4)			
D.1.2.d	Are assumptions used to determine the highest intake (using a constant chronic exposure period) that will produce a predicted bioassay value equal to at least one of the recalculated bioassay values from step §6.1.2 for each potential solubility class appropriate? (§6.1.5)			
D.1.2.e	Are assumptions used in the determination of a scenario for each radionuclide for which the claimant was monitored that produces the highest 50-year committed dose to the organ or concern appropriate? (§6.1.7)			
D.1.2.f	Are assumptions used to determine annual doses to the organ of concern using the scenario selected in step §6.1.7 for each radionuclide for which the claimant was monitored appropriate? (§6.1.8)			
D.1.2.g	When the preliminary PC results in ≥50%, are assumptions used in the refinement of internal estimates appropriate? (§6.1.14 A-D and §6.5)			
D.1.2.h	Are all assumptions used in the 'low dose' preliminary internal dose estimate conservative (claimant friendly)?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.3 D.1.3.a	Preliminary Dose Estimate - High Dose Potential: Are assumptions for the selection of radionuclides that will deliver the most dose per unit intake or one with the highest bioassay results appropriate? (§6.2.1)			
D.1.3.b	Is the assumption used to determine the date for an inhalation appropriate? (§6.2.2)			
D.1.3.c	Are assumptions associated with the selection of all potential solubility classes appropriate? (§6.2.3)			
D.1.3.d	Are assumptions used to determine the highest intake for each potential solubility class that will not exceed any of the measured bioassay values appropriate? (§6.2.4)			
D.1.3.e	If the acute scenario does not produce a realistic curve, are assumptions used in finding a more reasonable scenario appropriate? (§6.2.5)			
D.1.3.f	Are assumptions used to determine the scenario that produces the lowest 50-year committed dose to the organ of concern appropriate? (§6.2.7)			
D.1.3.g	Are assumptions used to determine the annual doses to the organ of concern appropriate? (§6.2.8)			
D.1.3.h	When the PC calculation results in <50%, are assumptions used in the refinement of internal dose estimates appropriate? (§6.2.11 A-G and §6.5)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.3.i	Are all assumptions used in the 'high dose' preliminary internal dose estimate conservative (claimant friendly)?			
D.1.4 D.1.4.a	Detailed Internal Dose Reconstruction - Key Initial Considerations: Are assumptions used to determine the date of uptake(s) appropriate? (§7.1)			
D.1.4.b	Are assumptions used to determine the route of entry of applicable radionuclides into the body appropriate? (§4.1)			
D.1.4.c	Are assumptions used in the selection of applicable solubility class(es) for each radionuclide appropriate? (§4.3)			
D.1.4.d	Are assumptions used to determine whether the exposure was chronic or acute appropriate?			
D.1.4.e	Are assumptions used to determine particle size of all inhaled radionuclides appropriate? (§4.4)			
D.1.4.f	Are assumptions used to select the applicable ICRP biokinetic model for each radionuclide appropriate? (§2.0)			
D.1.4.g	If more than one ICD code describes organs associated with only one region calculated by ICRP models, are assumptions in the calculation of organ dose appropriate? (§3.1.1)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.4.h	If one ICD code describes organs associated with more than one region calculated by ICRP models, are assumptions in the selection of ICRP region and associated organ dose appropriate? (§3.1.1)			
D.1.4.i	When an organ of interest is not included in the ICRP metabolic model, are assumptions for assigning dose to that organ appropriate? (§3.1.1)			
D.1.4.j	If an ICD code describes a type of lymphatic cancer, are assumptions for assigning organ dose appropriate? (§3.1.1)			
D.1.5 D.1.5.a	Internal Dose Reconstruction Considerations Associated with Bioassay Measurements: Are assumptions used to determine the quantity of each radionuclide for each intake based on bioassay measurement data appropriate? (see example §8.5)			
D.1.5.b	Are assumptions of uncertainty associated with the quantities of each radionuclide for each intake based on bioassay measurement data appropriate? (§7.2)			
D.1.5.c	Are assumptions regarding the capability of the bioassay program in detecting all potential radionuclides of concern appropriate? (§5.1)			
D.1.5.d	Are assumptions regarding the validity of positive results (i.e., determination of a false positive result) appropriate? (§5.1)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.5.e	Are assumptions used to determine missed internal dose associated with bioassay measurements below detection limits appropriate? (§7.3 and §8.3)			
D.1.5.f	Are assumptions used to estimate internal dose when there are gaps in bioassay measurements appropriate? (§6.3)			
D.1.5.g	Are assumptions used in the reconstruction of internal dose using co-worker data appropriate? (§5.1)			
D.1.5.h	Are assumptions used to reconstruct internal dose using bioassay measurements conservative (claimant friendly)?			
