AN ANALYSIS OF INJURIES AT DEPARTMENT OF ENERGY WORK SITES

Prepared by the Construction Industry Research and Policy Center under contract CPWR–2006–Schriver with the Center to Protect Workers' Rights

March 2007

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1. INTRODUCTION

The Construction Industry Research and Policy Center (CIRPC) at the University of Tennessee was awarded a contract by the Center to Protect Workers' Rights, under their grant program with the National Institute of Occupational Safety and Health (NIOSH), to analyze injuries of employees of the U. S. Department of Energy (DOE) and their contractors' working at DOE work sites. The injury data analyzed were injuries recorded in DOE's Computerized Accident Incident Reporting System (CAIRS).

2. OBJECTIVES

The primary objective of this study was to gain understanding of direct and indirect causes of types of injuries during the performance of various tasks in sufficient detail to suggest and test intervention strategies in subsequent studies. Secondary objectives were to evaluate the quality of the injury cases recorded in CAIRS and to estimate the cost of injuries to DOE.

The specific steps undertaken in the study are: (1) examination of type of injuries by activity being performed; (2) examination of the relationship between type of injuries and number of lost workdays; (3) analysis of frequency of injuries coded by sex, age, time of day of occurrence, occupation, type of injury, type of work being performed, and object causing the injury; (4) development and analysis of a coding scheme for textual descriptions of conditions existing at time of injury, action of the injured worker which directly caused the injury and factors which likely contributed to the injury event; (5) evaluation of the quality of the data recorded in CAIRS; (6) estimate the cost of injuries to DOE; and (7) suggestions for improvements in CAIRS data quality.

3. DATA

CAIRS is a database managed by the DOE's Office of Information Management, and it is used to collect and analyze DOE and DOE contractor reports on injuries and illnesses occurring at DOE operations (CAIRS Website). The database is updated continuously, and individual accident reports are available from 1983 through present to DOE staff and contractors. CIRPC was granted special permission by DOE to access their database.

Appendix A contains the CAIRS Form (DOE F 5484.3) used to report recordable injuries (those injuries requiring more than in-house first-aid treatment). Although several coded data fields, such as Items 4, 6, 7, 26, 31a and 33a, provided data for the study, the textual information taken from Items 31 (Activity: What was the injured person doing immediately before the incident occurred?), and 32 (Event: What happened?), 33 (Nature of Injury: What was the injury?) was crucial in understanding the often incomplete responses to item 36 (Causes: Conditions that existed at time of the event; Actions on part of the injured that contributed to the event; and Factors which contributed to the event), focus of this study. This process allowed CIRPC to code in most cases the information required for response to Item 36. The reason Item 36 was of particular interest was, because it should provide information crucial to the subsequent development of intervention strategies at DOE worksites as well as worksites in general.

The records analyzed in this study were restricted to physical injuries resulting in 10 or more lost workdays and those occurring within a single workday, excluding injuries resulting from repetitive motion occurring over longer periods of time. The years 2000 through 2005 were selected for study, and they contained 1809 records of injuries resulting in 10 or more days of lost time. The contract with CPWR required CIRPC to include the analysis of 1000 injury records, so 167 records were randomly selected from each of the six years producing an overall

sample of 1002 records. In the selection process 260 injuries were encountered which resulted from repetitive motion over a period of time exceeding a single day, most involving carpel tunnel syndrome, and random replacements were selected for them.

4. FINDINGS

A. Causes of Injuries

Although Item 36 in the CAIRS Injury Report is intended to capture information on: (1) the physical conditions that existed at the time of the injury event; (2) the action the injured person performed which directly caused the event; and (3) the underlying causes which contributed to the event, the actual data provided in many of the 2002 records examined in this study were either missing or often insufficient in describing "what, when, how, where," the necessary ingredients for development of intervention tactics. However, by carefully reading responses to the entire Injury Report it was possible in most cases to create the information which should have been reported in Item 36. More will be said about the quality of the CAIRS injury data in the following section of the findings.

The data from Item 36 (original data plus constructed data inferred from other items in the Injury Report where original data were missing or insufficient) were coded into two categories of physical conditions, 14 categories of actions and 23 categories of underlying causes.

