Lessons Learned from Assessments of Occupational Injury and Illness Recordkeeping and Reporting at U.S. Department of Energy Sites During Calendar Years 2022-2024

June 2025

U.S. DEPARTMENT of ENERGY | Office of Enterprise Assessments

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Acronyms

CAIRS	Computerized Accident/Incident Reporting System
CFR	Code of Federal Regulations
CNS	Consolidated Nuclear Security, LLC
CRAD	Criteria and Review Approach Document
DART	Days Away, Restricted or Transferred
DOE	U.S. Department of Energy
EA	Office of Enterprise Assessments
EHSS	Environment, Health, Safety and Security
NETL	National Energy Technology Laboratory
NNSA	National Nuclear Security Administration
OFI	Opportunity for Improvement
OII	Occupational Injury and Illness
OPEX	Operating Experience
OSHA	Occupational Safety and Health Administration
QA	Quality Assurance
RWD	Restricted Workday
STS	Standard Threshold Shift
UPF	Uranium Processing Facility
Y-12	Y-12 National Security Complex

LESSONS LEARNED FROM ASSESSMENTS OF OCCUPATIONAL INJURY AND ILLNESS RECORDKEEPING AND REPORTING AT U.S. DEPARTMENT OF ENERGY SITES DURING CALENDAR YEARS 2022-2024

Executive Summary

This lessons learned report summarizes the results of assessments of occupational injury and illness (OII) recordkeeping and reporting conducted by the U.S. Department of Energy (DOE) Office of Enterprise Assessments (EA) at four DOE sites during calendar years 2022 to 2024. Additionally, this report includes a comparative analysis using results from the 2019 EA OII recordkeeping and reporting lessons learned report. This report provides recommendations to promote organizational learning and to improve performance throughout the DOE complex.

Accurate and timely OII recordkeeping and reporting are pertinent to the safety of all operations across the DOE complex. By properly characterizing, recording, and analyzing this data, DOE line management and contractors can identify the types and causes of injuries and illnesses that occur and implement timely and effective corrective actions. In addition, DOE contractors use injury and illness data as part of their contractor assurance systems to measure how effective they are in preventing OII cases, and DOE uses OII data to gain insight into safety performance.

The assessed sites had established written OII recordkeeping and reporting programs, that, if effectively implemented across the assessed sites, would have resulted in consistently adequate programs. EA identified the following positives in OII program implementation, including one best practice:

- At the Pantex Plant, Consolidated Nuclear Security, LLC's (CNS's) process for tracking case files in the Occupational Safety and Health Administration (OSHA) 300 log includes the use of a digital records management system which provides real-time status of OII cases, supports timely Computerized Accident/Injury Reporting System (CAIRS) case updates, and establishes consistent auditable OII case records. (Best Practice)
- The CNS Y-12 National Security Complex Occupational Health Services hearing loss determination form used by the Medical Director was an effective tool that provided a comprehensive auditable format for understanding and reviewing standard threshold shift case work-relatedness determination.
- At the Pantex Plant, CNS updated the number of Days Away, Restricted or Transferred (DART) days in CAIRS as they occurred, rather than waiting until the required reporting date (tenth of the month following each calendar quarter), supporting their accomplishment as the only DOE site to achieve 100% entry accuracy for the reviewed OII cases.
- DOE field elements at the assessed sites had technically competent and experienced staff overseeing contractor OII recordkeeping and reporting programs.

EA also identified several weaknesses in OII program implementation, including the following:

- At three of the assessed sites, contractors did not perform adequate oversight to ensure subcontractors consistently maintained company OSHA 300 log or 300A summary for recordable cases and at two of the assessed sites, subcontractor's OSHA 300 log did not contain sufficient details as required by OSHA regulations.
- 72% of the reviewed cases classified as non-occupational across the four assessed sites were misclassified and were work-related.
- 23% of the reviewed recordable cases across the four assessed sites had inaccuracies in DART reporting.

- 18% of the reviewed cases classified as first-aid across the four assessed sites were misclassified and were recordable.
- At two of the assessed sites, quarterly quality checks of OII records were not effectively conducted.

Further, a comparison of the results from this lessons learned report to the 2019 EA OII lessons learned report demonstrates that previously identified weaknesses in the areas of OII case classification, quality assurance, and subcontractor OSHA logs continue to persist.

In summary, the assessed sites had all established written OII recordkeeping and reporting procedures, and most individuals responsible for recordkeeping programs received training and had experience relevant to their roles and responsibilities. However, the detail and quality of OII records were often insufficient to support OSHA classification decisions. Previously identified weaknesses regarding OII case classification, quality assurance, and subcontractor OSHA logs, continue to persist.

Recommendations

The key recommendations identified in this lessons learned report for DOE program office and field element managers and site contractor OII managers are summarized below and are more fully described in section 5.0.

- DOE field element staff conducting oversight of OII programs should perform a more rigorous review of case record classification by including worker interviews and staying current with OSHA letters of interpretation.
- OII managers should obtain medical records from third party providers and review OSHA letters of interpretation to accurately classify cases as occupational or non-occupational, recordable or first aid, and that DART workday counts are accurate.
- OII managers should improve the effectiveness of OII case classification audits/assessments to determine why injury and illness data is not always meeting recording classification requirements.
- Sites should ensure that personnel supporting OII programs (staff, contracted support staff, and medical occupational services) have a common understanding of recordkeeping requirements to support accurate case classification and receive continued training to stay current with updated OSHA recordkeeping requirements.
- Sites should improve the OSHA recording and CAIRS reporting quarterly quality check process by ensuring that subcontractor OII contract requirements are in place and effectively implemented.

