



U.S. Department of Energy
Office of Inspector General
Office of Audit Services

Audit Report

The Department's Reporting of
Occupational Injuries and Illnesses



Department of Energy

Washington, DC 20585

May 21, 2004

MEMORANDUM FOR THE SECRETARY

FROM:

Greg Friedman
Gregory H. Friedman
Inspector General

SUBJECT:

INFORMATION: Audit Report on "The Department's Reporting of Occupational Injuries and Illnesses"

BACKGROUND

One of the Department of Energy's operating goals is to ensure the safety of its over 100,000 workers. To that end, the Department has developed a number of measures to identify trends and patterns in occupational injuries and illnesses and to gauge overall safety performance. Each quarter, the Office of Environment, Safety and Health reports Departmental trend information (including the National Nuclear Security Administration) using a number of widely recognized occupational safety performance indicators such as *total recordable case rate* and the *lost workday case rate*. These measures track work-related injuries and illnesses that require days away from work, restricted work activity, or medical treatment beyond first aid. The general guidelines relative to recordable cases are established by the Occupational Safety and Health Administration.

The Department compiles worker injury and illness information in its centralized Computerized Accident/Incident Reporting System (CAIRS). In addition to tracking the *total recordable case rate* and *lost workday case rate*, CAIRS provides management with the ability to calculate a number of other workplace safety indicators. For example, CAIRS has been used to evaluate trends in total lost workdays and the severity of injuries and illnesses over time. In addition to CAIRS, the Department uses a number of other systems and processes to identify and resolve worker safety issues on a real-time basis. For example, management utilizes a formal occurrence reporting system and other processes such as field management walk-downs, weekly conference calls, and other activities to assess day-to-day safety performance. Because of its importance in providing overall occupational injury and illness performance data, we initiated this audit to determine whether CAIRS was adequately maintained.

RESULTS OF AUDIT

Our audit disclosed problems with CAIRS data accuracy for a number of the Department's contractors. We identified record keeping and reporting problems for the period between January 1, 2000, and March 31, 2003. Specifically, we noted:

- Data discrepancies – exceeding ten percent - between CAIRS and records maintained by nine of the ten contractors we reviewed;



- A single contractor that had not properly recorded eight injury cases and provided this data for inclusion in CAIRS; and,
- A contractor that was not required to report work-related injury and illness data to the Department.

We attributed these issues to weaknesses in the Department's quality assurance process over injury and illness reporting. For example, standard reconciliation processes were not in place for CAIRS and when data discrepancies were identified, follow-up actions were sometimes inadequate. As a result, some of the Department's safety performance statistics were not completely accurate.

During the audit, management informed us of efforts to revise policies for health and safety reporting. Shortly after we issued a draft of this report, the Department published DOE Manual 231.1-1A, *Environment, Safety and Health Reporting Manual* which, among other improvements, requires electronic reporting of data to CAIRS, improves verification procedures, and clarifies roles and responsibilities. These proactive efforts, when fully implemented, should address many of the data accuracy issues described in our report. To help ensure that future errors are minimized, we made two specific recommendations designed to improve the accuracy of CAIRS data.

MANAGEMENT REACTION

The Office of Environment, Safety and Health (EH), the office with primary responsibility for the CAIRS System, generally concurred with our recommendations. EH, however, expressed the view that the report overstated the implications of CAIRS data errors and that the discrepancies identified would not materially affect assessment of safety performance. EH also commented on the relatively limited use of CAIRS data in relation to the day-to-day management of Departmental safety programs.

The EH comments, included in their entirety in Appendix 4, are generally responsive to our recommendations. However, we do not agree with the assertion regarding the impact of CAIRS errors. In our opinion, data quality problems, such as those observed during our audit, have the potential to affect the accuracy of occupational injury and illness indicators that provide the Department with the ability to assess the complex-wide effectiveness of its safety program. Given management's position with regard to the relative importance of such data, the Department may wish to reassess whether the effort and expense of operating CAIRS is a value-added activity.