D.1.6 D.1.6.a	<u>Internal Dose Reconstruction Considerations Associated with Workplace Monitoring Data</u>: Are assumptions used to determine the radionuclide(s) of concern for each intake using workplace monitoring data (e.g., air samples, contamination surveys, etc.) appropriate? (§5.2)			
D.1.6.b	Are assumptions used to estimate the concentration of each radionuclide in the breathing zone using workplace monitoring data (e.g., air samples, contamination surveys, etc.) appropriate? (§5.2)			
D.1.6.c	Are assumptions regarding the use of respirators and respiratory protection factors appropriate? (§5.2)			
D.1.6.d	Are assumptions regarding the effectiveness of the respirator program (i.e., whether a qualitative fit test was performed and whether the respirator was worn during the time of intake) appropriate? (§5.2)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.6.e	Are assumptions used to compare, confirm, or validate internal dose estimates based on workplace monitoring with any other supporting information sources appropriate? (§5.2)			
D.1.6.f	Are assumptions used to estimate internal dose using workplace monitoring data conservative (claimant friendly)?			
D.1.6.g	Are assumptions associated with uncertainty surrounding the estimated intake quantity using workplace monitoring data conservative (claimant friendly)?			
D.1.7 D.1.7.a	Internal Dose Reconstruction Considerations Associated with Source Term Data: Are assumptions used to determine the radionuclide(s) of concern for each intake using source term data (e.g., type of material in area or handled) appropriate? (§5.3)			
D.1.7.b	Are assumptions used to determine the concentration of each radionuclide in the breathing zone using source term data (e.g., dispersible quantity of material, resuspension factors, etc.) appropriate? (§5.3)			
D.1.7.c	Are assumptions used to compare, confirm, or validate internal dose estimates based source term data with any other supporting information sources appropriate? (§5.3)			
D.1.7.d	Are assumptions used to estimate internal dose using workplace monitoring data conservative (claimant friendly)?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.1.7.e	Are assumptions associated with uncertainty surrounding the estimated intake quantity using workplace monitoring data conservative (claimant friendly)?			
D.1.8 D.1.8.a	Occupational Radon Exposure: Are assumptions used to determine dose from occupational radon exposure appropriate?			
D.1.8.b	Are assumptions associated with uncertainty surrounding the radon dose estimate appropriate?			
D.1.8.c	Are assumptions used to determine dose from occupational radon exposure conservative (claimant friendly)?			
D.1.8.d	Are assumptions used to assess the uncertainty surrounding the occupational radon dose conservative (claimant friendly)?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.2	**Internal Dose Calculations: Verify internal dose calculations are appropriate for purposes of determination of POC.** (Parenthetical number represents the section within the "Internal Dose Reconstruction Implementation Guideline" (OCAS-IG-002) that provides detailed methodology for conducting the appropriate portion of the dose reconstruction.)			