Table 1 shows the frequency of recorded injuries which occurred under two conditions: (1) normal conditions, i.e., the typical environment in which the employee worked or traveled according to the victim's occupation; and (2) hazardous conditions, i.e., an environment where there was a specific(s) hazard not normally encountered by the employee in accordance with the victim's occupations. An example of an injury occurring under normal conditions would be a

forestry worker tripping over a felled log; while this environment might be hazardous to employees in other occupations, this would be a normal environment in which foresters are expected to work. An example of an injury occurring under hazardous conditions would be an employee delivering mail who slipped on a greasy floor, an unexpected condition not normally encountered.

It can be seen from Table 1 that the majority of injury events occurred under normal conditions, varying by year from a low of 116 (69.5%) events in 2005 to a high of 144 (86.2%) in 2002. Overall, 775 (77.3%) of the 1002 injury events occurred under normal conditions as defined by the authors.

Table 2 shows the frequency of 11 categories of actions performed by the victims which directly caused the injury events overall and for each of the six years. It can be seen that the overall leading cause was "Mis-Step/Improper Movement" with 393 (39.2%) of the 1002 events, followed by "Normal Task Actions" (where the victim was performing normal work/travel tasks and did not inadvertently cause the event) with 364 (36.3%) events. Other high-frequency causes were "Did Not Follow Procedure" with 121 (12.1%) and "None: Action Did not Cause Accident" with 48 (4.8%) events.

Table 3 shows the frequency of 21 categories of factors contributing to the injury event by year and overall. It can be seen that the overall leading factor was "Lack of Attention/Poor Judgment" with 538 (53.7%) of the 1002 events, followed by "Unsafe Situation (Tripping Hazards, Ergonomic Conditions)" with a frequency of 248 (24.8%) of the events, "None" with 133 (13.3%) of the events, "Unknown Employee Health Condition" with 119 (11.9%) of the events, and "Weather (Wind, Ice, Rain)" with 90 (9.0) events.

The Injury Reports were also reviewed to determine who directly caused the injury: the victim receiving the injury, another individual, a combination of the victim and another person, or no one directly caused the injury – the victim was simply at the wrong place at the wrong time. Table 4 shows the results. It can be seen that in most cases the victim caused most injuries; in 765 (76.3%) of the cases reviewed the victim caused the injury. The next most prevalent condition was "Wrong Place at Wrong Time" with a frequency of 188 (18.8%) of the cases, followed by "Other Person" with 22 (2.2%) of the cases, and "Combination" with 11 (1.1%) of the cases. In 16 cases (1.6%) it was not possible to determine who caused the injury.

Another way of viewing the injuries was to classify each in terms of work status at time of injury: the victim was performing a work task, the victim was in work status but moving between work sites, or the victim was in a non-work activity. Table 5 shows the frequency of injuries by work status at time of injury. It can be seen that most injuries occurred during the performance of work tasks with 805 (80.3%) of the injuries occurring in this category, followed by "Non-Work Activity" with 96 (9.6%) cases and "Change in Location" with 88 (8.8%) cases. It was not possible to classify 13 (1.3%) of the cases.

As stated earlier the data analyzed consisted of random samples of 167 injury records for each of the six years, 2000 through 2005. However, since injury cases involving carpel tunnel syndrome (CTS) and other cases where the injury did not have a specific time of occurrence (occurring during a period of more than one week) were excluded from this study, larger samples were actually reviewed in each year in order to obtain 167 non-CTS and related cases. Table 6 shows the number of CTS and no-point-in-time (NPIT) injury records which were encountered during the process of selecting 167 eligible cases each year. Table 6 shows the results of the occurrence of CTS and other NPIT injury cases during the random selection of 167 eligible

cases. The important finding was that there was a sharp decline in the occurrence of CTS cases over the six-year period, falling from a high of 62 (26.6% of total CTS cases) cases in 2000 to a low of 24 (12.4%) cases in 2005. Only 15 other NPIT cases were encountered during the selection process over the six-year period, and their trend of occurrence was relatively flat over time, peaking with six (40.0%) cases in 2003.