Attachment

cc: Deputy Secretary
Acting Under Secretary for Energy, Science and Environment
Administrator, National Nuclear Security Administration
Assistant Secretary for Environment, Safety, and Health
Assistant Secretary for Environmental Management
Manager, Idaho Operations Office
Manager, Oak Ridge Operations Office
Manager, Office of River Protection

Manager, Richland Operations Office
Manager, Savannah River Operations Office

REPORT ON THE DEPARTMENT'S REPORTING OF OCCUPATIONAL INJURIES AND ILLNESSES

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Safety Performance

Safety Reporting

To accumulate injury and illness data from facilities throughout its complex, the Department uses the Computerized Accident/Incident Reporting System (CAIRS). Data is recorded on a case-by-case basis and includes information such as the number of recordable injuries and illnesses, days away from work, days of restricted work activity, and the total number of hours worked at the Department's sites. Despite specific reporting requirements, our testing revealed that CAIRS data for selected contractors was not always accurate or complete. Specifically, we observed discrepancies between contractor records and CAIRS data. Further we noted a major Environmental Management contractor that was not required to report information to the Department. Detailed information on reporting problems and the specific contractors involved is presented in Appendix 3.

Data Discrepancies

A comparison of data maintained by the Department to records held by the selected prime contractors revealed inconsistencies and reporting problems. Our testing disclosed that CAIRS did not always accurately reflect the number of days away from work, days of restricted work activity, or lost work day cases. For instance:

- In 2002, Bechtel BWXT Idaho, the contractor at the Idaho National Engineering and Environmental Laboratory, recorded 463 days away from work while CAIRS reflected only 166 days.
- In 2002, Bechtel National Incorporated, the contractor for the Waste Treatment and Immobilization Plant at the Hanford Site, recorded actual days of restricted work activity of 1,113 days while the Department's system listed 552 days.
- For several contractors, not all recordable cases were reported in CAIRS. For example, in 2002, BWXT Y-12 reported a total of 39 lost workday cases while the CAIRS system listed only 35 such cases.

In addition, at one of the contractors visited we noted that records (OSHA required illness and injury records generically known as "OSHA logs") were incomplete,

resulting in an understatement of recordable injuries. A comparison of workers' compensation claims to contractor safety records at CH2M Hill Hanford Group revealed eight claims that were not correctly reported for the period January 1, 2000, to March 31, 2003. Specifically, the contractor reported 149 recordable cases for this period, but should have reported 157 cases, an error rate of about five percent. When we brought these cases to the attention of CH2M Hill, contractor personnel reviewed them and agreed that they should have been treated as recordable events. The cases were subsequently corrected and changes were made to CAIRS, where appropriate, during August 2003.

Contractor Reporting Requirement

In addition to the ten contractors at which we performed detailed test work, we also noted one contractor that was not required to report occupational injuries and illnesses to the Department. The organization involved was a so-called "privatization contractor" that performed remediation work for the Office of Environmental Management and its contract did not contain provisions requiring reporting to CAIRS. However, the Department recently began modifying this type of contract to require the submission of safety data. For example, in September 2003, the Department modified the Foster Wheeler contract in Oak Ridge to require that occupational injury data be submitted to the Department. As of the date of our review, however, similar action had not been taken with regard to its major clean-up contract with BNFL in Idaho.

Quality Assurance

Inaccurate reporting of health and safety information occurred because of weaknesses in the Department's quality assurance process over injury and illness reporting. Specifically, errors were not promptly corrected, and there was no standard procedure for the Department or its contractors to reconcile data between CAIRS and the OSHA logs.

Error Correction

The Department's process for correcting errors was not always effective. We noted circumstances where errors with CAIRS data were identified at field activities and corrections submitted to the Office of Environment, Safety

and Health, yet the changes were not reflected in CAIRS. For instance, during a review of safety data in April 2003, the Idaho Operations Office noted that CAIRS did not have the accurate number of days away from work for a recordable case. Specifically, a case that the contractor had reported to the Department in the fourth quarter of 2002 did not appear in CAIRS. This data was re-submitted in April 2003 but CAIRS was not corrected until February 2004.