D.2.1 D.2.1.a	Preliminary Internal Dose Estimate - Low Dose Potential: Are recalculations of bioassay values appropriate and correct? (§6.1.2)			
D.2.1.b	Are calculations for determining the highest intake associated with each potential solubility class that will produce a predicted bioassay value equal to at least one of the recalculated bioassay values from step §6.1.2 appropriate and correct? (§6.1.4)			
D.2.1.c	Are calculations for determining the highest intake (using a constant chronic exposure period) that will produce a predicted bioassay value equal to at least one of the recalculated bioassay values from step §6.1.2 for each potential solubility class appropriate and correct? (§6.1.5)			
D.2.1.d	Are calculations for determining a scenario (for each radionuclide for which the claimant was monitored) that produces the highest 50-year committed dose to the organ of concern appropriate and correct? (§6.1.7)			
D.2.1.e	Are calculations for determining annual doses to the organ of concern using the scenario selected in step §6.1.7 (for each radionuclide for which the claimant was monitored) appropriate and correct? (§6.1.8)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.2.1.f	When the preliminary PC results in ≥50%, are calculations used in the refinement of internal estimates appropriate and correct? (§6.1.14 A-D and §6.5)			
D.2.2 D.2.2.a	Preliminary Internal Dose Estimate - High Dose Potential: Are calculations for determining the highest intake for each potential solubility class that will not exceed any of the measured bioassay values appropriate and correct? (§6.2.4)			
D.2.2.b	If the acute scenario does not produce a realistic curve, are calculations used in finding a more reasonable scenario appropriate? (§6.2.5)			
D.2.2.c	Are calculations for determining the scenario that produces the lowest 50-year committed dose to the organ of concern appropriate and correct? (§6.2.7)			
D.2.2.d	Are calculations for determining the annual internal doses to the organ of concern appropriate and correct? (§6.2.8)			
D.2.2.e	When the PC calculation results in <50%, are calculations to refine internal dose estimates appropriate and correct? (§6.2.11 A-G and §6.5)			
D.2.3 D.2.3.a	Detailed Internal Dose Reconstruction: Are calculations for determining the quantity of each radionuclide for each intake based on bioassay measurement data appropriate and correct? (see example §8.5)			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.2.3.b	Are uncertainty calculations associated with the quantities of each radionuclide for each intake based on bioassay measurement data appropriate and correct? (§7.2 and §8.7)			
D.2.3.c	Are calculations for determining missed internal dose associated with bioassay measurements below detection limits appropriate and correct? (§7.3)			
D.2.3.d	Are calculations for estimating internal dose when there are gaps in bioassay measurements appropriate and correct? (§6.3)			
D.2.3.e	Are calculations for reconstructed internal dose using co-worker data appropriate and correct? (§5.1)			
D.2.3.f	Are uncertainty calculations associated with the reconstruction of internal dose using co-worker data appropriate and correct?			
D.2.3.g	Are calculations to estimate the concentration of each radionuclide in the breathing zone using workplace monitoring data (e.g., air samples, contamination surveys, etc.) appropriate and correct? (§5.2)			
D.2.3.h	Are calculations to estimate internal dose using workplace monitoring data appropriate and correct?			
D.2.3.i	Are uncertainty calculations associated with estimating intake quantities using workplace monitoring data appropriate and correct?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.2.3.j	Are calculations to determine the concentration of each radionuclide in the breathing zone using source term data (e.g., dispersible quantity of material, resuspension factors, etc.) appropriate and correct? (§5.3)			
D.2.3.k	Are calculations to estimate internal dose using workplace monitoring data appropriate and correct?			
D.2.3.l	Are uncertainty calculations associated with the estimated intake quantity using workplace monitoring data appropriate and correct?			
D.2.3.m	Are calculations to determine dose from occupational radon exposure appropriate and correct? (§7.4)			
D.2.3.n	Are uncertainty calculations associated with occupational radon exposure appropriate and correct? (§7.4)			
D.2.4	Are all internal dose calculations performed in accordance with 42 CFR §82.18?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.3 Consistency of Internal Dose Data: Evaluate whether data were consistent with site radiological monitoring protocols of the time period and determine whether the protocols were adequate for monitoring the internal exposure.				
D.3.1	Are internal bioassay measurement data (e.g., types of bioassay, detection limits, etc.) consistent with site radiological monitoring protocols/procedures of the time?			