LESSONS LEARNED FROM ASSESSMENTS OF OCCUPATIONAL INJURY AND ILLNESS RECORDKEEPING AND REPORTING AT U.S. DEPARTMENT OF ENERGY SITES DURING CALENDAR YEARS 2022-2024

1.0 INTRODUCTION

The U.S. Department of Energy (DOE) Office of Worker Safety and Health Assessments, within the independent Office of Enterprise Assessments (EA), conducted occupational injury and illness (OII) recordkeeping and reporting assessments at four DOE sites during calendar years 2022 to 2024. The assessed sites are under the direction of the DOE Office of Environmental Management, the National Nuclear Security Administration, and the Office of Fossil Energy and Carbon Management. The objective of each assessment was to determine the effectiveness of OII recordkeeping and reporting programs, including field element oversight activities.

This lessons learned report identifies best practices, positives, weaknesses, and recommendations, with the goal of promoting organizational learning and improving performance throughout the DOE complex.

2.0 METHODOLOGY

EA implements DOE's independent oversight program. This program is designed to enhance DOE safety and security programs by providing the Secretary and Deputy Secretary of Energy, Under Secretaries of Energy, DOE managers, senior contractor managers, Congress, and other stakeholders with an independent evaluation of the adequacy of DOE policy and requirements. Additionally, the program evaluates the effectiveness of DOE and contractor line management performance and risk management in safety and security, and other critical functions as directed by the Secretary. DOE Order 227.1A, *Independent Oversight Program*, describes and governs the DOE independent oversight program. EA implements the program through a comprehensive set of internal protocols and assessment guides.

This report presents lessons learned that were developed from the analysis of four assessments of various aspects of site OII recordkeeping and reporting programs. The scope of these assessments included elements from EA CRAD EA-32-07, Revision 1, *Occupational Injury/Illness Recordkeeping*. EA used these criteria to determine whether the policies, procedures, and operational performance met DOE objectives for effectiveness in the areas examined. A comprehensive quality check of each site's OII records for periods varying from one to approximately three years, as well as a review of the OII records of selected subcontractors working on site at the time of the assessments were conducted.

Requirements for DOE contractors to identify, investigate, classify, and record occupational injuries and illnesses and report recordable cases to the DOE Computerized Accident/Incident Reporting System (CAIRS) are documented in 10 CFR 851, *Worker Safety and Health Program*. By reference, 10 CFR 851.23(a)(2) invokes 29 CFR 1904, *Recording and Reporting Occupational Injuries and Illnesses*, Occupational Safety and Health Administration (OSHA) OII recordkeeping requirements, and 10 CFR 851.26(a)(2) requires contractors to follow DOE reporting directives, which includes DOE Order 231.1B, *Environment, Safety and Health Reporting*. The OSHA recordkeeping requirements imposed by DOE are those used by other Federal agencies and by non-DOE private employers under the regulatory jurisdiction of OSHA; DOE applies these requirements to promote consistency in DOE safety performance data benchmarked to private industry. DOE Order 231.1B requires sites to enter injury and illness cases that meet OSHA recordability criteria in the CAIRS system in a timely manner and requires DOE field elements to conduct quality assurance (QA) oversight of these records.

Appendix A lists the contributors to this lessons learned effort, the members of the Quality Review Board, and the EA management responsible for this evaluation. Appendix B shows the assessed sites and source documents. Appendices C through F provide supplemental information to support the proper determination of work-relatedness (appendix C), the OII case data analysis/summary (appendix D) and recommendations (appendices E and F) presented in this report.

The results presented in section 3.0 below reflect aggregated observations from the four EA assessment reports. Those reports are a snapshot of conditions at the time of the assessment. The issued reports, provided to the assessed organizations, may have resulted in corrective actions or enhancements not reflected in these discussions.

3.0 RESULTS

Significant observations from the four OII assessments are grouped into the following topical areas: program and administration, classification of OII cases, subcontractor OII recordkeeping and reporting, OII case record QA, CAIRS reporting, and Federal oversight of OII recordkeeping and reporting programs and records. Table 1 quantifies and correlates the best practices, findings, deficiencies, and opportunities for improvement (OFIs) identified in the assessment reports to the relevant topical areas. Within a report, any best practices, findings, deficiencies, or OFIs could be applicable to more than one topical area; hence, the numbers in the table do not correspond to the total number of best practices, findings, deficiencies, and OFIs in the assessment reports. Discussion of the positives and weaknesses by topical area are summarized in sections 3.1 to 3.6.

Table 1. Topical Areas and Identified Best Practices, Findings, Deficiencies, and OFIs[1]

Topical Area	Best Practices	Findings	Deficiencies	OFIs
Program and Administration	1	0	5	5
Classification of OII Cases	0	2	3	1
Subcontractor OII Recordkeeping and Reporting	0	0	4	0
OII Case Record QA	0	2	7	2
CAIRS Reporting	0	0	1	0
Federal Oversight of OII Recordkeeping and Reporting Programs and Records	0	0	1	0

[1] Best Practices, findings, deficiencies, and OFIs are defined in DOE Order 227.1A. In summary, best practices are safety or security related practices, techniques, processes, or program attributes observed during an appraisal that may merit consideration by other DOE and contractor organizations for implementation; findings are deficiencies that warrant a high level of attention from management; deficiencies are inadequacies in the implementation of an applicable requirement or standard; and OFIs are recommendations for improvement.