B. Estimate of Quality of Data Recorded on the CAIRS Injury Record Form

While reviewing the sample of 1002 CAIRS Injury Records, it became apparent that the quality of the data was poor in many instances. Information was frequently incomplete or missing altogether from narrative descriptions of various aspects of the injury event. Although the task of analyzing the quality of the CAIRS data was not originally in the statement of work, the PI's saw an opportunity for improvement of the data by empirically documenting error and incompleteness rates for 14 data items in the CAIRS Individual Accident/Incident Report (Appendix A). A sample of 10 accident records was randomly selected for each of the six years, 2000 through 2005, and the data recorded for the following 14 items were analyzed for its accuracy and its completeness: (1) Item 31; (2) Item 31A; (3) Item 32; (4) Item 32A; (5) Item 33; (6) Item 33A; (7) Item 34; (8) Item 34A; (9) Item 34C; (10) Item 34D; (11) Item 35; (12) Item 36-Part 1; (13) Item 36-Part 2; and (14) Item 36-Part 3. Table 7 shows the results of the analysis. Although the analysis was subjective in many instances, overall the rate of incompleteness for the seven Items requiring text was 7.8 percent and the overall error (incorrect text) rate for the seven text items was 21.1 percent. The overall error rate for the seven Items requiring a coded definition was 9.0 percent.

However, since Item 36-Part 1, Part 2 and Part 3 are the most important items in the injury record in terms of efficacy and efficiency in the design and implementation of accident

intervention programs, their incompleteness rates and error rates should be specifically noted, in order to evaluate the quality of CAIRS data. In the sample of 60 recorded injuries shown in Table 7 Item 36-Part 1 had an incomplete rate of 6.7 percent and an error rate of 26.7 percent; Item 36-Part 2 had an incomplete rate of 11.7 percent and an error rate of 38.3 percent; and Item 36-Part 3 had an incomplete rate of 6.7 percent and an error rate of 38.7 percent.

Four deaths occurred during the 2000-2005 period which by chance were not selected in the sample of 1002 analyzed in Tables 1 through 6 or the sample of 60 analyzed in Table 7. The PI's reasoned that data accuracy might be better in incidents involving serious injuries or deaths. Therefore, the injury reports for the four death cases were analyzed to see if their data were more complete and more accurate. It was found that rate of incompleteness for the seven text Items was 25 percent, and the error rate was 35.7 percent. The error rate for the seven Items requiring a coded definition was 7.1 percent. Thus there was no evidence of improvement in the quality of data for the death cases.

The apparent laxity in accurate and complete reporting of crucial data in CAIRS in no way reflects upon the outstanding safety record experienced at DOE worksites. Injury rates per 100 full-time workers at DOE worksite remain far below the national average for the private sector. At DOE worksites the injury rates for 2001, 2002, 2003, 2004 and 2005 were 2.4, 2.2, 1.8, 1.6 and 1.6, respectively. Comparable rates for the total private sector were, respectively, 5.7, 5.3, 5.0, 4.8 and 4.6. Thus recorded injuries in the private sector were 2.6 times greater in the private sector than on DOE worksites.

Table 1. Conditions Existing at Time of Event

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Cause	Standard Conditions (Normal)	119	71.2%	138	82.6%	144	86.2%	134	80.2%	123	73.7%	116	69.5%	774	77.3%
Conditions	Hazardous Conditions (Unsafe)	45	26.9%	28	16.8%	16	9.6%	30	18.0%	44	26.3%	46	27.5%	209	20.9%
	Unknown	3	1.8%	1	0.6%	7	4.2%	3	1.8%	0	0.0%	5	3.0%	19	1.9%
	TOTAL	167	100%	167	100%	167	100%	167	100%	167	100%	167	100%	1002	100%