D.3.2	Were internal bioassay monitoring programs adequate for assessing internal exposure?			
D.3.3	Are the frequencies and types of workplace sampling and surveys (e.g., air sampling, contamination surveys) consistent with site workplace monitoring practices/procedures of the time?			
D.3.4	Were site workplace monitoring protocols adequate for assessing internal exposure?			
D.3.5	Is the use of respirators consistent with protocols defined in the respiratory protection program of the time?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
D.4 Missing/Unmonitored Internal Dose: Evaluate the treatment of 'missed internal dose' and/or 'unmonitored internal dose' if relevant to the case.				
D.4.1	Are 'missed/unmonitored' internal doses reconstructed in accordance with 42 CFR §82.16 and using guidelines established in OCAS-IG-002?			
D.4.2	Are the types of information used to substitute/supplement 'missed/unmonitored' internal doses reconstructed in accordance with specifications in 42 CFR §82.17 and using *guidance in* OCAS-IG-002?			
D.4.3	Were all relevant factors surrounding the claimant's exposure scenario (e.g., distance from source, work activities, etc.) properly taken into account when evaluating 'missed/unmonitored' internal dose?			
D.4.4	Was the bioassay program at the time considered when selecting the most appropriate method for estimating 'missed/unmonitored' *internal dose*?			
D.4.5	Are data adequate for employing commonly used practices/techniques/professional judgments in estimating 'missed/unmonitored' internal doses?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
E. NIOSH PROCEDURE/METHODOLOGY REVIEW PROCESS				
E.1 Review of NIOSH Methods and/or Procedures: The review of each dose reconstruction shall include an evaluation of all relevant portions of the methods and/or procedures used by NIOSH.				
E.1.1 E.1.1a	External Dose Technical Basis Documents/Methods: Are the technical basis documents used in reconstructing external radiation doses adequate and appropriate?			
E.1.1b	Are methods for estimating 'missed,' 'incomplete,' and/or 'unmonitored' external dose adequate and appropriate?			
E.1.1.c	Are statistical approaches developed for multiple external dose reconstructions appropriate?			
E.1.1.d	Are procedures used for determining whether data is sufficient to make a reasonable external dose estimate appropriate?			
E.1.1.e	Are methods/procedures used for substituting external exposure information for unavailable or incomplete information adequate and appropriate?			
E.1.1.f	Are methods for estimating uncertainty in dose associated with external dose reconstructions on a facility and time specific basis appropriate?			
E.1.1.g	Are appropriate methodologies used to resolve uncertainty estimates associated with external dose in favor of the claimant?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
E.1.1.h	Are methods and/or statistical software used for determining uncertainty distributions surrounding external organ dose adequate and appropriate?			
E.1.2 E.1.2.a	Internal Dose Technical Basis Documents/Methods: Are the technical basis documents (e.g., ICRP reports, etc.) used in reconstructing internal radiation doses adequate and appropriate?			
E.1.2.b	Are methods for estimating 'missed,' 'incomplete,' and/or 'unmonitored' internal dose adequate and appropriate?			
E.1.2.c	Are statistical approaches developed for multiple internal dose reconstructions appropriate?			
E.1.2.d	Are procedures used for determining whether data is sufficient to make a reasonable internal dose estimate appropriate?			
E.1.2.e	Are methods/procedures used for substituting internal exposure data for unavailable or incomplete information adequate and appropriate?			
E.1.2.f	Are methods for estimating uncertainty in dose associated with internal dose reconstructions on a facility and time specific basis appropriate?			
E.1.2.g	Are appropriate methodologies used to resolve uncertainty estimates associated with internal dose in favor of the claimant?			

BASIC INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
E.1.3 E.1.3.a	Work History Interview: Are procedures used for work history phone interview adequate and appropriate?			
E.1.3.b	Is the questionnaire used for the work history phone interview adequate, appropriate, and complete?			