3.1 Program and Administration

This portion of the lessons learned review addresses the positives and weaknesses associated with the program documents that govern the identification, classification, and determination of recordability for OII cases; the reporting of case records in CAIRS; and the training of OII case managers.

DOE contractors are required to maintain a formal injury and illness recordkeeping program that outlines the responsibilities and procedures for identifying, reporting, classifying, documenting, accessing, and retaining OII records.

Positives

Each of the four assessed sites had established generally adequate written program documents for identifying, classifying, and accurately determining the recordability of OII cases and reporting case records in CAIRS as required by 10 CFR 851, DOE Order 231.1B, and 29 CFR 1904. CAIRS organizational reporting codes were appropriately established for work activities at most of the sites. For example, at the Hanford Site, separate reporting codes had been established for prime contract workers, construction subcontractors, and service subcontractors. In addition, OII recordkeeping and reporting requirements were generally flowed down to subcontractors. All assessed sites also assigned OII roles and responsibilities within their program documents. Notably, the Y-12 National Security Complex (Y-12) Uranium Processing Facility (UPF) project provided a documented process to address questions that could arise regarding OII classification and used the Bechtel National, Inc. *Incident Reporting and Information System* tracking tool to record and store all project work- and non-work-related injury and illness data.

Most assessed sites also discussed OII reporting requirements in their employee manuals. At the Pantex Plant, the *Pantex Employee Manual* provided employees with clear instructions for reporting injuries and illnesses and for interacting with the Occupational Health Services organization. Similarly, the *NETL Environmental Safety and Health Handbook* clearly stated the requirement to report all injuries and illnesses, and required this to be communicated to all new employees during initial training.

Overall, at most sites, staff with assigned OII responsibilities were provided OII training. Reviewed training records at three assessed sites generally demonstrated that OII case managers were trained in OII recordkeeping, case classification requirements, and CAIRS direct data entry. However, the number of OII misclassification cases discussed in section 3.2 indicates that such training may not have been fully effective.

Weaknesses

The following weaknesses were identified at one or more of the four sites:

- Requirements for subcontractors to maintain a site/project-specific OSHA 300 log or 300A summary for recordable cases as required by OSHA were not understood. This could result in a misrepresentation of subcontractor's safety performance.
- At one site, procedures did not provide sufficient detail to ensure consistent implementation and compliance with 29 CFR 1904 OII recordkeeping and classification requirements. For example, procedures did not document the OSHA definition of restricted work for use in recordability determinations. The lack of specific guidance introduces the potential for human error and inaccurate determinations.

- Appropriate OII-related third-party medical treatment records were not obtained to support OII case classifications. At one site, the program procedure did not include clear instructions regarding obtaining these records, and at another site, the contractor was not able to obtain the information from its subcontractors. Not including third-party medical treatment records compromises the accuracy of OII case classifications and diminishes the accuracy of data trending.
- Although OII training was provided at three of the assessed sites, such training was not fully effective with respect to the requirements for classification of OII cases, subcontractors maintaining OSHA logs, and guidance on recordability of restricted work activities.

3.2 Classification of OII Cases

This portion of the lessons learned review addresses the positives and weaknesses associated with the classification of OII cases.

DOE contractors are required to investigate any injuries or illnesses that are reported to them or identified by them and to classify those injuries and illnesses using OSHA's classification criteria. Cases are first evaluated to determine whether they are work-related (i.e., whether they result from events or exposures occurring in the work environment, unless an OSHA-specified exception applies). According to an OSHA interpretation letter (see appendix C of this report), injuries and illnesses "must be considered work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition."

Work-related (occupational) injuries and illnesses are classified as either non-recordable (often referred to as first aid cases) or recordable. Recordable cases are of two types:

- Medical Treatment Only: Cases where a licensed health care professional prescribed medication or provided medical treatment beyond first aid.
- Days Away, Restricted or Transferred (DART): Cases where the injury or illness caused a worker to be away from work for at least one day beyond the day of injury, the worker was not able to perform one or more of his/her routine duties due to the injury or illness, or the worker was transferred to another position to accommodate work restrictions.

Positives

Overall, the processes used at the four assessed sites for classifying and recording workplace injuries and illnesses were well documented.

Weaknesses

While the processes for classifying and recording workplace injuries and illnesses were documented, weaknesses in the implementation of these processes were observed at each site. The reviewed cases that were determined by EA to be misclassified for each assessed site ranged from 7% to 67%. Misclassifying OII cases minimizes the severity of injuries and illnesses and limits feedback for targeting needed safety improvements. It can also impact performance metrics such as the Performance Evaluation and Measurement Plan and the Voluntary Protection Program by reporting inaccurate DART and total recordable case rates. Additionally, appendix D of this report provides a summary analysis of 188 OII cases that were reviewed by EA across all four sites, based on a combination of detailed OII case record reviews and interviews with injured workers. The results of the summary analysis demonstrate the following:

- Thirty-three out of 46 (72%) cases were misclassified as not work-related.