Table 2. Direct Actions Causing the Event

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Actions	Mis-Step / Improper Movement	58	34.7%	54	32.3%	55	32.9%	79	47.3%	80	47.9%	67	40.1%	393	39.2%
	Improper Climbing	5	3.0%	2	1.2%	4	2.4%	1	0.6%	1	0.6%	2	1.2%	15	1.5%
	Improper Use of Equipment/Selection of Tool	1	0.6%	2	1.2%	0	0.0%	0	0.0%	2	1.2%	2	1.2%	7	0.7%
	Lack of Pre-Job Inspection/Failed to Prepare	1	0.6%	0	0.0%	0	0.0%	1	0.6%	0	0.0%	1	0.6%	3	0.3%
	Normal Task Actions	57	34.1%	68	40.7%	65	38.9%	60	35.9%	50	29.9%	64	38.3%	364	36.3%
	Unsafe Position (ergonomics)	5	3.0%	5	3.0%	3	1.8%	1	0.6%	1	0.6%	3	1.8%	18	1.8%
	Did Follow Procedure	25	15.0%	24	14.4%	19	11.4%	13	7.8%	23	13.8%	17	10.2%	121	12.1%
	None (action didn't cause accident)	10	6.0%	8	4.8%	12	7.2%	7	4.2%	9	5.4%	2	1.2%	48	4.8%
	Used an Improper Procedure	1	0.6%	2	1.2%	2	1.2%	0	0.0%	0	0.0%	0	0.0%	5	0.5%
	Unknown (Lack of Information Reported)	4	2.4%	2	1.2%	7	4.2%	5	3.0%	1	0.6%	9	5.4%	28	2.8%
	TOTAL	167	100%	167	100%	167	100%	167	100%	167	100%	167	100%	1002	100%

Table 3. Contributing Factors

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Factors	No/Poor Procedure	22	13.2%	10	6.0%	4	2.4%	13	7.8%	11	6.6%	14	8.4%	74	7.4%
	Lack of Understanding/Training	3	1.8%	3	1.8%	1	0.6%	1	0.6%	2	1.2%	3	1.8%	13	1.3%
	Lack of Attention / Poor Judgment	91	54.5%	73	43.7%	91	54.5%	94	56.3%	112	67.1%	77	46.1%	538	53.7%
	Equipment Failure	7	4.2%	8	4.8%	3	1.8%	12	7.2%	6	3.6%	5	3.0%	41	4.1%
	Didn't use proper tools / equipment	6	3.6%	7	4.2%	7	4.2%	6	3.6%	9	5.4%	5	3.0%	40	4.0%
	Unsafe Equipment (Design / Set-up)	6	3.6%	8	4.8%	7	4.2%	8	4.8%	5	3.0%	11	6.6%	45	4.5%
	Rushing / Hurry Task	8	4.8%	6	3.6%	7	4.2%	7	4.2%	7	4.2%	6	3.6%	41	4.1%
	Weather (Wind, Ice, Rain, etc.)	10	6.0%	16	9.6%	9	5.4%	12	7.2%	21	12.6%	22	13.2%	90	9.0%
	Unsafe Situation (Tripping Hazards, Ergonomic Conditions)	38	22.8%	34	20.4%	33	19.8%	38	22.8%	46	27.5%	59	35.3%	248	24.8%
	Employee Misconduct	1	0.6%	1	0.6%	0	0.0%	2	1.2%	1	0.6%	2	1.2%	7	0.7%
	Poor Supervision	5	3.0%	4	2.4%	9	5.4%	1	0.6%	2	1.2%	8	4.8%	29	2.9%
	Unknown/Employee Health Condition	22	13.2%	22	13.2%	23	13.8%	18	10.8%	17	10.2%	17	10.2%	119	11.9%
	Poor Communications	2	1.2%	1	0.6%	1	0.6%	3	1.8%	2	1.2%	1	0.6%	10	1.0%
	Improper PPE	0	0.0%	0	0.0%	0	0.0%	1	0.6%	1	0.6%	1	0.6%	3	0.3%
	No PPE	1	0.6%	3	1.8%	4	2.4%	2	1.2%	4	2.4%	2	1.2%	16	1.6%
	Continued work after injury	3	1.8%	16	9.6%	16	9.6%	1	0.6%	6	3.6%	2	1.2%	44	4.4%
	Unexpected event	4	2.4%	4	2.4%	0	0.0%	9	5.4%	7	4.2%	5	3.0%	29	2.9%
	Rarely performed task	2	1.2%	2	1.2%	4	2.4%	2	1.2%	1	0.6%	2	1.2%	13	1.3%
	None	14	8.4%	26	15.6%	31	18.6%	24	14.4%	22	13.2%	16	9.6%	133	13.3%
	Unknown (Lack of info.)	9	5.4%	3	1.8%	8	4.8%	7	4.2%	7	4.2%	16	9.6%	50	5.0%
	Repetitive actions	1	0.6%	7	4.2%	2	1.2%	5	3.0%	1	0.6%	2	1.2%	18	1.8%
	TOTAL	255	153%	254	152%	260	156%	266	160%	290	174%	276	165%	1601	160%