Data Reconciliation

Procedures in place at the time of our audit also did not require regular and consistent reconciliation of injury and illness data. In fact, reconciliation of the data on the system varied significantly in frequency and quality. For example, at the Idaho National Engineering and Environmental Laboratory, the Department and the contractor conducted quarterly data reviews. Any discrepancies between the data on the contractor's system and the Department's database were noted and changes submitted to CAIRS. In contrast, CH2M Hill Hanford Group had not performed reconciliation of its data prior to our audit. Further, although the Department's Environment, Safety and Health personnel investigate anomalies in the data, they did not reconcile or validate the injury and illness information submitted by contractors. In addition, CH2M Hill did not routinely reconcile data contained in workers' compensation logs to either OSHA logs or CAIRS.

Safety Statistics

For a number of years, the Department has focused on worker safety as a priority. Reliable site and complex-wide injury and illness performance data is critical to determining whether its worker safety programs are achieving the desired result. This review suggests that more needs to be done to enhance the collection of complex-wide worker injury and illness data.

Recent Policy Changes

Shortly after issuance of our draft report, the Department published the *Environment, Safety and Health Reporting Manual* (DOE Manual 231.1-1A of March 19, 2004). As noted in management's response to our draft report, this manual, if fully implemented, should address a number of the data quality concerns identified in our report. Procedures for performing annual reconciliation of

data sources, electronic data entry requirements, local error correction capabilities, and clarification of roles and responsibilities are key features of the manual. While the manual is an important step, in our opinion, several additional actions are necessary to correct existing errors and ensure that data integrity is maintained in the future.

RECOMMENDATION

We recommend that the Assistant Secretary for Environment, Safety and Health:

1. Revise policy to improve the accuracy and usefulness of data in CAIRS by requiring quarterly reconciliation of the various sources of contractor data with CAIRS; and,
2. In coordination with the Assistant Secretary for Environmental Management, incorporate safety reporting requirements into existing privatization contracts.

MANAGEMENT COMMENTS

The Department's Deputy Assistant Secretary for Environment, Safety and Health generally concurred with our recommendations. Management, however, believed that our report overstated the implications of CAIRS data errors and that the discrepancies identified would not materially affect assessment of safety performance.

AUDITOR COMMENTS

Management comments, included in their entirety in Appendix 4, are responsive to our recommendations. Despite management's assertion, however, we remain concerned that data quality problems such as those observed during our audit have the potential to materially affect the accuracy of occupational illness and injury safety indicators. As noted on the Department's CAIRS website, maintenance of such information is important because it is used:

"...to perform various analyses, including developing trends and identifying potential hazards. The results of these analyses can be used to evaluate safety and health performance, to analyze causes of inadequate performance, to define and prioritize means for improvement of safety and health performance, and to

determine needs for modification of DOE safety and health requirements in order to reduce the probability of future accidents."

Such information is, in our opinion, critical to ensuring that the Department's safety programs are preserving the health of its contractor workforce.

In a draft version of this report, we included a discussion of a safety performance metric known as the Safety Cost Index. We deleted this issue from the final report because we learned that the Department no longer relies on it.

Appendix 1

OBJECTIVE

The objective of this audit was to determine whether CAIRS was adequately maintained.

SCOPE

The audit was performed from May 19, 2003, to November 24, 2003, at the Idaho Operations Office and Bechtel BWXT Idaho, LLC in Idaho Falls, Idaho; the Richland Operations Office, Office of River Protection, Fluor Hanford, CH2M Hill Hanford Group, and Bechtel National Incorporated in Richland, Washington; the Oak Ridge Operations Office, BWXT Y-12, BNFL-ETTP, UT-Battelle, and Bechtel Jacobs in Oak Ridge, Tennessee; the Savannah River Operations Office, Bechtel Savannah River and Westinghouse Savannah River Company in Aiken, South Carolina; and, the Office of Environment, Safety, and Health in Washington, D.C. The audit scope was limited to the reporting of injuries and illnesses from January 1, 2000, to March 31, 2003.

METHODOLOGY

To accomplish the audit objective, we:

- Obtained and reviewed contractor Occupational Safety and Health Administration logs, injury and illness case files, workers' compensation logs, and data maintained in the Department's Computerized Accident/Incident Reporting System;
- Researched Federal and Departmental regulations, policies and procedures;
- Reviewed findings from prior audit reports regarding reporting of occupational injuries and illnesses;
- Assessed internal controls and performance measures established under the *Government Performance and Results Act of 1993*; and,
- Interviewed Department and contractor safety personnel.