E.1.4 E.1.4.a	Evaluation of Contractor: Are NIOSH methods, procedures, and performance analyses used to evaluate, analyze and validate all steps of the contractor's dose reconstruction process appropriate?			
E.1.4.b	Are NIOSH methods, procedures, and performance analyses for evaluating, analyzing and validating the contractor's tracking system for each step of the dose reconstruction process appropriate?			
E.1.4.c	Are NIOSH's performance analyses conducted on a frequency to adequately monitoring contractor progress?			
E.1.4.d	Are NIOSH's methods and procedures adequate to ensure any data inconsistencies/conflicts are resolved in an appropriate manner?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST

(Note: The Basic Individual Dose Reconstruction Review checklist should be completed prior to the Advanced Review)

Audit Number:	Claim Number:	Date:	Page of

Auditor(s)/Area of Review:

Dose Reconstruction Analysts(s)/Area of Dose Reconstruction (External/Internal):

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
	F. ADDITIONAL DATA GATHERING REVIEWS			
F.1	**<u>Review of Entire Administrative Record</u>: Review the entire administrative record to evaluate if relevant information exists which was not considered by NIOSH.**			
F.1.1	Does the administrative record contain data that are relevant to the reconstruction of external dose, which were not considered by NIOSH?			
F.1.2	Does the administrative record contain data that are relevant to the reconstruction of internal dose, which were not considered by NIOSH?			
F.1.3	Does the administrative record contain data that could be used to evaluate the completeness and adequacy of individual monitoring data, which were not considered by NIOSH?			
F.1.4	Does the administrative record contain data that could be used to evaluate the completeness and adequacy of monitoring programs, which were not considered by NIOSH?			
F.1.5	Does the administrative record contain data that could be used to reconcile discrepancies or uncertainties associated with any aspect of the dose reconstruction, which were not considered by NIOSH?			
F.2	**<u>Review of the Site Profile</u>: Review the relevant aspects of the Site Profile as they apply to the individual case and evaluate the adequacy and completeness of the site profile and evaluate whether the information from the site profile is consistent with the information used for the individual dose estimate.**			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
F.2.1	Are data in the Site Profile related to facility operations and processes, which are applicable to the claimant's case, adequate and complete?			
F.2.2	Are data in the Site Profile related to radiological source term characterization, which are applicable to the claimant's case, adequate and complete?			
F.2.3	Are data in the Site Profile related to workplace conditions and monitoring practices, which are applicable to the claimant's case, adequate and complete?			
F.2.4	Are data in the Site Profile related to incidents/accidents involving radiological exposures, which are applicable to the claimant's case, adequate and complete?			
F.2.5	Are relevant Site Profile data consistent with information used to reconstruct external dose?			
F.2.6	Are relevant Site Profile data consistent with information used to reconstruct internal dose?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
F.3	**Review of All Relevant Sources of Data: Evaluate whether, to the extent practicable, all relevant sources of data (e.g., DOE, AWE, CDC, EML, NRC, EPA, External Health and Safety Regulators, GAO, DNFSB, Congressional Hearing Records, other research program, research publications, publication regarding the history of the DOE complex, or administrative/court records) were identified, evaluated and where appropriate, included within the Site Profile database and, where appropriate, were used in the assessment of the individual dose reconstruction case.**			
F.3.1	Has a thorough search been conducted to identify all potentially relevant sources of data as they apply to the individual dose reconstruction case? (Note: This may require conducting interviews with employees, employee representatives, site 'experts,' etc.)			
F.3.2	Have relevant data identified in the literature search been evaluated and, where appropriate, included in the Site Profile database?			
F.3.3	Have relevant data identified in the literature search been used in the assessment of the individual dose reconstruction, where appropriate?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
G. ADDITIONAL INTERVIEW AND CLAIMANT DOCUMENTATION REVIEWS				
G.1	**Interview/Claimant Documentation Review: Evaluate the effectiveness of the phone interview in ascertaining relevant work history information.**			
G.1.1	Was the phone interview effective in confirming applicable elements of the employment history as included in the claims package provided by DOL?			