Table 4. Person Causing Injury

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Injury Initiated By	Victim	128	76.6%	125	74.9%	114	68.3%	124	74.3%	129	77.2%	145	86.8%	765	76.3%
	Other Person	6	3.6%	2	1.2%	5	3.0%	4	2.4%	5	3.0%	0	0.0%	22	2.2%
	Combination	5	3.0%	0	0.0%	0	0.0%	2	1.2%	3	1.8%	1	0.6%	11	1.1%
	Wrong Place at Wrong Time	24	14.4%	37	22.2%	42	25.0%	35	21.0%	30	18.0%	20	12.0%	188	18.8%
	Unknown	4	2.4%	3	1.8%	6	3.6%	2	1.2%	0	0.0%	1	0.6%	16	1.6%
	TOTAL	167	100%	167	100%	167	100%	167	100%	167	100%	167	100%	1002	100%

Table 5. Work Status of Victim

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
Injury Initiated By	Performing Task	137	82.0%	141	84.4%	133	79.6%	139	83.2%	123	73.7%	132	79.0%	805	80.3%
	Change in Location														
	Moving to/from Task	22	13.2%	7	4.2%	6	3.6%	12	7.2%	16	9.6%	25	15.0%	88	8.8%
	Non-Work Activity	4	2.4%	17	10.2%	23	13.8%	15	9.0%	28	16.8%	9	5.4%	96	9.6%
	Unknown	4	2.4%	2	1.2%	5	3.0%	1	0.6%	0	0.0%	1	0.6%	13	1.3%
	TOTAL	167	100%	167	100%	167	100%	167	100%	167	100%	167	100%	1002	100%

Table 6. Carpel Tunnel Syndrome and Other No-Point-In-Time Injuries

		2000 167 Cases		2001 167 Cases		2002 167 Cases		2003 167 Cases		2004 167 Cases		2005 167 Cases		Total 1002 Cases	
		#	%	#	%	#	%	#	%	#	%	#	%	#	%
CTS/Repetitive Data	Reviewed Cases	233	100%	196	100%	200	100%	236	100%	219	100%	193	100%	1277	100%
	Analyzed Cases	167	71.7%	167	100%	167	83.5	167	70.8	167	76.2%	167	86.5%	1002	78.5%
	CTS/Repetitive Cases	65	27.9%	27	100%	31	15.5%	63	26.7%	49	22.4%	25	13.0%	260	20.4%
	Other Cases (No point of injury)	1	0.4%	2	1.0%	6	2.5%	3	1.4%	1	0.5%	1	6.7%	15	1.2%

Table 7. Incomplete Rate and Error Rate for 14 Items in Sample of 60 Injury Records

Item	Incomplete	Wrong
31 (Text)	10 (16.7%)	7 (11.7%)
31A (Code)	–	9 (15.0%)
32 (Text)	2 (3.3%)	6 (10.0%)
32A (Code)	–	5 (8.3%)
33 (Text)	1 (1.7%)	1 (1.7%)
33A (Code)	0	3 (5.0%)
34 (Text)	–	19 (31.7%)
34A (Code)	–	3 (5.0%)
34C (Code)	–	4 (6.7%)
34D (Code)	–	0
35 (Code)	–	0
36-Part 1 (Text)	4 (6.7%)	16 (26.7%)
36-Part 2 (Text)	7 (11.7%)	23 (38.3%)
36-Part 3 (Code)	4 (6.7%)	23 (38.7%)

APPENDIX A

DOE F5484.3
(xx-xx)
All Other Editions
Are Obsolete

U.S. Department of Energy

INDIVIDUAL ACCIDENTIINCIDENT REPORT

Official Use Only - Privacy Act

OMB Control No.
1910..Q300

Information about the Organization

Organization Name:

Organization Code: 4004203

Department/Division/ID Code: BAR/BeLAB

Program Office Symbol: SC
NAICSCode:

Information about the Employee

1) Full Name: XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

2) S.S/ID Number: XXXXXXXXXXX

3) Home Address (Street/City/State/Zip): XXXXXXXXXXXXXXXXXXXXXXXXXX:XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