- Eight out of 35 (23%) cases classified as recordable had inaccuracies in DART reporting.
- Nineteen out of 107 (18%) cases were misclassified as not recordable (first aid only).

Furthermore, two of the four assessed sites did not always use or reference OSHA Standard Interpretations when classifying OII cases. One site was not aware of how to properly classify injuries sustained in onsite parking lots while another was unaware of updated reporting requirements (i.e., *Enforcement Guidance Under OSHA's Recordkeeping Regulation When First Aid, Active Release Techniques (ART), and Exercise/Stretching Are Used to Treat Musculoskeletal Injuries and Illnesses*, issued May 2, 2024) pertaining to the practice of providing multiple days of first aid treatment to musculoskeletal injury cases.

At one site, 30% of interviewed workers reported that they were hesitant to report injuries and incidents due to concerns relating to potential consequences. This fear of reporting injuries may have impacted OII recordkeeping and recording and ultimately hazard mitigation.

3.3 Subcontractor OII Recordkeeping and Reporting

This portion of the lessons learned review addresses the positives and weaknesses of subcontractor OII recordkeeping and reporting.

For subcontractors, OII recordkeeping and reporting requirements fall into the following two categories:

- Subcontractors that supplement the contractor's workforce and are supervised on a day-to-day basis by the contractor: OII cases for these subcontractors must be investigated, classified, and recorded by the contractor, and recordable OII cases for subcontracted supplemental labor must be included in the contractor's records, including OSHA 300 logs and 300A summaries.
- Subcontractors that independently perform a specific scope of work and are not supervised by the contractor on a day-to-day basis: OII cases for these subcontractors must be investigated, classified, and recorded by the subcontractor on the OSHA 300 logs and 300A summaries.

Regardless of category, DOE contractors are responsible for reporting and entering all subcontractor OII recordable cases in CAIRS.

Positives

For each of the four assessed sites, most OII reporting and work hour requirements were flowed down to subcontractors and sub-tier contractors. For example, at the Pantex Plant, subcontractors were contractually required to provide immediate notification of injuries to the contractor and provide a monthly report of injuries and subcontractor work hours. At the Y-12 UPF project, contracts require lower-tier subcontractors to report an injury or illness to the prime contractor within two business days of learning of the event and submit the subcontractors' safety hours and performance monthly report (detailing all injuries, illnesses, first aid, and incidents) by the third of every month.

Weaknesses

The following weaknesses in subcontractor OII recordkeeping and reporting were identified at one or more of the assessed sites:

- Subcontractors did not maintain and/or keep accurate OSHA 300 logs and 300A summaries for recordable cases. In one example, a subcontractor DART case with four days away from work was identified in the contractor's subcontractor CAIRS organizational code but was not recorded on the

subcontractor's OSHA 300 log and 300A summary. In another example, a subcontractor included recordable injuries from other work sites on the site-specific OSHA 300 log. Errors and omissions in OSHA recording could result in subcontractors providing inaccurate safety performance records to DOE, OSHA, and worker's compensation carriers.

- Sites did not ensure that subcontractor OSHA 300 logs contained sufficient details as required. Inaccurate or incomplete entries in OSHA 300 log column E (i.e., where the event occurred) and/or column F (i.e., injury/illness description, specific body part affected, and object/substance that directly injured the employee) were identified in half of the assessed sites' contractor and/or subcontractor logs. At one site, despite contractual notification to subcontractors regarding the lack of details, corrections were not made. Without sufficient details entered onto the log, the ability to identify trends in injuries and illnesses may be diminished.

3.4 OII Case Record Quality Assurance

This portion of the lessons learned review addresses the positives and weaknesses associated with the QA of OII case records.

DOE QA requirements include:

- Maintenance of OII case records to support the understanding of classification decisions and to facilitate quality checks, CAIRS reporting, and Federal oversight activities. (See appendix E of this report for the recommended content of an auditable OII case file.)
- Performance of quarterly quality checks of OII data in accordance with DOE Order 231.1B, attachment 3, to ensure that cases are correctly classified and recorded (e.g., the number of DART days), and that local OSHA 300 logs and 300A summaries are accurate and consistent with the information reported in CAIRS.
- Verification that OII case classification errors and DART inaccuracies, once identified, are corrected in OSHA 300 logs and CAIRS entries, as required by 29 CFR 1904.33(b)(1), *Do I have to update the OSHA 300 Log during the five-year storage period*, and DOE Order 231.1B, attachment 1, section 2.a.(2).

Positives

All assessed sites maintained processes and systems to review OII-related documentation and records. For example, at the Pantex Plant, Consolidated Nuclear Security, LLC (CNS) used a digital records management system capable of providing real-time status of OII cases and establishing consistent auditable OII case records; additionally, the field element was given access to the OSHA 300 log spreadsheet, including the results of the quarterly quality check, allowing for transparent access to all records needed for audit purposes. Further, the CNS Y-12 Occupational Health Services Medical Director's hearing loss determination form effectively provided a comprehensive auditable tool for understanding and reviewing standard threshold shift (STS) case work-relatedness determination. The Y-12 UPF project also adopted and implemented the quality check approach described in the operating experience (OPEX) policy awareness notice *CAIRS Documented Quality Checks*, dated April 2022. Finally, quality checks of the work hours exposure reporting between CAIRS and OSHA 300A summaries showed consistent correlation at three of the assessed sites.