G.1.2	Was the phone interview effective in identifying any relevant information on employment history that may have been omitted?			
G.1.3	Was the phone interview effective in confirming or supplementing monitoring data provided in the initial radiation exposure record?			
G.1.4	Was the phone interview effective in identifying undocumented radiation exposures as a result of work tasks, production processes, radiological protection and monitoring practices, and/or incidents?			
G.1.5	Was the phone interview effective in identifying co-workers and/or other witnesses who could potentially supplement or confirm radiation exposure information and/or work experiences in behalf of the covered worker?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
G.2 <u>Adequacy of Research for Co-Workers/Historical Records</u>: Evaluate whether, for the cases involving survivors, there has been an adequate effort to research co-located workers and other historical records to characterize the individual's work history.				
G.2.1	Does it appear that there was an adequate effort to identify, locate, and contact co-worker, supervisors, and/or any other individuals identified by the claimant who could provide data that would supplement/confirm the dose reconstruction?			
G.2.2	Does it appear that there was an adequate effort to research historical records to characterize the work history, radiation incidents, and other relevant information provided by the claimant?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
H. ADDITIONAL EXTERNAL DOSE RECONSTRUCTION REVIEWS				
H.1	**Consistency of Data: Evaluate whether the external dose estimate is consistent with relevant radiological information within the NIOSH site profile.**			
H.1.1	Is there reasonable consistency between assumptions used to estimate external dose and process information (e.g., radionuclides and quantities present and processed) provided in the Site Profile?			
H.1.2	Is there reasonable consistency between assumptions used to estimate external dose and routine radiation monitoring practices identified in the Site Profile?			
H.1.3	Is there reasonable consistency between assumptions used to estimate external dose and routine protective measures used at the site (e.g., glove boxes, shielding, etc.) identified in the Site Profile?			
H.2	**Comparison of Case Information: Compare case information and assumptions associated with external dose with relevant co-worker case information and assumptions associated with external dose for consistency.**			
H.2.1	Is there consistency between monitoring data used to calculate external dose for the covered worker and monitoring data used to calculate external dose for a relevant co-worker case?			
H.2.2	Is there consistency between assumptions used to reconstruct unmonitored external dose for the covered worker and assumptions used to reconstruct unmonitored external dose for a relevant co-worker case?			

ADVANCED INDIVIDUAL DOSE RECONSTRUCTION REVIEW CHECKLIST			
Audit Number:	**Claim Number:**	**Date:**	**Page of**

Area of Review	Description of Technical Elements of Review	Yes/No/ NA	Comments	Initials
I. ADDITIONAL INTERNAL DOSE RECONSTRUCTION REVIEWS				
I.1	**Consistency of Data: Evaluate whether the inter dose estimate is consistent with relevant radiological information within the NIOSH site profile (e.g., air monitoring, wipe data are consistent with bioassay results).**			
I.1.1	Is there reasonable consistency between assumptions used to estimate internal dose and process information (e.g., radionuclides and quantities present and processed, production processes) provided in the Site Profile?			
I.1.2	Is there reasonable consistency between assumptions used to estimate internal dose and routine radiation monitoring practices (e.g., air monitoring, contamination surveys, etc.) identified in the Site Profile?			
I.1.3	Is there reasonable consistency between assumptions used to estimate internal dose and routine protective measures (e.g., respirators, ventilation, etc.) identified in the Site Profile?			
I.2	**Comparison of Case Information: Compare case information and assumptions associated with internal dose with relevant co-worker case information and assumptions associated with internal dose for consistency.**			
I.2.1	Is there consistency between monitoring data used to calculate internal dose for the covered worker and monitoring data used to calculate internal dose for a relevant co-worker case?			
I.2.2	Is there consistency between assumptions used to reconstruct unmonitored internal dose for the covered worker and assumptions used to reconstruct unmonitored internal dose for a relevant co-worker case?			