Appendix 1 (continued)

In pursuing our audit objective, we concentrated on an analysis of quantitative information on employee occupational injuries and illnesses, using the OSHA definition of recordable incidents as our basis. However, it should be noted that the OSHA guidelines include wide variation in severity of employee injuries and illnesses—ranging from relatively minor work related injuries (such as a laceration) to a fatality. We did not evaluate the relative severity of each of the incidents nor did we review medical records maintained by the attending physicians. Our analysis consisted of comparing data in CAIRS as of July 2003 to records maintained by the contractors, including injury and illness data documented in contractors' OSHA logs and supporting case files. We also performed limited procedures to determine whether the contractors' records were accurate, such as comparing workers' compensation logs to OSHA logs.

The audit was performed in accordance with generally accepted Government auditing standards for performance audits and included tests of internal controls and compliance with laws and regulations to the extent necessary to satisfy the audit objective. Specifically, we tested controls with respect to the Department's reporting of injuries and illnesses. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. The results of the audit address the reliability of computer-generated data applicable to our audit objective. An exit conference was held on May 4, 2004.

PRIOR REPORTS

- *Audit of Department of Energy Contractor Occupational Injury and Illness Reporting Practices (IG-0404, May 1997).* Management and operating contractors were not reporting all significant injuries and illnesses as required by Departmental or Occupational Safety and Health Administration (OSHA) guidelines. The underreporting occurred because contractor personnel did not obtain sufficient information relating to the injury/illness or they misinterpreted the OSHA recording requirements. As a result, the Department could not adequately manage its occupational safety program and ensure its facilities provided a safe work environment.
- *Audit of Kaiser Engineers Hanford Company's Award Fee (WR-B-94-1, October 1993).* The Department's Richland Operations Office did not properly evaluate Kaiser Engineers Hanford Company's performance. This was caused by Richland using performance data reported by Kaiser without verifying its accuracy. We found that Kaiser had not properly reported employee accidents, related injuries, and lost workdays. The audit demonstrated that Kaiser's safety program was not as effective as Kaiser had reported.

Appendix 3

EXAMPLES OF CAIRS DATA ISSUES

The following table provides examples of inconsistent or inaccurate data in CAIRS for the contractors where we performed detailed testing.

Contractors	Examples of data discrepancies
Bechtel BWXT Idaho	<ul style="list-style-type: none"> In 2002, the contractor reported 463 days away from work while the CAIRS database only listed 166. In 2002, the contractor reported 38 lost workday cases while CAIRS listed only 30. In the first quarter of 2003, the contractor reported 64 days away from work while CAIRS only listed 23.
Bechtel Jacobs	<ul style="list-style-type: none"> In 2002, the contractor reported 167 days away from work while CAIRS listed 115. In 2000, the contractor reported 10 recordable cases; however, only 9 appeared in CAIRS. In 2002, the contractor reported 5 lost workday cases while CAIRS listed 4.
Bechtel National, Inc.	<ul style="list-style-type: none"> In 2002, the contractor reported 1,113 days of restricted work activity while CAIRS listed 552.
Bechtel Savannah River	<ul style="list-style-type: none"> No discrepancies were noted.
BWXT Y-12	<ul style="list-style-type: none"> In 2002, the contractor reported 1,255 days away from work and CAIRS listed 1,100. In 2002, the contractor reported 39 lost workday cases while CAIRS listed 35. In 2000, the contractor reported 1,925 days away from work while CAIRS listed only 1,644.
BNFL-ETTP	<ul style="list-style-type: none"> In 2000, the contractor reported 109 days of restricted work activity while CAIRS listed 83. In 2000, the contractor reported 25 days away from work while CAIRS listed 19. In 2002, the contractor reported 101 days away from work while CAIRS listed 146.
CH2M Hill Hanford Group	<ul style="list-style-type: none"> In 2001, the contractor reported 169 days of restricted work activity while CAIRS listed 112. In 2002, the contractor reported 404 days away from work while CAIRS listed 303. For the period January 1, 2000, to March 31, 2003, eight recordable workers' compensation cases were not reported to the Department.
Fluor Hanford	<ul style="list-style-type: none"> In 2000, the contractor reported 37 days away from work while CAIRS only listed 1. In 2002, the contractor reported 1,465 days of restricted work activity while CAIRS listed 1,336. In first quarter of 2003, the contractor reported 264 days of restricted work activity while CAIRS listed 299.
UT-Battelle	<ul style="list-style-type: none"> In 2003, the contractor reported 270 days away from work while CAIRS listed 211.
Westinghouse Savannah River Company	<ul style="list-style-type: none"> In 2000, the contractor reported 1,035 days of restricted work activity while CAIRS listed 1,155.