Weaknesses

The following weaknesses in QA were identified at one or more of the assessed sites:

- One site did not have a requirement in their OII program to conduct documented quarterly CAIRS quality checks.
- One site did not effectively implement their OII QA process, which resulted in inconsistent case information, late reporting, and uncorrected case misclassifications in the OSHA 300 log and in CAIRS. Examples included previously identified hearing loss cases were not updated in OSHA 300 logs or CAIRS database, and three misclassified OII cases were not corrected as directed by the local DOE site office.
- At one site, STS cases were not entered into the OSHA 300 log within the required 7-day period.

3.5 CAIRS Reporting

This portion of the lessons learned review addresses the positives and weaknesses associated with CAIRS reporting.

As required by 10 CFR 851 and DOE Order 231.1B, contractors must timely record and enter accurate OII case information onto respective OSHA logs and into the CAIRS database. DOE organizations such as program offices, field elements, the Office of the Associate Under Secretary for EHSS, and EA need reliable CAIRS OII case and incidence trend data for timely performance analysis and feedback; late OII case reporting into CAIRS may skew safety performance statistics available to these organizations.

Positives

Apart from misclassified OII cases, three of the four assessed sites entered most OII information into CAIRS in accordance with DOE Order 231.1B requirements, and the information corresponded to that provided in the OSHA 300 logs. Notably, at the Pantex Plant, CNS's practice of updating DART days in CAIRS as they occurred, rather than waiting until the required reporting date (tenth of the month following each calendar quarter), supported their achievement of 100% entry accuracy for the reviewed OII cases.

Weaknesses

At one site, reporting information into CAIRS was not timely, with two of five cases not entered within the required timeframe. This condition was due to factors such as a misunderstanding of the OSHA restricted workday (RWD) definition, incomplete OII auditable case files, and issues related to subcontractor reporting.

3.6 Federal Oversight of OII Recordkeeping and Reporting Programs and Records

This portion of the lessons learned review addresses the positives and weaknesses associated with field element staff competency and experience and oversight of contractor OII recordkeeping and reporting programs and records.

Across the DOE complex, line management relies on contractor assurance systems to identify and correct issues. Most contractor assurance systems include the analysis of OII records to identify emerging adverse safety trends and potential corrective actions. DOE field element oversight serves to validate the accuracy of OII records and the effectiveness of the contractor assurance system.

Positives

Field elements at the assessed sites had technically competent and experienced staff overseeing contractor OII recordkeeping and reporting. Most field elements conducted thorough and comprehensive oversight of contractor OII recordkeeping and reporting programs through documented assessments and operational awareness activities and appropriately communicated weaknesses to contractors. At two of the assessed sites, field office line management performed assessments and/or surveys which identified concerns with contractor OII implementation. Those findings were disputed by the contractors resulting in those field offices requesting an independent assessment of the contractors' OII programs.

Weaknesses

While field element staff conducting oversight at the assessed sites were technically competent, the number of contractor OII case misclassifications identified suggests that additional strategies and practices are needed to perform effective oversight. This may include conducting worker interviews, reviewing contractor and subcontractor OSHA logs, and staying current on OSHA recordkeeping requirements including letters of interpretation.

3.7 Comparative Analysis to the 2019 EA OII Lessons Learned Report

This portion of the lessons learned review compares the results of the current report to the 2019 EA OII lessons learned report.

Overall, performance at assessed sites related to program administration and Federal oversight of OII recordkeeping demonstrate a continuance of OII weaknesses that were addressed in the 2019 EA OII Lessons Learned Report. Weaknesses remain in the areas of OII case classification, subcontractor OII recordkeeping, and OII case record QA. Specifically, the following issues continue to be a concern:

- Misclassification of OII cases resulting from the incorrect application of OSHA criteria (i.e., work-relatedness, restricted work, and first aid) and incomplete case information (e.g., third party medical treatment and prescription records).
- Subcontractors not maintaining and/or submitting accurate or complete OSHA 300 logs and 300A summaries for recordable cases.
- Ineffective or absent quarterly quality checks of OII records, resulting in ongoing case misclassifications and discrepancies between OSHA logs and CAIRS reporting (i.e., missing cases, inaccurate DART days count, uncorrected case misclassifications).

4.0 BEST PRACTICES

A best practice is a safety-related practice, technique, process, or program attribute observed during an appraisal that may merit consideration by other DOE and contractor organizations for implementation because it demonstrates a substantial improvement in safety or security performance of a DOE operation, or it represents or contributes to superior performance (beyond compliance). Additionally, a best practice could be identified because it solves a problem or reduces the risk of a condition or practice that affects multiple DOE sites or programs, or it provides an innovative approach or method to improve effectiveness or efficiency. The following best practice was identified at the time that the individual assessments were conducted and may be valuable to other DOE sites:

- At the Pantex Plant, Consolidated Nuclear Security, LLC's (CNS's) process for tracking case files in the Occupational Safety and Health Administration (OSHA) 300 log includes the use of a digital

records management system which provides real-time status of OII cases, supports timely Computerized Accident/Injury Reporting System (CAIRS) case updates, and establishes consistent auditable OII case records. (Best Practice)

5.0 RECOMMENDATIONS

The following recommendations are based on the analysis of assessments as summarized in section 3.0 of this report. While the underlying weaknesses from the individual assessments did not apply to every reviewed site, the recommended actions are intended to provide insight for potential program improvement at all DOE sites. Consequently, DOE organizations and site contractors should evaluate the applicability of the following recommended actions to their respective facilities and/or organizations and consider their use as appropriate in accordance with Headquarters and/or site-specific program objectives.