4) Date of Birth (YYYYMMDD): 19560928 Age: 49

5) Date of Hire (YYYYMMDD): 20030915

6) Gender: Female 7) Job Title: Biologist II

8) Occupation Code: 0204

9) Experience on this job/equipment: Over 12 months

10) Length of employment: Over 12 months

Information about the Physician or Other Health Care Professional

11) Name of physician or other health care professional:

12) If treatment was given away from worksite, where was it given? (Provide Name of facility and full address) Methodist Med. Ctr. Healthworks, OR, TN

13) Was employee treated in an emergency room? No

14) Was employee hospitalized overnight as an in-patient? No

Information about the Case

15) Case number: 200602

Multi-Org Case?: No
Multi-Case Number:

16) Accident Type: Injury/Illness

17) Investigation Type: C

18) Accident Place: Indoors

19) On Employer's Premises: Yes

20) Specific Location: SC-1O Room 31

21) Date of Injury or Illness (YYYYMMDD): 20060330

22) Time employee began work (military): 07

23) Is time of event known: Yes

24) Time of event (military): 10

25) OSHA Injury/Illness Classification:
Injury

26) Number of days away from work: 0

27) Number of days of restricted work activity or job transfer: 0

28) Permanent transfer to a different job because of disability due to accident: No

29) Terminated because of disability due to accident: No

30) Is the case closed: Yes

Information about the Case -- Continued

31) ACTIVITY: What was the employee doing just before the incident occurred? Describe the activity as well as the tools, equipment, or material the employee was using. Be specific. Examples: 'climbing a ladder while carrying roofing materials'; 'spraying chlorine from hand sprayer'; 'daily computer key-entry.'
Opening a box containing a blood diagnostic specimen

31-a) Activity code: 0901- RESEARCH/TESTING ACTIVITY

32) EVENT: What happened? Tell us how the injury occurred. Examples: 'When ladder slipped on wet floor, worker fell 20 feet'; 'Worker was sprayed with chlorine when gasket broke during replacement'; 'Worker developed soreness in wrist over time.'

Small puncture wound of the left index finger while opening a box containing blood diagnostic specimens

32-a) Event code: 0009 - Contact with objects and equipment, nec

33) NATURE of Injury/Illness: What was the injury or illness? Tell us the part of body that was affected and how it was affected; be more specific than 'hurt', 'pain', or 'sore.' Examples: 'strained back'; 'chemical burn, hand'; 'carpal tunnel syndrome.'
Small puncture wound of the left index finger

33-a) Nature code: 0036 - PUNCTURE

33-b) Part of body affected code: 3401 - FINGER(S)

34) OBJECT: What object or substance directly harmed the employee? Examples: 'concrete floor'; 'chlorine'; 'radial arm saw.' If this question does not apply to the incident leave it blank. Broken vacutainer blood tube

34-a) Primary object or substance (Source) code: 1215 - LABORATORY GLASSWARE

34-b) Other objects or substances: - (Unspecified)

34-c) Did equipment design or defect contribute to accident cause or severity? No
34-d) Personal protective equipment code (PPE being used by employee at the time of event): 0603 - SAFETY GLASSES WITH SIDE SHIELDS 0906 - LAB COAT

35) Did the employee die? No

If 'Yes', enter date of death (YYYYMMDD)

36) CAUSES: State the conditions that existed at the time of the event, the actions on the part of the employee that contributed to the incident, and the factors or underlying causes that contributed to the incident.
Conditions: Employee was performing routine laboratory functions opening sample boxes arriving at the lab.
Actions: While lifting vials in a zip-lock bag from the shipping box, punctured the left index finger on a vial that was broken in transport.
Factors: Root cause identified as inproperly packaged blood diagnostic specimens for transport.

36-a) Direct cause: DD – Design/Material

Indirect cause: IE-Employee

37) CORRECTIVE ACTIONS: Describe actions taken or recommended to prevent recurrence of the incident
Actions Taken: Follow up to identify specimen source person - Negative HIV and Hepatitis panel documented. Initiated the requirement for the use of nitrile gloves for opening packages in addition to existing practices of handling blood products. Re-familiarization of the lab staff of potential hazards of sharps and bloodborne pathogens in arriving samples and to suspend work and/or take special precautions when irregularities are experienced.
Actions Recommended: All submitting organizations notified that improperly packaged diagnostic specimens will not be accepted at the lab. Completion of a lessons learned document.