Department of Energy

Washington, DC 20585

May 12, 2004

MEMORANDUM FOR: WILLIAM S. MAHARAY
DEPUTY INSPECTOR GENERAL
FOR AUDIT SERVICES
OFFICE OF THE INSPECTOR GENERAL

FROM: FRANK B. RUSSO 
DEPUTY ASSISTANT SECRETARY
CORPORATE PERFORMANCE ASSESSMENT
ENVIRONMENT, SAFETY AND HEALTH

SUBJECT: Inspector General Draft Report re: Reporting Occupational
Injuries and Illnesses

The Office of Environment, Safety and Health (EH), on behalf of the Department of Energy (DOE), offers the following comments regarding the Office of Inspector General (OIG) draft report entitled, "The Department's Reporting of Occupational Injuries and Illnesses." In general, the report lists several instances of discrepancies between Occupational Safety and Health Administration (OSHA) 300 Logs maintained by contractors and the lost workday cases and recordable cases entered into the Computerized Accident/Incident Reporting System (CAIRS), but overstates the implications regarding the Department's ability to accurately assess safety performance. The primary worker safety performance indicators derived from CAIRS data are Total Recordable Case Rate and Lost Work Day Case Rate. These are well known and accepted **lagging** indicators of performance to see long term trends. These indicators are not relied on by DOE management to assess safety performance real time. DOE uses many additional methods and indicators to assess and monitor safety performance. For example, 1) Office of Environmental Management (EM) senior management reviews all new occurrences each day and immediate feedback is offered on lessons learned and actions needed, 2) EM has a 30-minute notification and reporting criteria for abnormal/upset conditions, such as injuries requiring hospitalization, 3) EM conducts weekly Field Manager conference calls to discuss safety and health incidents and concerns and share information on a real time basis, and 4) frequent routine EM field management walk downs are conducted to view safety implementation in the field. The sum total of actions and indicators such as these are the basis for performance assessment, senior management decision-making and actions related to safety. Accordingly, the types of discrepancies found during the OIG audit would not materially affect assessment of DOE safety performance which is outstanding overall and has improved consistently over the past few years.

However, the items noted in the OIG report are indicative of quality assurance issues associated with the CAIRS and known to the DOE. We recently completed a year long effort culminating in a new DOE Manual 231.1A, "Environment, Safety and Health Reporting" issued March 2004. The new Manual addresses these issues.



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Appendix 2 (continued)

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OIG Recommendations and DOE Responses:

We recommend that the Assistant Secretary of Environment, Safety and Health:

1. Revise policy to improve the accuracy and usefulness of data in CAIRS by requiring quarterly reconciliation of the various sources of contractor data with CAIRS.

Response: We agree with the OIG recommendation to require quarterly DOE and contractor reconciliations between data in the CAIRS database and data at contractor locations versus the current semi-annual reconciliation. A page change(s) to the new Manual will be issued within the next 30 days.

2. In coordination with the Assistant Secretary for Environmental Management, incorporate safety reporting requirements into existing privatization contracts.

Response: With regard to the inclusion of Environment, Safety and Health (ES&H) reporting requirements into privatization contracts, there is one contract at issue (BNFL in Idaho). For the near term, DOE Idaho Field Office will submit contractor information to CAIRS to assure quality. The Idaho Contracting Officer is now considering putting the ES&H reporting requirements into the contract.

If you have any questions, please call me (301) 903-8008 or Frank Tooper (202) 586-1772.

cc:

Jessie Hill Roberson, EM-1
Raymond L. Orbach, SC-1
William D. Magwood, NE-1
James J. Mangeno, NA-1
Jonathan A. Black, IG-364

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