Office of Environment, Health, Safety and Security

To improve OII recordkeeping and reporting across the DOE complex, consider the following recommended action:

- Develop and deliver a series of DOE CAIRS or EHSS lessons learned fact sheets, webinars, and/or other outreach training and communication tools that focus on common errors found with OSHA recordkeeping (e.g., work-relatedness determinations, common misclassification areas, RWD definition, relevant letters of interpretation, recording cases within the regulatory timeframe and crossing out later if determined to be not work-related).

DOE Field Element Managers

To support and enhance OII recordkeeping and reporting program oversight, consider the following recommended actions:

- Encourage staff members who oversee contractor OII recordkeeping and reporting programs to complete OSHA OII recordkeeping training courses and to stay current with updated OSHA recordkeeping requirements to enhance their knowledge and technical competency to recognize application of proper recordkeeping practices and identify classification errors.
- Improve oversight of site recordkeeping and reporting of OII cases by including worker interviews and reviewing contractor and subcontractor OSHA 300 logs and CAIRS entries during audits/assessments.

Site OII Managers

To improve OII recordkeeping and reporting, consider the following recommended actions:

- Ensure that cases are appropriately classified and recorded per OSHA requirements as occupational or non-occupational, recordable or first aid, and that DART and/or RWD counts are accurate by:
    - Including the OSHA definitions of OII recordability, such as restricted work, in OII procedures. Insert relevant examples of cases from OSHA letters of interpretation to improve the accuracy of case classifications.
    - Ensuring that third party medical treatment records of employees and subcontractors are provided to site occupational health providers and used to support OII case classification decisions.
    - Ensuring that injuries/illnesses cases including STS cases are entered into the OSHA 300 log within seven days of awareness/diagnosis of the work-related injury classification, even if crossed out later if OSHA non-recordability is determined.

  - Providing OII recordkeeping and recording training, on a periodic basis, to those with OII recordkeeping and recording responsibilities to ensure effective comprehension and awareness of OII requirements, including OSHA letters of interpretation.
  - Providing effective basic OII recordkeeping training to line management to ensure they understand their roles and responsibilities regarding reporting and recording requirements, such as work- relatedness, classification criteria, definition and application of restricted work, and days away implications.
  - Communicating the organization's commitment to accurately identify and trend OII data to reduce workplace injuries and illnesses.
- Improve the effectiveness of OII case classification audits/assessments by requiring interviews with a subset of injured workers to validate the information found in the OII case record or identify and correct classification errors.
- Assess the extent to which workers are hesitant to report injuries and illnesses due to concerns of potential consequences, including conducting safety culture surveys/reviews.
- Formally integrate the guidance and approach provided in the OPEX policy awareness notice *CAIRS Documented Quality Checks*, dated April 2022, into the OII records quarterly quality check process. See appendix E for the recommended content of an auditable OII case file and appendix F for sample forms for documenting CAIRS quarterly quality checks.
- Provide subcontractors with effective guidance for implementing OSHA OII recordkeeping and reporting requirements.
- Improve the effectiveness of quarterly quality checks of OSHA recording and CAIRS reporting by contractually requiring subcontractors to:
  - Maintain local/project-specific OSHA 300 logs and 300A summaries
  - Complete logs with sufficient detail as required by OSHA
  - Submit OSHA 300 logs and 300A summaries quarterly and annually, respectively.

Appendix A
Supplemental Information

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Appendix B
Assessed Sites and Source Documents

Assessed Site	Key OII Assessed Elements	Contractor	DOE Field Element	DOE Headquarters Program Office
Hanford Site, August 2022	Program Administration Case Classification Quality Assurance (QA) Federal Oversight	Central Plateau Cleanup Company, LLC (CPCCo)	Richland Operations Office (RL)[1]	Office of Environmental Management
Pantex Plant, September 2022	Program Administration Case Classification QA Federal Oversight	Consolidated Nuclear Security, LLC (CNS)[2]	National Nuclear Security Administration (NNSA) Production Office (NPO)[3]	NNSA
National Energy Technology Laboratory (NETL), April 2024	Program Administration Case Classification QA Federal Oversight	Not Applicable	Government-owned, Government-Operated (GOGO)[4]	Office of Fossil Energy and Carbon Management
Y-12 National Security Complex (Y-12) Uranium Processing Facility (UPF), report pending	Program Administration Case Classification QA Federal Oversight	CNS[5]	Y-12 Acquisition and Project Management Office	NNSA

Note 1: At the time of the assessment, RL provided oversight for CPCCo projects. In 2024, and subsequent to the assessment, RL and the Office of River Protection were combined into the Hanford Field Office.

Note 2: At the time of the assessment, Pantex Plant was managed and operated by CNS. In 2024, and subsequent to the assessment, Pantex Plant transitioned to PanTeXas Deterrence, LLC management.

Note 3: At the time of the assessment, NPO provided oversight for Pantex Plant. In 2024, and subsequent to the assessment, oversight transitioned to the Pantex Field Office.

Note 4: NETL, a GOGO facility, manages its OII recordkeeping program, including contractor-reported OII cases.

Note 5: Y-12 UPF is subcontracted by CNS to Bechtel National, Inc., which is responsible for the OII recordkeeping program at the UPF project site.

Source Documents

- EA Report, *Office of Enterprise Assessments Lessons Learned from Assessments of Occupational Injury and Illness Recordkeeping and Reporting at U.S Department of Energy Sites, January 2019*
- EA Report, *Independent Assessment of Occupational Injury and Illness Recordkeeping by the Central Plateau Cleanup Company, LLC at the Hanford Site, August 2022*
- EA Report, *Independent Assessment of Occupational Injury and Illness Recordkeeping and Reporting by Consolidated Nuclear Security, LLC at the Pantex Plant, September 2022*
- EA Report, *Independent Assessment of Occupational Injury and Illness Recordkeeping and Reporting at the National Energy Technology Laboratory, April 2024*
- EA Report, *Independent Assessment of Occupational Injury and Illness Recordkeeping and Reporting at the Y-12 National Security Complex Uranium Processing Facility*

Appendix C
OSHA Letter of Interpretation Regarding Work-relatedness of OII Cases

Shown below are excerpts from an Occupational Safety and Health Administration (OSHA) Letter of Interpretation, dated February 28, 2014, that clarifies the determination of work-relatedness:

> Section 1904.5(a) provides that injuries and illnesses must be considered work-related if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition. Work-relatedness is presumed for injuries or illnesses resulting from events or exposures in the work environment, unless an exception in section 1904.5(b)(2) specifically applies. Accordingly, for a case to be work-related there must be a causal connection between the injury or illness and an event or exposure at work. For OSHA recordkeeping purposes, causality is established if work is a cause. The work event or exposure need only be a cause of the injury or illness; it need not be the sole or predominant cause. (See the preamble to the final rule revising OSHA's recordkeeping regulation 66 Federal Register 5929-32, 5946 and 5948.) Also, "it is not necessary that the injury or illness result from conditions, activities, or hazards that are uniquely occupational in nature." (66 Federal Register 5929)
>
> Under OSHA's recordkeeping system, normal body movements in the work environment, such as walking, bending down or sneezing, are "events" which trigger the presumption for work-relatedness if they are a discernible cause of an injury.

Appendix D
OII Case Misclassification and Errors
Summary Analysis of EA-reviewed OII Cases

Type of Case Misclassification and Errors	# Cases Reviewed	# Cases Misclassified or with Errors	Percent of Cases Misclassified or with Errors	Common Reasons Leading to Case Misclassification or Errors
Non-occupational to occupational cases (recordable or first aid)	46	33	72%	• Parking lot, heat-related, and hearing loss (standard threshold shift) cases were not acknowledged or recognized as work-related. • Offsite medical treatment beyond first aid was administered.
Recordable cases with reporting errors (e.g., Lost or Restricted Workday counting)	35	8	23%	• Restricted Workdays not counted • Restricted Workdays or Lost Workdays inaccurately counted
First aid to recordable cases	107	19	18%	• Offsite medical providers gave prescription medication and/or work restrictions. • Work restrictions were officially or unofficially assigned because of injury.
Totals	188	60	32%	

Appendix E
Recommended Content of an Auditable OII Case File

The following is an excerpt from EA CRAD EA-32-07, Revision 1, *Occupational Injury/Illness Recordkeeping*, dated April 14, 2022, with COVID-19 references omitted:

As a best practice, DOE OII case file records should include:

- First report of injury
- Statements from the injured worker and any witnesses
- Results of the safety investigation and/or fact-finding meeting
- Health services, hospital, and emergency room in/out medical record for the injured person
- Medical diagnosis for injury/illness related to case (from health services, hospital/emergency room, contracted occupational medical provider, and/or other medical providers/referrals)
- Medical treatment provided at each medical visit, including types of medical devices (e.g., rigid splint) applied
- Prescribed medication (at initial and any follow-up medical evaluations)
- Health/medical services, other licensed health care provider (LHCP), or supervisor/manager direction on imposed medical/work restrictions and how restrictions impact the worker's ability to perform routine work activities (updated for each set of restrictions as the OII case progresses)
- Workers' compensation case information that can be used to cross-check OII case (e.g., new cases opened, payments for medical prescriptions or treatment, or payments for time off from work due to an injury)
- Documented classification decision rationale (i.e., why the case is or is not OSHA recordable)
- DOE Form 5484.3, *Individual Accident/Incident Report*, for OSHA recordable cases
- Corrective actions (or linkage to corrective actions in the local issue tracking system).

Appendix F
OPEX Awareness Notice
Policy Awareness: CAIRS Documented Quality Checks

Office of Environment, Health, Safety and Security

OPEX Awareness

April 2022

Policy Awareness: CAIRS Documented Quality Checks

This Operating Experience (OPEX) Awareness communication provides targeted information to support contractor implementation of the DOE Order 231.1B, *Environment, Safety, and Health Reporting*, requirement for documented quality checks of injury and illness information reported to the Department of Energy (DOE) in the Computerized Accident/Incident Reporting System (CAIRS).

Attachment 3, paragraph 1.f. of the Order states:

"Documented quality checks of injury and illness information reported to DOE through CAIRS must be conducted at least quarterly to ensure information is thorough, accurate, and consistent with information contained in local records."

Since the DOE Order does not specify how DOE contractors are to conduct the required quality check, this policy awareness article provides examples of good practices and expectations to individuals who are assigned occupational injury and illness recording and reporting responsibilities to adequately implement this requirement.

What is a "documented quality check"?

A documented quality check is a self-assessment of the injury/illness recordkeeping and reporting program, performed on a quarterly basis, to verify that the information recorded and reported is thorough and accurate. Since DOE cannot oversee the preparation of each Occupational Safety and Health (OSHA) Form 300, OSHA Form 300A, and CAIRS report at every establishment, this quarterly quality check helps ensure the integrity of the CAIRS data and is intended to assure that the work-related injury and illness reporting procedures are adequate and continue to be implemented properly. This quality check is not to be confused with the OSHA annual certification requirement found in 29 CFR 1904.32 and would not be certified as defined in 29 CFR 1904.32(b)(3). OSHA has not adopted regulatory language requiring quarterly formal audits of the OSHA Part 1904 records. The person conducting the quality check needs to be trained in DOE's recordkeeping requirements and their respective organization's recordkeeping practices and policies.

What should the quarterly quality check include?

This quality check would typically review all the injuries and illnesses that have been reported during the quarter to include all forms, such as the OSHA Form 300, to make sure the cases that should have been reported into CAIRS have, in fact, been reported. The documentation would also include each of the CAIRS case numbers reviewed, and any identified deviations, inadequacies, or procedural problem area(s) that should be corrected as soon as possible.

This quality check must evaluate 3 components: thoroughness, accuracy, and consistency

What is thoroughness?

Cases are classified on the OSHA Form 300 in accordance with the most serious outcome associated with the case. A one- or two-line description for each recordable injury or illness is to be included on the OSHA Form 300. It should not be just: "burn" but rather, for example, "Second degree burns on right forearm from acetylene torch." Use two lines of the OSHA Form 300 to describe an injury or illness, if necessary. The OSHA Form 300 maintained by the DOE contractor and CAIRS database each contain a field for a case number and this number must be the same on both. All the required records should be reviewed with the detail required by the regulations and DOE Order 231.1B. All inaccuracies should be documented and corrected to ensure that there are no deficiencies that materially impair the understandability of the nature of hazards, injuries, and illnesses in the workplace.

What is accuracy?

Cases that involve days away, restricted or transferred should be accurate and up to date. The DOE contractor's internal system should correspond directly with the CAIRS database. The quality check should review outstanding cases; track day counts for cases involving restricted work activity, job transfer, and days away from work; review ongoing employee job limitations; and prepare estimates of future days that will be lost, restricted, or transferred. For example, the numbers of days away and restricted days in the DOE contractor's data system should match the data reflected in the DOE CAIRS database. The CAIRS report should clearly describe the injury or illness, the workplace factors associated with the accident, and a brief description of how the injury or illness occurred.

What is consistency?

Cases are consistently entered into the CAIRS database following and adhering to the requirements found in DOE Order 231.1B. Information should be the same on both the OSHA 300 log and the CAIRS report. The CAIRS reports should be classified in a consistent manner with proper classification as an injury or as an illness. CAIRS reports are consistently entered on time electronically and each data field on the report is complete when the report is submitted. All data elements should be coded in accordance with the CAIRS Direct Data Entry Coding Guide. Reports are submitted for receipt on or before the 15th and the last working day of the month.

What documentation is required?

As a minimum, the date of the quality check and the employee who performed the quality check should be documented. Two examples/formats of quarterly quality checks are provided in the Attachment: Examples for CAIRS Documented Quality Checks.

For additional information and guidance:

Questions can be directed to Craig Schumann, CAIRS Program Manager, at (630) 252-9176 or craig.schumann@hq.doe.gov.

[2]

[2] EHSS established the OEC@hq.doe.gov email box for OPEX Awareness questions including questions concerning CAIRS Documented Quality Checks.

ATTACHMENT: Examples for CAIRS Documented Quality Checks

Sample form to document a quarterly quality check

Quarterly Quality Checklist of Injury and Illness Information					
Title/Activity: DOE Order 231.1B Quarterly Quality Check of Injury and Illness Information		**Quality Check Number:** (Suggested format YYYYMMDD)			
Organization: (Organization responsible for CAIRS data entry)		**Location(s):** (Office or virtual)			
Person completing quality check: (Name/title of person conducting the quarterly quality check)		**Other information:** (e.g., persons interviewed)			
Item #	**Lines of Inquiry/Questions**	**Additional Clarification if needed**	**Yes**	**No**	**N/A**
1	Are the contractor and applicable subcontractor injuries and illnesses properly reported into CAIRS? List any deficiencies identified in next column.				
2	Are the work hours for the previous quarter properly entered into CAIRS?				
3	Have the necessary updates been completed in CAIRS?				
4	Summary/Comments				

Sample outline of a documented quarterly quality check

Purpose: *Review of the quality of information reported into CAIRS was conducted for the X quarter of calendar year: XXXX, per DOE Order DOE O 231.1B.*

Documents reviewed: _____
Case Reviews: _____
Workhour Review: _____
Summary: _____
Name/Date: _____